

Cost benefit and risk analysis of the potential relocation of the APVMA

Department of Agriculture and Water Resources

Final report
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Executive Summary

Introduction

On 15 May 2015, the Minister for Agriculture and Water Resources (the Minister) reaffirmed the Government's commitment to increasing the regional presence of three Rural Research and Development Corporations (RDCs) and the Australian Pesticides and Veterinary Medicines Authority (APVMA) by establishing offices and/or relocating core operations from Canberra to regional Australia. On 10 February 2016, the Minister announced that three RDCs were to establish regional offices outside Canberra (with the Rural Industries RDC relocating core operations to Wagga Wagga, the Fisheries RDC to establish a regional office in Adelaide and the Grains RDC to establish several regional offices outside Canberra) and that the proposed relocation of the APVMA to Armidale would go through the process of an independent cost benefit risk analysis.

The Department of Agriculture and Water Resources engaged Ernst & Young to undertake a cost, benefit and risk analysis of the relocation of the APVMA, which is the subject of this report. This has involved assessing the following two options:

- ▶ option 1: Status quo - this option represents the current prevailing situation (i.e. assumes that the APVMA will continue to operate as it currently does in Canberra); and
- ▶ option 2: Relocation of the APVMA to Armidale with the maintenance of current functions - this option examines the impact of moving the APVMA to Armidale.

Scope

This study is comprised of three elements:

1. an assessment of the economic costs and benefits of relocating the APVMA from Canberra to Armidale;
2. an examination of the key risks of relocation and effective mitigation strategies or plans that could address the identified risks; and
3. an analysis of the economic impacts on Canberra and Armidale.

These three elements provide a reasonably complete picture of the impacts of the relocation. Cost benefit analysis has been used to assess the merits of the relocation from the perspective of society. This involves comparing the values (costs and benefits) of the proposed government policy of relocating the APVMA to Armidale to the policy alternative of not moving the APVMA. It allows decision makers to identify the difference the policy would make to society from an economic well-being perspective.

There are a number of risks associated with the relocation of the APVMA to Armidale which are not considered as part of the cost benefit analysis. The maintenance of the APVMA's current functions is a key assumption within option 2. Implicit in this assumption is the fact that the APVMA will be able to recruit the required number of staff to undertake these functions. As a result, a related, but separate assessment of risks has been undertaken to identify, assess and evaluate key risks. The assessment also identifies potential risk consequences, possible risk treatments, mitigations and critical next steps.

In addition, cost benefit analysis does not measure the flow-on impacts of policy decisions. In order to measure these flow on impacts, an assessment of economic impacts through the use of an input output model of the Australian economy and regional economies (known as REMPLAN) has been undertaken. This model traces the revenue and expenditure flows that link industries and workers within and outside economic regions. For instance, an increase in output in one industry (the "direct impact") gives rise to demand for inputs from other industries (industrial effect) as well as labour (consumption effect).

Analysis of costs and benefits

Overall, the analysis of costs and benefits associated with the relocation of the APVMA to Armidale has found that the economic benefits for the Australian economy associated with moving the APVMA from Canberra to Armidale are modest. This is because the strategic and operational benefits of having the APVMA operate out of Armidale appear to be limited. This is not to say that the APVMA could not operate successfully from Armidale over the longer term if key risks are addressed and transition is executed appropriately.

While a number of potential benefits of relocation were identified, the majority of potential benefits (apart from a possible reduction in property costs) are not anticipated to result in material economic advantages for society. The following potential benefits to the APVMA as a result of relocation were identified by some stakeholders as part of this work:

- ▶ co-location with the University of New England (UNE);
- ▶ enhanced proximity to end users and other agricultural researchers;
- ▶ reduction in property costs; and
- ▶ leverage of NBN infrastructure.

In addition, relocation may provide the following benefits to the Armidale community:

- ▶ job creation;
- ▶ increased availability of skilled employees (due to partners of employees moving to Armidale); and
- ▶ a more diversified economy.

A variety of costs have been identified resulting from the relocation of the APVMA to Armidale. It is noted that the analysis identified predominately financial costs, which in this case are economic costs. These include costs to the APVMA, such as operational, moving, property and human capital costs and to industry, such as increased travel and opportunity costs.

The net present value (NPV) of the economic assessment of relocation is estimated to be an economic cost of \$23.19 million. This \$23.19 million represents the economic cost over 20 years to society in present day dollars using a project discount rate of 7% and thus should not be construed as the cash or financial cost of the project. Given that it is an economic analysis the cost benefit analysis includes the cost and benefits to all the stakeholders impacted by the project not just the government.

There are high costs in Years 1-5, driven by the cost of constructing a new building, moving costs and costs associated with recruitment, training, redundancy and oversight. However, from Year 5 to Year 20, cost savings arise driven by the net savings in property costs.

The estimated economic cost of \$23.19 million excludes any potential cost to industry arising from the risks to the agricultural sector, the chemical industry or Australia's trading reputation. Whilst these risks are real, their impacts and consequences are based on a probability of an event occurring and as such in adopting the principle of conservatism they have been excluded.

To effectively undertake the move of the APVMA and adopt relevant risk mitigation strategies, the cash cost to the government could be significantly higher than the estimated economic cost of \$23.19 million.

Sensitivity testing and scenario analysis

Scenario analysis has been used to explore the impact that a different mechanism for housing the APVMA (i.e. renting an existing building (scenario 2), compared to constructing a new building

(scenario 1)) would have on the analysis¹. The scenario analysis showed that securing a lease over the WJ McCarthy Building results in reduced net property costs (relative to continuing to lease the Symonston facility). While initially costs are greater due to the need to continue to pay for the current facility as well as the building in Armidale, from Year 5 onwards there are significant property cost savings to the APVMA associated with this scenario. These arise from the lower rental cost associated with the WJ McCarthy Building (when compared to the Symonston facility).

These lower net property costs have a significant impact on the NPV of the economic costs of relocation. Based on the net property costs associated with securing a lease over the WJ McCarthy Building and with all other variables consistent with the central base case, the economic cost of relocation over 20 years is estimated to have an NPV of \$11.54 million.

Scenario 2 therefore has a significantly lower economic cost when compared to the estimated \$23.19 million economic cost of relocation over 20 years associated with scenario. This demonstrates that the results of the cost benefit analysis are quite sensitive to the mechanism used to house the APVMA (i.e. renting an existing building, compared to constructing a new building).

To explore the effect of changing key variables on the results, partial sensitivity testing was undertaken across the two main variables for the cost benefit analysis, the discount rate used and the number of employees that are willing to relocate to Armidale. The sensitivity testing alters both these assumptions independently to identify the impact that changes to these variables have on the results of the cost benefit analysis.

The sensitivity testing in relation to the number of staff willing to relocate has explored the impact that an additional 10 and 20 per cent of staff relocating (at each staff level) has on the results. This showed that the greater the proportion of staff willing to relocate, the lower the total economic cost of relocation. If an additional 10 per cent of staff (compared to the results of the staff survey) were willing to relocate, the total economic cost is estimated to be \$22.19 million, while an additional 20 per cent of staff being willing to relocate (compared to the results of the staff survey) is estimated to reduce the total economic cost to \$21.19 million.

Varying the discount rate has a mixed impact on the results of the cost benefit analysis and suggests that the overall results are not materially sensitive to changes in this assumption. Comparing the use of a lower discount rate of 3 per cent to the central case (discount rate of 7 per cent), the NPV of costs decreases to \$22.38 million. This modest impact occurs given the scale and profile of the cost savings - a lower discount rate increases the real value of the savings in Year 5-20 and hence decreases the total cost. The use of a higher discount rate also reduces costs, albeit marginally (to \$23.13 million). While this may seem counter intuitive, it occurs because of the scale and profile of costs and cost savings. Significant economic costs are incurred in the first four years (due to the construction of a new building and the costs associated with redundancies, training and recruitment). A higher discount rate therefore reduces these costs, while also reducing the benefits. However, the higher discount rate reduces the costs in the earlier years to a greater extent than the later year benefits, hence reducing the total cost.

¹ It is noted that the primary analysis undertaken has assumed that the construction of a new building to house APVMA is required, based on a lack of availability of an existing facility. In principle (from an economic theory perspective) the lease or buy choice should have no impact on the economic analysis as economically the rental cost will match the consumption of economic resources under the build option (if the assets deliver the same service) - i.e. the rental cost over the building's life should match the cost of constructing the building. However, given the uncertainty surrounding the use of an existing facility (particularly in relation to the level of services able to be delivered), the financial costs associated with the WJ McCarthy building have been used as a proxy for economic costs in the scenario analysis, leading to differences in the estimated NPV of the two scenarios.

Assessment of risks

The risks associated with moving the APVMA are significant. The key risks associated with the relocation of the APVMA to Armidale that have been identified are:

- ▶ the APVMA may be unable to relocate, or recruit and replace, key APVMA executive, management and technical assessment staff;
- ▶ during transition and in the short term, the APVMA may not be able to sustain its rate of effort for registration of new agricultural and veterinary chemical products;
- ▶ the APVMA may be unable to maintain and grow its capability in the medium term; and
- ▶ the APVMA may have reduced access to stakeholders.

The most significant risk identified through the analysis relates to the ability of the APVMA to relocate, or to recruit and replace, key APVMA executive, management and technical assessment staff within the first two years of relocation. Critically, the loss of technical assessment staff (regulatory scientists) has the potential to seriously disrupt the ability of the APVMA to successfully fulfill its purpose and achieve its objectives in the short and medium term.

Further, a key concern for stakeholders in relation to the relocation of the APVMA to Armidale is the impact that the relocation may have on the approval of new chemicals for use. Stakeholders are concerned that delays to the approval of new chemicals will arise as a result of the loss of staff, the disruption to business and/or the impact to the APVMA's current reform agenda. The analysis found that if poorly executed, the economic costs of moving the APVMA could therefore be considerably higher than identified in the cost benefit analysis. Based on conservative estimates of a one year delay in the approval of new products, the potential impact on the agriculture sector for crops alone could be between \$64 million and \$193 million per annum. The risks to the agvet chemical industry associated with moving the APVMA are also significant with a one year delay in the approval of new chemicals potentially impacting industry to the value of between \$0.8 million and \$2.7 million per annum in terms of lost revenues.

The following risk treatments and mitigations have been identified as potential mechanisms for minimising any loss of technical expertise within the APVMA and identifying timeframes and strategies for replacing staff and returning staff levels to full capacity:

- ▶ short term phased transition;
- ▶ medium term phased transition (parallel organisations);
- ▶ the development of a new business model;
- ▶ regulatory scientist training program;
- ▶ relocation/recruitment incentive packages;
- ▶ outsourcing technical assessment work; and
- ▶ technological solutions to assist collaboration and engagement.

Further work is required to more fully understand the implications of each of the proposed risk treatments and mitigations, the implementation pathways and preferred strategies. Based on the risk assessment and identification of risk treatments and mitigations, the following critical next tasks have been identified:

- ▶ an analysis of supply (and demand) for regulatory scientists;
- ▶ an analysis of connectivity between APVMA business groups;
- ▶ development of recruitment, retention and training strategies; and
- ▶ development of a transition plan.

Economic impacts

An input-output economic analysis was undertaken to identify the flow-on impacts on the Armidale region and the Australian Capital Territory (ACT) associated with the relocation of the APVMA to Armidale. The relocation of the APVMA has different impacts on the Armidale and the ACT economies. This is for two key reasons:

- ▶ the make-up of the economies are different: the flow-on economic modelling defines the population of the Armidale region at 24,104 and total output at \$2.01 billion; whereas the population of the ACT is defined as 357,218 and total output at \$61.3 billion. The economy of the ACT is therefore much greater and significantly more diverse than the Armidale region.
- ▶ the change in the economies is different: the Armidale region experiences construction impacts in the first two years as well as the increase in employment from the relocation of the APVMA, whereas the ACT only experiences the impact through the loss of jobs due to the relocation of the APVMA.

To estimate the impact in each region the modelling was conducted over three years of analysis. The estimated flow-on impacts on employment, output and value-added of the relocation in the ACT and Armidale regions for Year 1, 2 and 3 are set out in Table 1.

Overall, the analysis has found that as Armidale is a less populated and diverse region than the ACT, the relocation of staff has less of an economic impact in Armidale than it does the ACT (in absolute terms). However, the magnitude of the impact in each of these economies is different, with the proportional impact on the Armidale economy being greater.

For Armidale, in Year 1 the flow-on economic impacts in the Armidale region relate to the commencement of construction of the new building. In Year 2, the impacts relate to the finalisation of construction and the relocation of APVMA staff. In the final year, the flow-on impacts estimated relate only to the 189 direct jobs transferring from the ACT to Armidale.

In the ACT, there is no impact in the first year. In the second year the relocation of the APVMA occurs and therefore there is a direct job loss of 189 jobs. In the final year there is a continued job loss of 189 jobs.

The final year provides the ongoing impact in each of the regions, as it shows only the impacts of staff relocation (and not the construction of a new building). The estimated impact on the ACT of the relocation in Year 3 is expected to be a loss of 365 jobs (or 0.2% of total ACT employment), whereas the modelling estimates an increase in 350 jobs (or 3.4% of total Armidale employment) in Year 3. Similarly, the impact on output in Year 3 is expected to be a loss of \$101.88 million in the ACT (or 0.2% of total output) compared to a gain of \$77.54 million (or 3.7% of output) in Armidale.

The differences have to do with the consumption activities for each of the economies. While the gain in Armidale is not as great, the magnitude of the impact in each of these economies is significantly different. A loss of \$101.88m in output in Year 3 represents a 0.2% loss in output in the ACT. This is such as the larger and more diverse an economy is, the more likely that consumption occurs within that economy.

A significant proportion of the economic impacts identified in Years 1 and 2 in the table below arise from the construction of a new building (as discussed above). It is noted that in the event that a different mechanism for housing the APVMA is used (e.g. renting an existing building, compared to constructing a new building) these impacts would not occur and the profile of impacts would be similar to the impacts identified in Year 3.

Table 1: Summary of estimated flow-on impacts²

	Impact on the ACT			Impact on Armidale		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Modelled impact	Nil	Loss of 189 direct jobs	Ongoing loss of 189 direct jobs	Construction of \$9.137m	Construction of \$9.366m Additional 189 direct jobs	Ongoing additional 189 direct jobs
Employment (number and % of total employment)	Nil	365 jobs 0.2%	365 jobs 0.2%	53 jobs 0.5%	404 jobs 4.0%	350 jobs 3.4%
Output (number and % of total output)	Nil	\$101.88 m 0.2%	\$101.88 m 0.2%	\$19.70m 0.9%	\$97.74m 4.7%	\$77.54 m 3.7%
Value-added (number and % of total value-added)	Nil	\$55.38 m 0.2%	\$55.38 m 0.2%	\$7m 0.6%	\$48.90m 4.3%	\$41.73 m 3.7%

Source: EY analysis, REMPLAN

² Note that REMPLAN analysis represents a year by year analysis and so numbers cannot be added for each year to present a total over a period as there will be double-counting in jobs.

1. Background and context

This chapter provides the background and context for this study. It outlines the scope and methodology used, the importance of agvet chemicals to the Australian economy and the current regulatory framework for agvet chemicals.

1.1 This study

The APVMA is a Australian Government statutory authority established in 1993 to centralise the registration of all agricultural and veterinary chemical products (see Box 1) entering the Australian marketplace. Currently located in the Canberra suburb of Symonston, the APVMA regulates these chemicals and products up to and including the point of retail sale. Anything beyond this point, including controlling the use of these chemicals, is regulated by state and territory governments (APVMA, About, 2015).

Box 1: Agvet chemicals and products

Agriculture and veterinary chemicals (agvet chemicals) are substances in agricultural or veterinary chemical products that are primarily responsible for a product's biological or other effects (APVMA, Active Constituents, 2015). They may also be referred to as the 'active constituents' in these products. Agricultural chemicals include pesticides such as herbicides, fungicides, insecticides and plant growth regulators, but exclude fertilisers. Veterinary medicines include all substances that can be used to prevent, cure, or alleviate a disease or injury of an animal (Productivity Commission, 2008).

In 2012-13 product sales of agvet chemicals amounted to over \$3 billion, comprised of just under \$2.3 billion agricultural (pesticides) and \$940 million veterinary medicines (APVMA, Commonwealth of Australia Gazette, No. APVMA 4, 2014). The Australian market comprises 2% of the world market for agricultural chemical products and 1% for veterinary chemical products (Tim Harding and Associates, 2013).

On 15 May 2015, the Minister for Agriculture and Water Resources (the Minister) reaffirmed the Government's commitment to increasing the regional presence of three RDCs and the APVMA by establishing offices and/or relocating core operations, from Canberra to regional Australia. Initially, both Armidale and Toowoomba were considered to be viable alternatives for the APVMA. Following this initial announcement, on 10 February 2016, the Minister announced that three RDCs were to establish regional offices outside Canberra (with the Rural Industries RDC relocating core operations to Wagga Wagga, the Fisheries RDC to establish a regional office in Adelaide and the Grains RDC to establish several regional offices outside Canberra) and that the proposed relocation of the APVMA to Armidale would go through the process of an independent cost benefit risk analysis.

The Department commissioned EY to undertake a cost, benefit and risk analysis of the relocation of the APVMA, which is the subject of this report.

1.1.1 Scope

This study is comprised of three elements:

1. an assessment of the economic costs and benefits of relocating the APVMA from Canberra to Armidale;
2. an examination of the key risks of relocation and effective mitigation strategies or plans that could address the identified risks; and
3. an analysis of the economic impacts on Canberra and Armidale.

These three elements provide a reasonably complete of the impacts of the relocation. Cost benefit analysis has been used to assess the merits of the relocation from the perspective of society. This involves comparing the values (costs and benefits) of the proposed government policy of relocating the APVMA to Armidale to the policy alternative of not moving the APVMA. It allows decision

makers to identify the difference the policy would make to society from an economic well-being perspective.

There are a number of risks associated with the relocation of the APVMA to Armidale which are not considered as part of the cost benefit analysis. The maintenance of the APVMA's current functions is a key assumption within option 2. Implicit in this assumption is the fact that the APVMA will be able to recruit the required number of staff to undertake these functions. As a result, a related, but separate assessment of risks has been undertaken to identify, assess and evaluate key risks. The assessment also identifies potential risk consequences, possible risk treatments, mitigations and critical next steps.

In addition, cost benefit analysis does not measure the flow-on impacts of policy decisions. In order to measure these flow on impacts, an assessment of economic impacts through the use of an input output model of the Australian economy and regional economies (known as REMPLAN) has been undertaken. This model traces the revenue and expenditure flows that link industries and workers within and outside economic regions. For instance, an increase in output in one industry (the "direct impact") gives rise to demand for inputs from other industries (industrial effect) as well as labour (consumption effect).

The detailed work specification for this study as set out in the Request for Quote is outlined in Appendix A.

1.1.2 Approach

The following outlines the details of the approach including a description of the cost benefit analysis framework and the methodology used to undertake this study.

1.1.2.1 Cost benefit analysis

Cost benefit analysis is a framework to assess the merits of an activity (project or policy) from the perspective of society. As such, cost benefit analysis estimates and totals the equivalent money value of the benefits and costs to determine, from an economic perspective, if the activity of policy is beneficial. As a management decision tool, a cost benefit analysis does not cost the value of the project or cost the implementation of a project. Rather it is a tool to measure the different economic costs to society (as opposed to an individual) between two (or more) projects.

This cost benefit analysis therefore involves comparing the value (costs and benefits) of the proposed government policy of relocating the APVMA to Armidale to the policy alternative of not moving the APVMA. It will allow decision makers to identify the difference the policy would make to society from an economic well-being perspective.

It is important to note that cost benefit analysis identifies and quantifies the benefits and costs of the activity, as distinct from the revenues and costs of the activity. It describes the merits of the activity from society's perspective and considers economic, societal and environmental impacts. By comparison, a financial feasibility or costing assessment only considers the financial impacts of the activity and would not include impacts that do not involve money, such as environmental impacts, the distribution of wealth impacts across the community, opportunity costs or effects on social cohesion.

In considering the overall economic impact on society a number of key economic principles are applied when undertaking a cost benefit analysis. These are outlined below.

1. All anticipated benefits and costs are expressed in monetary value equivalent (where possible).
2. All benefits and costs are expressed as present day values.
3. An outcome is a true social outcome only if it changes the net benefit to society as a whole.
4. Only social benefits and costs are included, not private benefits and costs.

5. Society is restricted to include all people who benefit or incur a cost from the policy under consideration.
6. Only the extra benefits and extra costs from the project are included, not the total benefits.
7. All sunk costs are to be excluded.
8. Common or fixed costs do not change the net benefits between alternatives and hence are excluded.
9. A real change includes a change in the physical quantity or quality of a given resource or output and/or a change in individual satisfaction (utility) derived from the resources or output.
10. All changes in benefits associated with the project are included.
11. Transfer payments are to be excluded.
12. Government costs are included at the true opportunity cost.
13. Double counting in productivity gains or losses is to be avoided.
14. Changes in asset value are included.
15. Both positive and negative externalities are included.
16. Unpriced benefits and cost are real changes in net social benefits and are therefore included.
17. There is an assumption that all markets are fully competitive, prices are stable and full employment exists.
18. In a competitive market which assumes full employment and price stability, there are no real net secondary benefits or costs to society as a whole and as such they are excluded.
19. Multiplier impacts are excluded.
20. There is an assumption that the alternative project will be undertaken exactly the same as the base line project.
21. Where a policy's primary objective is regional development, secondary benefits are listed only and not incorporated in the net benefits of calculation.

In adopting these economic principles, there is a need to derive common economic values for the social benefits and costs of each alternative. Many of the cost and benefits already have true economic values, some may have financial values and others may have no kind of monetary value at all.

Where there clearly exists a monetary value (i.e. changes in operating costs of the APVMA), these have been incorporated into the cost benefit analysis. Benefits or costs with no monetary value, such as the opportunity cost of land or increased costs to industry due to a change in the location of the APVMA, require economic values and assumptions to be given to them in order to estimate their economic cost or benefit. Consequently, the key concept of a shadow price has been applied. This represents either an adjustment of a market price to more accurately reflect its opportunity cost to society, or, where market prices do not exist, a (shadow) price needs to be estimated based upon a revealed preference methodology. Where no shadow pricing exists for a particular cost or benefit, these are excluded from the calculations of the cost benefit analysis and analysed qualitatively.

1.1.2.2 Methodology

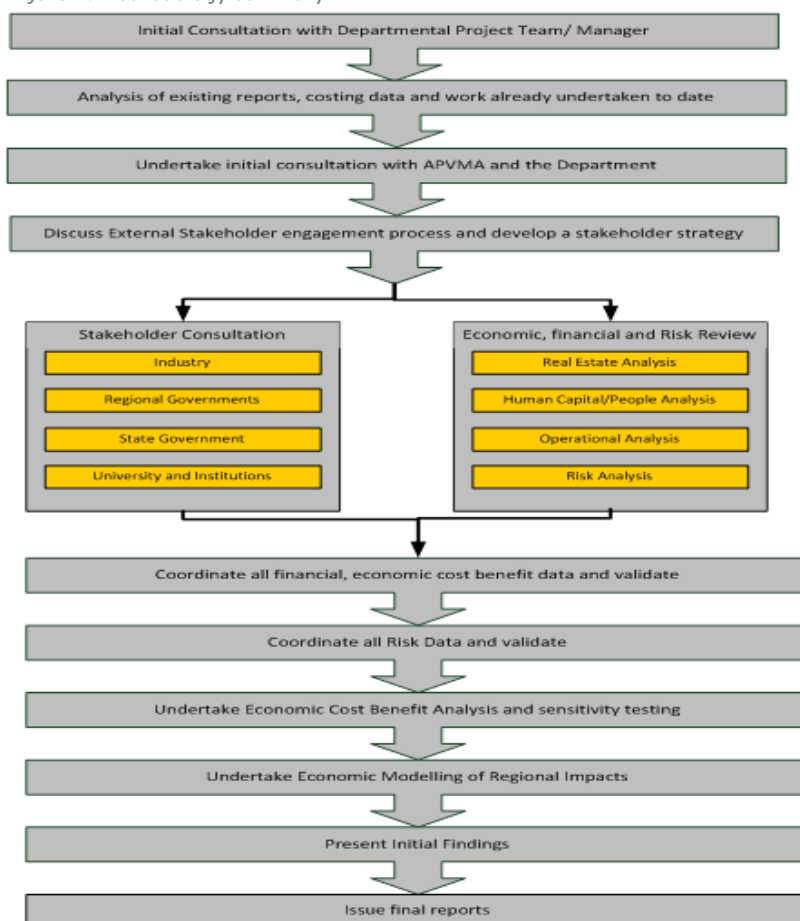
Figure 1 summarises the methodology used to undertake this study. The following key data gathering activities were undertaken to provide information and data to be used across the three elements of the study:

- ▶ stakeholder consultation - stakeholder consultations were undertaken with 20 organisations and individuals. These stakeholders were drawn from the Armidale community, APVMA customers and agvet chemical end users. A list of organisations consulted and their representatives can be found in Appendix B;

- ▶ consultation with APVMA staff - throughout the study, there was ongoing consultation with APVMA staff, particularly the APVMA executive to gather information and data. This information and data provided the basis for a variety of assumptions used in the analysis. In assessing the information to support the costs and benefits provided by the APVMA, a high degree of scrutiny was undertaken to determine their validity. As such, all costs and data provided by the APVMA were assessed from the perspective of:
 - ▶ completeness - that all relevant costs had been included and no double counting of costs had occurred;
 - ▶ currency - that all costs and information provided by the APVMA were current;
 - ▶ validity - that only relevant costs relating to the move were included;
 - ▶ accuracy - that all calculations and assumptions used to identify costs were accurate and appeared to contain no errors;
 - ▶ conservatism - that the APVMA adopted the principle of conservatism when identifying relevant costs; and
 - ▶ rationalism - that the assumptions used by the APVMA to estimate future outcomes upon which costs were based appeared rational and based on current data and operations.
- ▶ conducting a risk discussion - a risk discussion was held with the APVMA executive to gain a deeper understanding of the key risks and issues and potential consequences; and
- ▶ a survey of APVMA staff - a survey of APVMA staff was undertaken to gather data to inform the assumptions of the cost benefit analysis and the measurement of economic impact. The survey was completed by 170 staff, representing a response rate of 85%. The key survey results are outlined in Appendix C.

The parameters of the cost benefit analysis are consistent with guidance by the Office of Best Practice Regulation. The approach used, including key assumptions, for each of the three elements of the study is outlined in further detail in each relevant chapter.

Figure 1: Methodology summary



Source: EY

1.2 The importance of agvet chemicals

Australian agriculture is an important contributor to the Australian economy, both domestically and through exports. Agriculture contributes around 2% of Australia's gross domestic product and 15% of total Australian merchandise exports (Australian Bureau of Agricultural and Resource Economics and Sciences, 2014). Further, agriculture is a significant employer, particularly in regional areas. Around 270,000 people are employed in the sector with a further 223,000 in food, beverage and tobacco manufacturing (Australian Bureau of Agricultural and Resource Economics and Sciences, 2015).

The value of Australian farm production was \$54 billion in 2014-15 (up 5.4% from 2013-14), with livestock contributing \$18.7 billion, crops contributing \$26.8 billion and wool, milk and eggs contributing \$8.1 billion (Australian Bureau of Statistics, 2016).

Agvet chemicals play a vital role in supporting farm production. A study commissioned by CropLife estimated that 68% of the total value of crop production can be attributed to crop protection products (i.e. agriculture chemicals such as various pesticides) (Deloitte Access Economics, 2013). The study further estimated that crop protection products increase Australian crop yields by about 40% (CropLife, n.d.).

Another study undertaken by the Australian Farm Institute found that the cost of disease in livestock industries could be as high as 10% of the total value of annual production, amounting to approximately \$2 billion per year (Australian Farm Institute, 2015). This sector is heavily supported by veterinary chemicals, with livestock farmers utilising more than \$1.1 billion worth of animal medicines and productivity enhancing technologies annually (Australian Farm Institute, 2015).

In addition to supporting the Australian agriculture industry, the Australian agvet industry exports approximately 13% of agvet products (Deloitte Access Economics, 2013).

1.3 The regulatory framework

This section outlines the current regulatory framework, exploring the role of regulators in the economy and the current regulation of agvet chemicals.

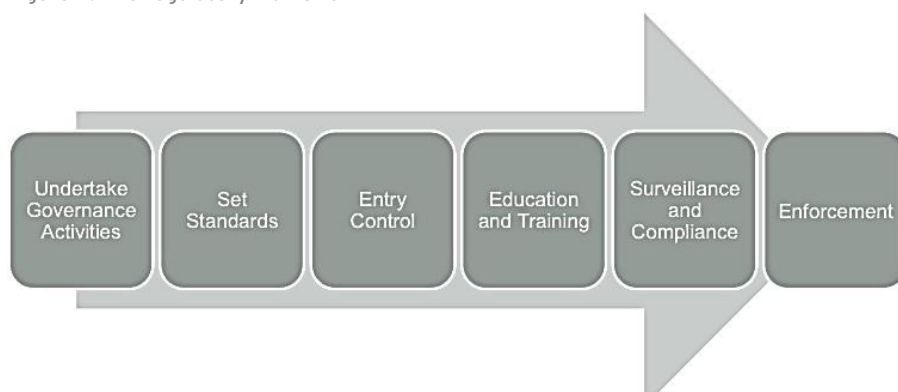
1.3.1 The role of regulators in the economy

The functions and activities of a regulator typically fall within six functions as outlined below.

1. Governance - The establishing of a governance framework to undertake regulation and set quality standards for a particular group or industry and the administration of the relevant organisation.
2. Standards - Identification of standards and quality to be adhered to and the establishment and setting of standards, rules and regulations. This is usually the setting of policy, writing of legislation, regulations, rules, guidelines and procedures for industry to adhere to.
3. Entry Control - The issuing of certificates of registration or verification that certifies an industry participant to operate in the industry. It provides a "right" for participation in the regulated industry. For the APVMA this would be the assessment of applications.
4. Education - Promotion and communication of the required standards of compliance. Educating and providing assistance to industry on compliance and how to comply with the regulations.
5. Surveillance - Review of and surveillance of activities to ensure compliance. Auditing the industry to ensure there is compliance with the regulations.
6. Enforcement - Taking remedial action for non-compliance with the regulations.

These six functions form the basis of the Regulatory framework depicted in Figure 2.

Figure 2: The regulatory framework



Source: EY analysis

Table 2 provides a high level assessment of the impact on each of the regulatory functions of the APVMA during a proposed transition period.

Table 2: Roles within the APVMA

	Undertake Governance Activities	Set standards	Entry control	Education and Training	Surveillance and Compliance	Enforcement
APVMA Functions	Low Impact	Medium impact	High Impact	Low Impact	No Impact	No Impact
Beneficiaries (Industry)	Low Impact	No impact	High Impact	No Impact	No Impact	No Impact
End Users (i.e. Farmers)	No Impact	No Impact	Potentially High Impact	No impact	No Impact	No Impact
External Networks (i.e. Research Institutions)	No Impact	No Impact	No Impact	No impact	No Impact	No Impact
Economy	No Impact	No Impact	Potentially High Impact	No impact	No Impact	No Impact

Source: EY analysis

1.3.2 The regulation of agvet chemicals

Agvet chemicals in Australia are regulated under the National Registration Scheme (the NRS), a partnership between the Commonwealth and state and territory governments that was established through an intergovernmental arrangement. Within the NRS, the APVMA holds the role of national regulator.

The NRS was established under the *Agricultural and Veterinary Chemicals (Administration) Act 1992* (Cth) (the *Agvet (Administration) Act*). This Act stands alongside the following pieces of legislation:

- ▶ the *Agricultural and Veterinary Chemicals Act 1994* (Cth) (the *Agvet Act*);
- ▶ the *Agricultural and Veterinary Chemicals Code Act 1994* (Cth) (the *Agvet Code Act*); and
- ▶ the schedule to the *Agvet Code Act 1994* (the *Agvet Code*).

The *Agvet (Administration) Act* established a national registration authority (now the APVMA) to administer laws relating to agricultural and veterinary chemical products and conferred powers and functions onto the authority. *The Agvet Code Act 1994* gave effect to the *Agvet Code*. The *Agvet Code* outlines, among other things, how the APVMA evaluates and registers products and contains provisions that ensure compliance and enforcement of the *Agvet Code* (APVMA, 2015). The code is a schedule to the *Agvet Code Act 1994*.

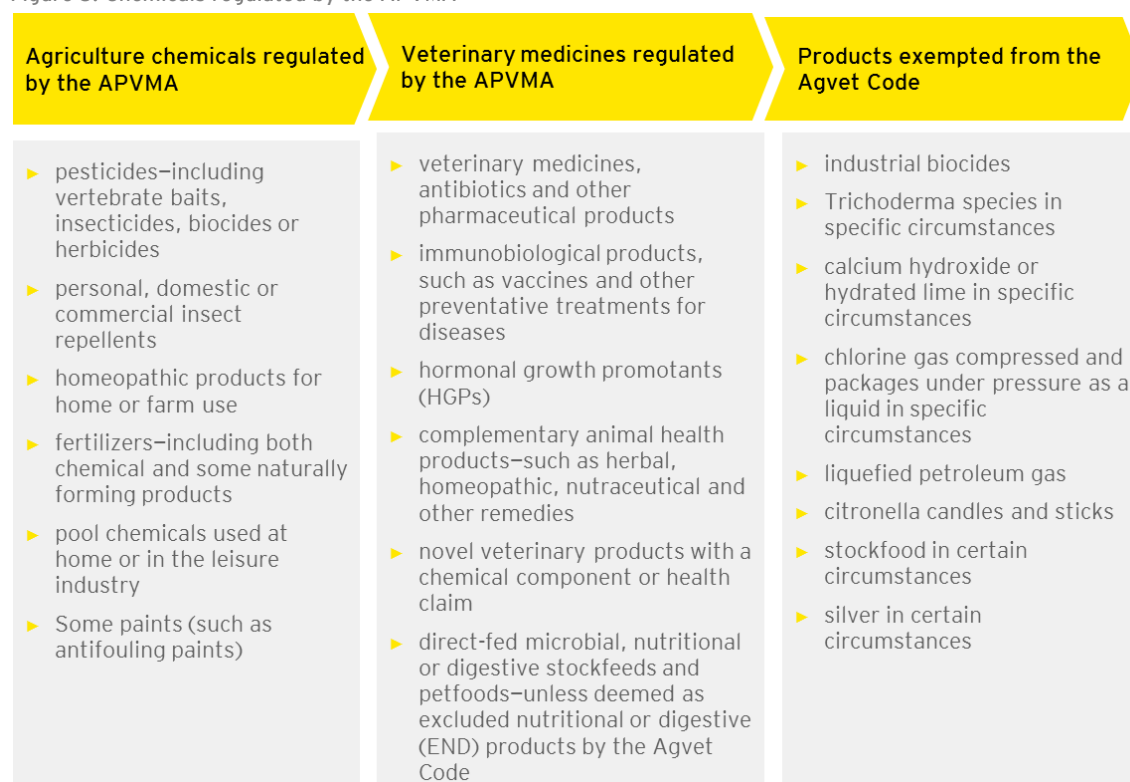
The function of the code is to make provisions in relation to:

- ▶ the evaluation, approval and control of the supply, of active constituents for proposed or existing agricultural chemical products or veterinary chemical products; and
- ▶ the evaluation, registration and control of the manufacture and supply, of agricultural chemical products and veterinary chemical products.

The principal aim of this agvet chemical regulatory policy is to ensure that these chemicals are used properly and do not harm humans or non-target animals and plants (Dept. of Agriculture and Water Resources, 2016). Agvet legislation determines whether an agvet chemical must be registered and regulated. There are exceptions within this legislation and the APVMA has the power to exempt substances, active constituents and chemical products, or certain activities, from the operation of certain offence and civil penalty provisions of the *Agvet Code* (APVMA, Exemptions, 2014).

Figure 3 outlines the chemicals regulated by the APVMA and those exempted from the code. It should be noted that these lists are not exhaustive.

Figure 3: Chemicals regulated by the APVMA



Source: (APVMA, Exemptions, 2014) and (APVMA, 2015)

1.4 This report

The remainder of this report is structured as follows:

- ▶ chapter 2 describes the APVMA including its role in the regulation of agvet chemicals, organisational operations and design, key stakeholders and its current reform agenda;
- ▶ chapter 3 examines the costs and benefits associated with the relocation of the APVMA to Armidale;
- ▶ chapter 4 explores the risks associated with the relocation of the APVMA to Armidale;
- ▶ chapter 5 details the economic impacts on both the ACT and Armidale region associated with the relocation of the APVMA; and
- ▶ chapter 6 concludes the report, providing overall findings.

2. The APVMA

This chapter describes the APVMA including its role in the regulation of agvet chemicals, the application and approval process, structure, funding, key stakeholders and its current reform agenda. The purpose of this chapter is to give an overview of the APVMA and provide an understanding of the APVMA's operations to frame the assessment of costs, benefits and risks in the subsequent chapters.

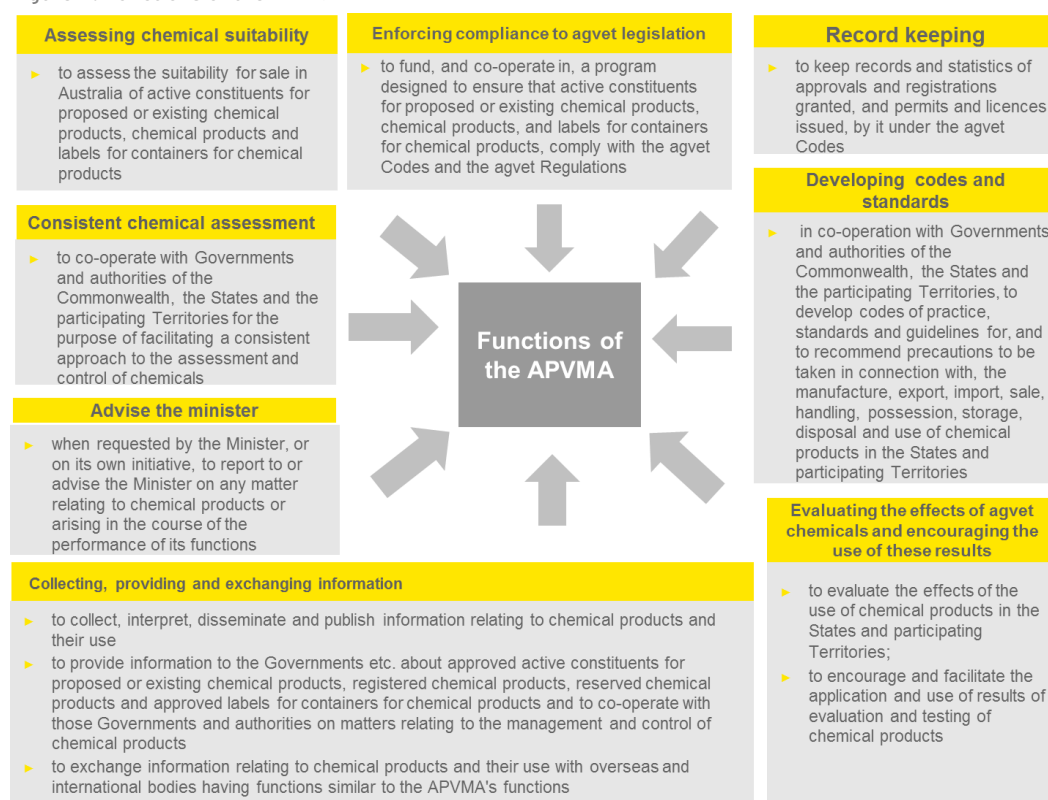
2.1 Role in the registration and regulation of agvet chemicals

The APVMA regulates the agvet sector through applications, registrations, permits, licenses and chemical reviews, as well as by undertaking compliance and enforcement activities. The APVMA (non-exclusively):

- ▶ processes applications;
- ▶ issues permits;
- ▶ undertakes registered chemical activities (reviews reports, undertakes regulatory actions and makes decisions);
- ▶ undertakes compliance and enforcement activities;
- ▶ assesses adverse experience reports; and
- ▶ partakes in various communication activities such as attending industry conferences and meetings.

Figure 4 outlines the functions of the APVMA as prescribed in the *Agvet Act 1994*. The Figure demonstrates that APVMA's regulatory role means that it does not conduct laboratory tests or primary research of agvet chemicals and holds no specialised laboratory equipment as part of its assets. Further, the APVMA's functions necessitate a high level of interaction between the APVMA and state and federal government departments.

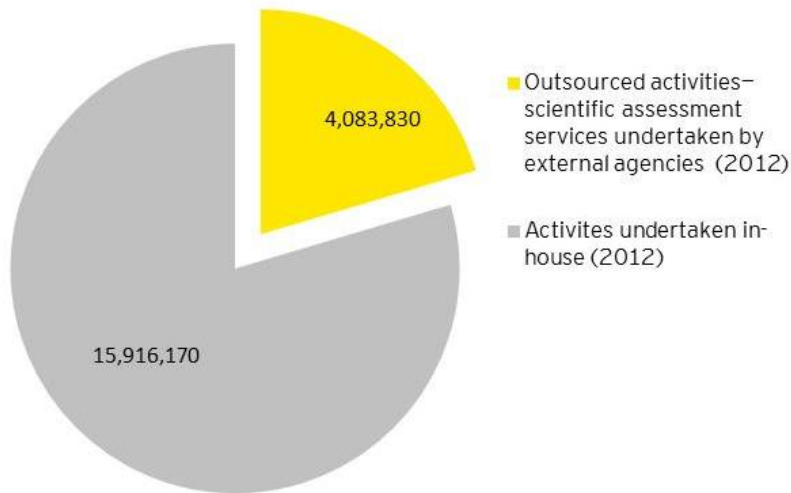
Figure 4: Functions of the APVMA



Source: *Agvet Act 1994 (Cth)*

Although most of the APVMA's functions are done in-house, some are outsourced. Examples include the Department of Health undertaking some toxicology work, the Department of Environment undertaking some environmental assessments and efficacy being entirely assessed externally. Assessment coordinators from the APVMA work with the assessors at these departments (and/or external consultants) to ensure that assessments are of a high standard. The management of these outsourced components is performed online. In 2012, the cost of outsourced activities for scientific assessment services undertaken by external services formed approximately 20% of the cost of registration and approval (\$4m out of a total \$20m) as demonstrated in Figure 5.

Figure 5: Cost of outsourced registration activities



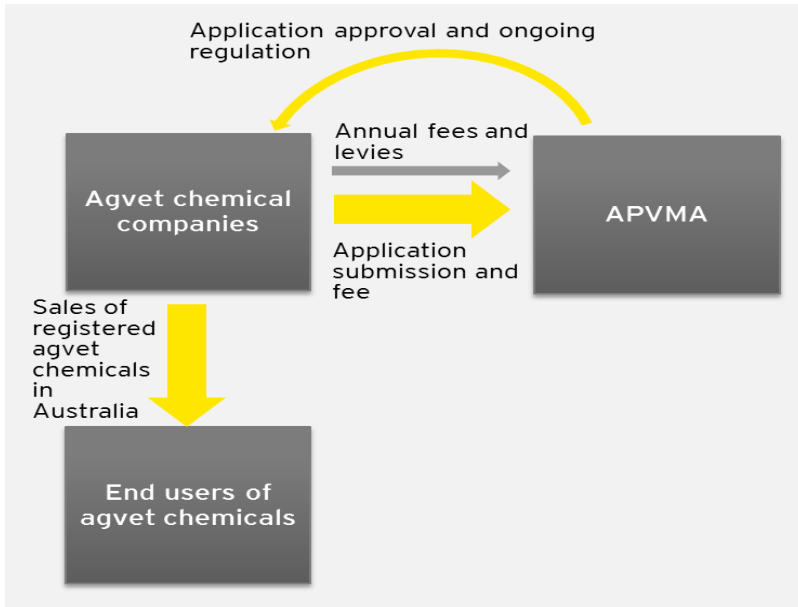
Source: (APVMA, APVMA cost recovery impact statement, 2013)

2.2 Application and approval process

The APVMA receives applications from agriculture chemical companies and veterinary medicine manufacturers, processes these applications and either approves or denies them to be released onto the Australian market. The APVMA then continue to ensure compliance, with companies paying an annual fee for their products to remain registered. Companies must pay levies that are based on the wholesale prices of their products.

Figure 6 demonstrates the APVMA's role in the application and ongoing registration of chemicals for sale in Australia. It can be seen from this figure that the APVMA has direct interactions with agvet chemical companies, but its functions do not require it to have any direct interaction with the end users of agvet chemicals (such as farmers and growers).

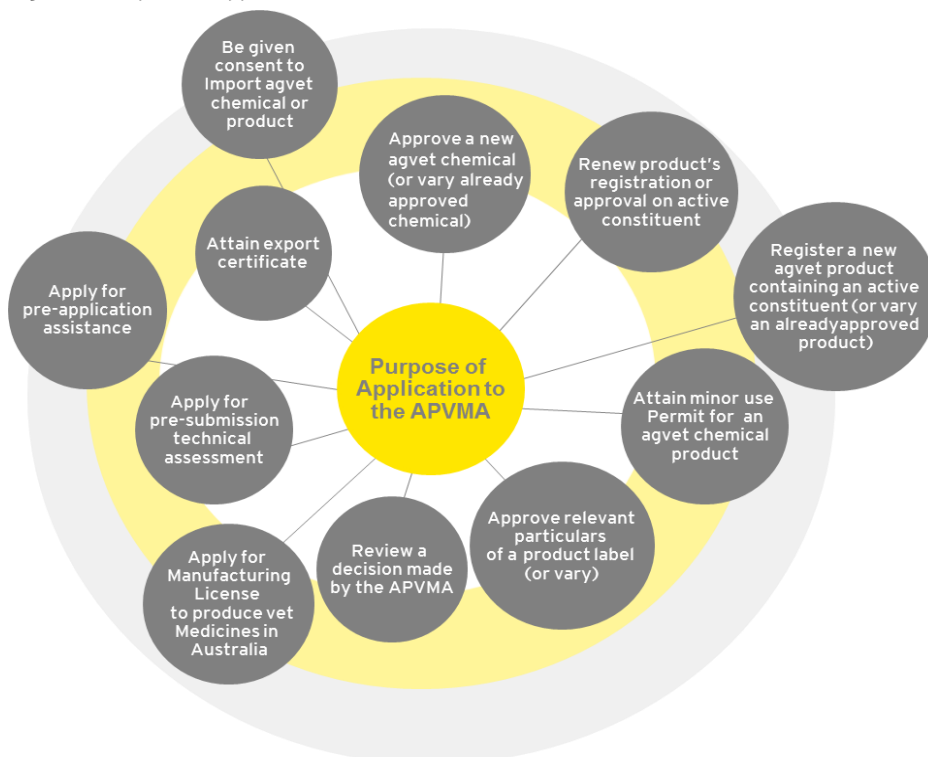
Figure 6: The APVMA's role in the registration of agvet chemicals in Australia



Source: (APVMA, Overview of agvet chemical regulation , 2015)

Applications are submitted to the APVMA by individuals, companies, organisations, trade associations and other groups. These are submitted online except for manufacturing licenses, which must be done in hard copy. Applications for the approval of a new agvet chemical are just one of the many reasons for submitting an application to the APVMA. Other purposes are outlined in Figure 7. The numerous reasons for applications to the APVMA emphasise the number of circumstances in which the APVMA must interact with agvet chemical companies.

Figure 7: Purpose of applications to the APVMA

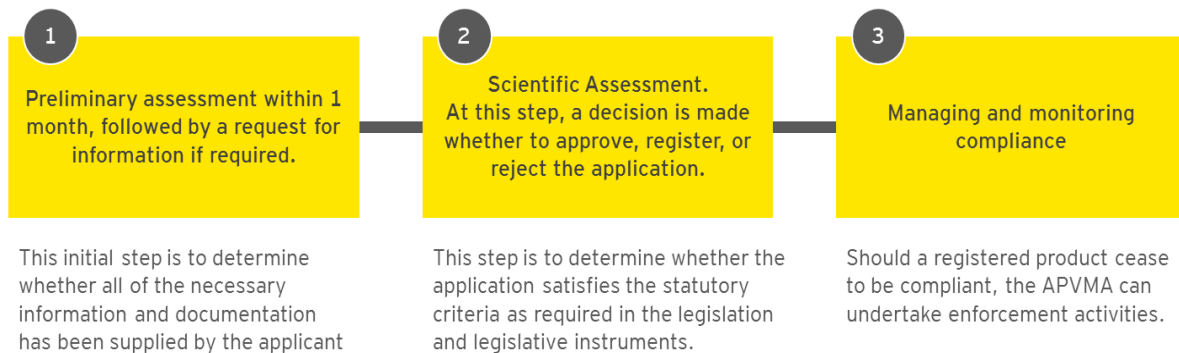


Source: (APVMA, Overview of agvet chemical regulation, 2015)

The *Agvet code 1994* prescribes the timeframes within which claims must be assessed. A preliminary assessment must be completed within one month of lodgment. Notice must then be given to the applicant within 14 days of the decision to inform them that their claim will now be assessed. The prescribed timeframes after the preliminary step range from two to eighteen months, depending on the type of application (for example, an application for a product with an already approved chemical will take less time than an application for a chemical that must be evaluated from scratch). If the application is to vary the approval or registration, the timeline is only one month (if it is a prescribed variation).

The claim assessment process is comprised of three key steps, which are outlined in Figure 8. Throughout this process, the APVMA will, if possible, have face-to-face consultations with agvet chemical company representatives regarding topics such as various application requirements, to streamline the application process.

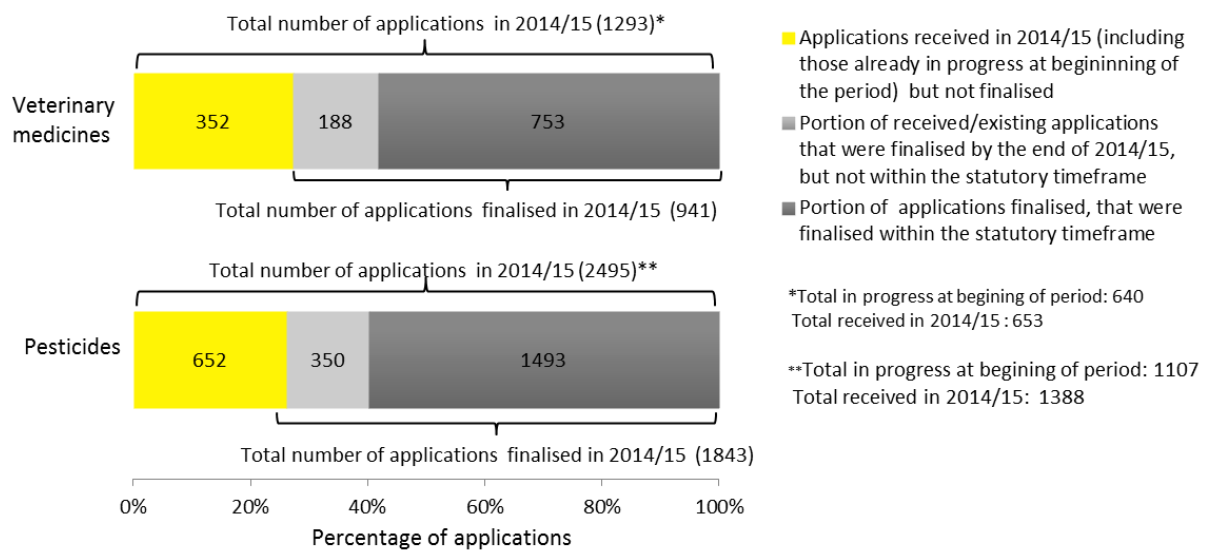
Figure 8: The application assessment process



Source: *Agvet code 1994*

Figure 9 outlines the standing of agvet chemical applications to the APVMA in 2014-15. In 2014-15 the APVMA had 2,495 agriculture chemical applications and 1,293 veterinary medicine applications, comprising of existing applications (from the previous period) and new applications received.

Figure 9: Applications to the APVMA in 2014-15



Source: (APVMA, Annual Report, 2015)

2.3 Structure

The APVMA is comprised of four core divisions, along with a chief scientist unit and the CEO and currently employs 189 staff. Table 3 outlines the divisions, as well as their key roles and responsibilities.

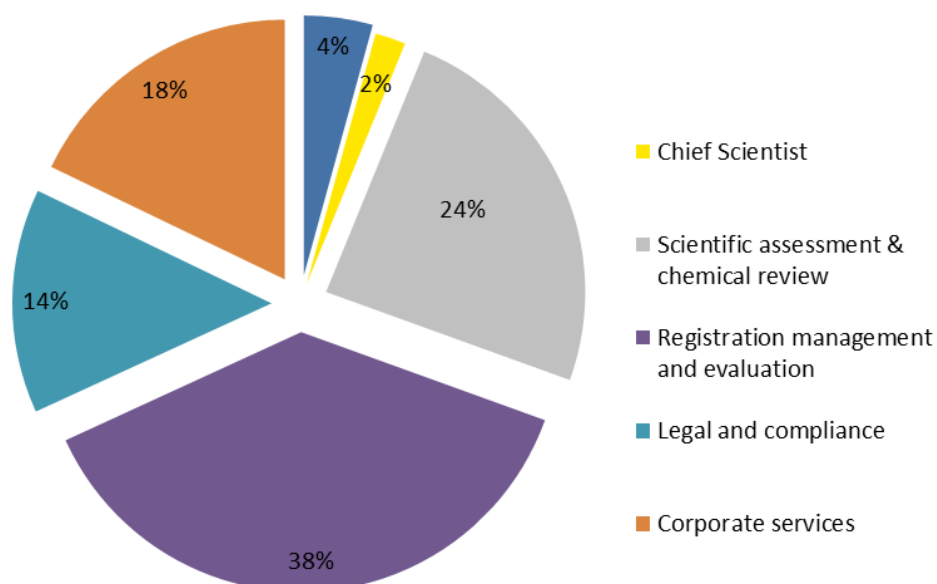
Table 3: Roles within the APVMA

Division	Role
The CEO	▶ Manage the affairs of the APVMA and may exercise any of the powers and perform any of the functions of the APVMA. All acts and things done in the name or on behalf of the APVMA by the CEO are taken to have been done by the APVMA.
Chief Scientist	▶ Ensure the science frameworks and practices of the APVMA continue to meet appropriate standards. Tasked with developing projects and initiatives to enhance scientific capability of the APVMA.
Scientific assessment and chemical review	▶ Provide scientific assessments that underpin registration decisions. ▶ Reviews chemicals of concern.
Registration management and evaluation	▶ Process and evaluate applications to register products, permits and active constituents. ▶ Manage the interface with clients.
Legal and compliance	▶ Ensure the integrity of the regulatory framework through compliance, audit and monitoring, coordination and sound legal advice.
Corporate services	▶ Provide systems and support to all operations.

Source: (APVMA, Our Structure, 2015)

Figure 10 outlines the percentage of staff within each Division. As can be seen, the majority of staff (38%) are within the registration management and evaluation division, followed by the scientific assessment and chemical review division (24%).

Figure 10: Staff by division



Source: Information provided by the APVMA

For the APVMA the relationship between the Divisions is highly dependent. There is a strong nexus between each function that requires close proximity in terms of location for the APVMA to function efficiently.

2.4 Funding

The APVMA's activities are funded almost wholly through cost recovery, with a small amount of funding coming from budget appropriation. Appropriations are made to the Department of Agriculture and Water Resources (Department of Finance, 2016), which are then paid to APVMA and are considered departmental for all purposes, meaning they go towards the annual operating costs of the entity (APVMA, Portfolio Budget Statements Department of Agriculture and Water Resources, 2016).

The main source of cost recovery is from registrants of pesticides and veterinary medicines, who pay application fees to register products and then continue to pay an annual fee to maintain registration. Registrants also pay levies based on the annual wholesale sales value of registered products. The cost recovery arrangements that are currently in place were implemented in 2013.

In 2014-15, revenue from cost recovery amounted to just over \$28.4 million, with the APVMA also receiving \$743,000 in departmental appropriations (APVMA, Annual Report, 2015).

2.5 Stakeholders

As a national independent regulator, the APVMA must consult with stakeholders regarding the regulation of agvet chemicals (APVMA, Consulting and Engaging with Stakeholders, 2016), with s8 of the Agvet (Administration) Act explicitly allowing for the APVMA CEO to consult with any interested party or body. This is done through means such as direct contact with peak bodies or individual entities and their members, hosting information seminars and workshops, online feedback, public consultations and publications on the APVMA website (APVMA, Consulting and Engaging with Stakeholders, 2016).

The APVMA has a range of stakeholders across both government and the veterinary and agriculture industry. The decisions of the APVMA impact producers and consumers on both the agvet chemical buy side and the sale side. Their decisions are informed by the overarching aim of ensuring the benefits of agvet chemical regulation outweigh the risks. The global nature of the agriculture, veterinary medicine and agvet chemical industries means that stakeholders of the APVMA are not restricted to persons within Australian borders. Table 4 outlines various stakeholders of the APVMA and their relationship with them.

Table 4: Stakeholders of the APVMA

Stakeholder	Relationship with the APVMA
Chemical industry/manufacturers and resellers	<ul style="list-style-type: none"> ▶ Submit applications to the APVMA to register agvet chemicals so they can be produced/sold in Australia.
Federal, state and territory governments	<ul style="list-style-type: none"> ▶ State and territory governments take up the responsibility of agvet chemical regulation past the point of sale. ▶ The APVMA itself sits within the portfolio of the Minister for Agriculture and Water Resources.
General community	<ul style="list-style-type: none"> ▶ The APVMA has the responsibility of ensuring that the chemicals that they register are safe for the community and have the appropriate labels to make sure that they are used correctly.
Users of agricultural and veterinary chemicals, including farmers and farm workers	<ul style="list-style-type: none"> ▶ Purchase agvet chemicals that have been registered by the APVMA. ▶ Use agvet chemicals that have been registered by the APVMA.
National and international regulators.	<ul style="list-style-type: none"> ▶ The APVMA consults and coordinates with national and international regulators to ensure that the APVMA's methods remain in accordance with best practice. ▶ Maintain collaborative links with other regulatory agencies, both national and international.

Source: (APVMA, APVMA Regulatory Science Strategy, 2015)

The APVMA has regular face to face interactions with various chemical companies and manufacturers that are applying for or have existing applications. These are the main groups that interact directly with the APVMA. End users of chemicals, such as farmers, have limited direct interaction with the APVMA.

2.6 Reforms and reviews

The APVMA must respond to external pressures, which add to the breadth and complexity of its workload. As a cost-recovered agency, this can stretch its capacity to respond effectively while delivering on its core functions.

The APVMA has participated in a series of significant reforms to agvet chemical regulation since 2010. Initially, these reforms were made in response to a 2009 Productivity Commission report and more recently have been directed at improving regulatory efficiency.

For example, in 2014-15, reforms changed the way applications are processed for assessing and registering agvet products and led to a restructuring of the registration and scientific assessment teams. The result was a more efficient evaluation process that more closely adheres to prescribed legislative timeframes. The APVMA maintains its objective for 2016-17 to achieve greater efficiency and effectiveness in the chemical registration process (APVMA, Consulting and Engaging with Stakeholders, 2016).

The government is in the process of implementing the Agricultural Competitiveness White Paper reform to streamline access to agricultural and veterinary chemicals and better manage the risks these products can pose (APVMA, Portfolio Budget Statements Department of Agriculture and Water Resources, 2016). These reforms include:

- ▶ reducing pre-market assessments of low risk applications for product registration;
- ▶ recognizing chemical assessments from comparable domestic and international regulators; and
- ▶ increasing compliance activities.

The APVMA will receive \$7.3 million worth of funding over four years to implement these reforms (APVMA, Portfolio Budget Statements Department of Agriculture and Water Resources, 2016).

The APVMA is also participating in a separate \$8 million government initiative to improve access to safe agvet chemicals, including leading a series of priority projects.

As well as the ongoing programme of regulatory reform there are a series of government reviews underway that require the APVMA's attention, either to participate or respond. These include a legislated review into work health and safety labelling of agvet chemicals due in coming months and another legislated review of participation in chemical reconsideration processes due in June 2017. A Council of Australian Governments review is also looking to streamline and harmonise national regulatory approaches, including whether to merge national chemical regulators such as the APVMA and the industrial chemicals regulator, the National Industrial Chemicals Notification and Assessment Scheme.

3. Analysis of cost and benefits

This chapter outlines the approach and assumptions used in calculating the economic costs and benefits and the specific benefits and costs identified.

3.1 Approach

The approach use to undertake the cost benefit analysis included the following steps:

- ▶ stage 1: Defining the option for assessment;
- ▶ stage 2: Identifying the financial, economic and social benefits;
- ▶ stage 3: Identifying the financial, economic and social costs;
- ▶ stage 4: Valuing the costs, benefits and risks of each option;
- ▶ stage 5: Tabulating the annual benefits and costs;
- ▶ stage 6: Calculating the costs and benefits; and
- ▶ stage 7: Scenario analysis and sensitivity testing of key variables.

For the purpose of undertaking this cost benefit analysis the following options were assessed:

- ▶ option 1: Status quo- this option represents the current prevailing situation (i.e. assumes that the APVMA will continue to operate as it currently does in Canberra); and
- ▶ option 2: Relocation of the APVMA to Armidale with the maintenance of current functions - this option examines the impact of moving the APVMA to Armidale. Implicit in this assumption is the fact that the APVMA will be able to recruit the required number of staff. It is noted that it has been suggested by stakeholders that a key risk for the APVMA is the loss of staff who will not be able to be replaced in the short to medium term. This is discussed in the assessment of risks (see Chapter 4).

The approach to cost benefit analysis has utilised a set of key economic principles, including addressing the issue of transfer payments (as outlined in Section 1.1.2.1). The analysis has identified predominately financial costs, which are in this case economic costs.

The following table outlines the general assumptions used in the cost benefit analysis. Specific assumptions used to calculate individual categories of costs and benefits are outlined in each respective section.

Table 5: Cost benefit analysis general assumptions

Assumption	Value	Rationale
Timeframe	20 years	As per guidance in <i>Cost Benefit Analysis Guidance Note published by the Department of Prime Minister and Cabinet: Office of Best Practice Regulation (February 2016)</i> .
Real discount rate	7.00%	Value sourced from <i>Cost Benefit Analysis Guidance Note published by the Department of Prime Minister and Cabinet: Office of Best Practice Regulation (February 2016)</i> .
Timing of move	Year 2	Based on a 2 year facility build.
Number of APVMA staff	189	Based on payroll data provided by the APVMA.
Annual inflation rate	2.5%	Mid-point of RBA target of 2-3%.

Source: Various

Scenario analysis has been used to explore the impact of an alternative property scenario, while sensitivity testing has been used to explore the impact of changes to the discount rate used and the number of employees that are willing to relocate to Armidale(see section 3.5).

3.2 Benefits

This section outlines the benefits of relocating the APVMA to Armidale. The benefits have been divided into impacts on the APVMA and benefits to the Armidale community to articulate which parties will benefit from the relocation.

3.2.1 Impact to the APVMA

This section details the benefits to the APVMA resulting from relocation to Armidale. It is noted that stakeholders held mixed opinions as to whether some of the benefits identified would materialise or could be assessed as benefits. This is discussed within each benefit category (where this is the case) and a conclusion drawn based on the analysis undertaken.

While a number of benefits of relocation have been discussed, the majority of potential benefits (apart from a possible reduction in property costs) are not anticipated to result in any economic advantages. As a result, these potential benefits have been assessed qualitatively and discussed below.

3.2.1.1 Co-location with the University of New England (UNE)

A benefit of the proposed move identified by stakeholders is the potential synergies that would be created by moving the APVMA to Armidale and co-locating with the UNE. It was suggested by some stakeholders that the regulatory scientific work undertaken by the APVMA would dovetail with the Agricultural Science³ research undertaken at the UNE. The potential benefits that were identified throughout the stakeholder consultation included:

- ▶ opportunities for collaboration between UNE and APVMA staff, allowing for the cross-pollination of expertise and ideas;
- ▶ increasing the availability of regulatory scientists through the delivery of a regulatory science course by UNE in conjunction with the APVMA;
- ▶ enhancing the education experience of UNE students through access to APVMA staff and operations as part of coursework; and
- ▶ providing industry critical mass located close to UNE which supports UNE's objective of being a regional university focused on supporting regional industries (including but not limited to agriculture).

However, many of the stakeholders consulted felt that the benefits that would accrue as a result of co-location would be limited. The reasons provided for this conclusion include:

- ▶ many did not see the possibility for synergy with UNE as the work of the APVMA is not directly related to that of UNE;
- ▶ the core skill set of the APVMA is in agricultural regulatory chemical assessment, which is not directly related to UNE's current skill set and area of specialisation. Accordingly, it has greater affinity with institutions that focus research on chemistry impacts and developments as opposed to agriculture; and
- ▶ the UNE currently does not provide courses that align with the APVMA's core business.

While stakeholders have differing opinions on the extent of benefits of co-location with UNE, based on consideration of all stakeholder views, market intelligence and an analysis of the APVMA's functions (see section 2.1 and 2.2), it has been concluded that while some advantages of co-location are likely to exist there is no material economic benefit associated with co-location and this aspect has therefore been excluded from the cost benefit analysis assessment. Further, for the UNE to align itself more with the core functions of the APVMA it would need to invest in relevant programs. This would have an economic cost that has not been included in this assessment.

³ <http://www.une.edu.au/research/une-research-priorities/agricultural-sciences>

3.2.1.2 Enhanced proximity to end users and other agricultural researchers

Moving the APVMA to a regional area was thought to generate a benefit by minimising the distance between the APVMA and the agricultural end users of the products that it approves. It was proposed by some stakeholders that such a move would increase the links between the APVMA and end users, improve understanding of key issues and enhance interaction, resulting in improved relationships and outcomes. The potential benefit was seen to be delivered by:

- ▶ the APVMA being able to develop a better relationship with rural Australia by being located in a rural city;
- ▶ a potential to improve the efficiency in the work undertaken by the APVMA as staff would foster stronger ties with end users and be more aware of how staff operations affect stakeholders;
- ▶ increased confidence and awareness of the industry by the APVMA, speeding up the application process;
- ▶ APVMA staff obtaining a deeper understanding of the use of chemicals and their impacts; and
- ▶ farmers being more likely to provide feedback if the APVMA is located in Armidale.

However, other stakeholders believed that there was no benefit to be realised in this case stating that:

- ▶ having the APVMA closer to end users will have a limited impact on the efficiency of its operations as the end user is irrelevant to the APVMA's core functions;
- ▶ from a regulatory perspective, end user interaction and issues relating to the use of agricultural chemicals are regulated by state and territory governments not the Commonwealth Government (APVMA);
- ▶ the APVMA already has access to producers on the southern tablelands if proximity is required; and
- ▶ end-user views and issues that are communicated to the APVMA are done so by representative bodies with offices in Canberra. As such, individual farmers do not directly interact with the APVMA.

Further it was suggested that interactions with end users should not change any regulatory decision or else the independence of the APVMA may be questioned which could reflect negatively on industry if any issues arose from a chemical approved for use over the longer term.

It has been concluded that there is no material economic benefit associated with enhanced proximity to end users and other agricultural researchers and this aspect has therefore been excluded from the cost benefit analysis assessment. This conclusion has been drawn based on the examination of the APVMA's stakeholders (see section 2.5), which demonstrates that the APVMA does not have any direct interaction with end users or other agricultural researchers and there is no identified need for such interaction. Further, the analysis undertaken indicates that increased proximity would not change the APVMA's operations nor impact on operational costs.

3.2.1.3 Changes in property costs

The relocation to Armidale will impact on the APVMA's property costs. The move results in avoided costs (i.e. those that would have been incurred if the APVMA remains in Canberra) as well as new costs (i.e. those associated with leasing or building a new building in Armidale). Where the avoided costs are greater than the new costs, a benefit to the APVMA is generated. However, for simplicity, the net property costs (avoided costs and new costs) are detailed in section 3.3.1.3.

3.2.1.4 Leverage of NBN infrastructure

Armidale is the first region in mainland Australia to be switched to the NBN network, with the final legacy disconnection occurring at the end of January 2016. Work in the city began in 2010 with migration to the NBN occurring progressively since May 2014. The final disconnection means around 12,000 residents and businesses in the town now have access to fast and reliable broadband whilst another 2,000 premises in the outlying areas also have access through the latest

fixed wireless technology. As a result of this infrastructure investment, Armidale is currently able to provide faster and more reliable internet access than other regional centres in Australia.

A number of stakeholders noted that there would be benefits that the APVMA would be able to take advantage of by leveraging the Armidale's NBN infrastructure including:

- ▶ faster communications resulting in more efficient processes;
- ▶ improved response rates to users requests; and
- ▶ reduced travel costs as a result of state of the art tele and video conference technology used to facilitate client interaction.

However, the analysis undertaken, including reviewing the APVMA's operational costs and discussions with APVMA staff suggested that the use of NBN infrastructure would not have a material impact on operational costs and as such these benefits are limited. Further, by the time of the completion of the relocation, Canberra will also have NBN. In addition, the efficiency driver for the APVMA's outputs is not faster communication processes, rather output is predicated on the availability of trained qualified scientists. It has therefore been concluded that there is no material economic benefit associated with Armidale's NBN infrastructure and this aspect has therefore been excluded from the cost benefit analysis assessment.

3.2.2 Benefits to the Armidale community

Relocating the APVMA to Armidale will have a positive economic impact to the town and surrounding community. Stakeholders were asked to provide comments as to what sort of benefits would be generated for Armidale by the proposed move. The identified benefits included:

- ▶ direct economic benefits of moving a large number of jobs to the region directly from those APVMA staff moving, as well as those of their spouses, partners and families;
- ▶ community benefits from the movement of families - partners of employees add to the skilled workforce which benefits the community and social make-up of the town;
- ▶ enhanced critical mass of skilled persons - Armidale is starting to develop a critical mass with a stable pool of technical skills which is important in supporting related jobs. The critical mass means that families looking at jobs in Armidale have more opportunity to obtain meaningful employment for both partners; and
- ▶ a more diversified economy, since UNE is currently 30% of Armidale's economy.

It is noted however that the negative impact to the ACT of moving the APVMA (putting aside the building costs) will be larger than the economic impact gains to Armidale region. The regional economic impacts of a relocation of the APVMA to Armidale are analysed in greater detail in Chapter 5.

3.3 Costs

This section outlines the economic cost of relocating the APVMA to Armidale. The economic costs have been divided into impacts on the APVMA and impacts on industry to articulate who will bear the different categories of costs.

The relocation to Armidale will result in the avoidance of some economic costs (for example rent payable for the APVMA Canberra premises and the cost to industry to travel to Canberra). However, while these costs will be avoided, additional economic costs will be incurred (for example the cost of constructing a building and the cost to industry of travelling to Armidale). As a result the economic costs avoided and additional costs have been detailed below and a net cost calculated in the following sections.

3.3.1 Impact to the APVMA

This section details the economic costs resulting from relocation to Armidale, outlining the operational, moving, property and human capital impacts associated with the relocation.

3.3.1.1 Operational impacts

Discussions with the APVMA executive and other stakeholders suggested that the relocation of the APVMA would not change the majority of the APVMA's operational costs. Additional costs would be incurred in relation to travel (for both staff and committee members), as well as a secure internet connection to its offsite data warehouse at Fairbairn ACT. The assumptions used to calculate the change to operational cost are outlined in Table 6.

Table 6: Operational assumptions

Assumption	Value	Rationale
Travel costs	\$112,800 per annum	Based on an estimate provided by the APVMA. This includes additional costs for committee members and staff travel including SES and IT staff.
Cost of secure internet connection	\$80,000 per annum	Estimate provided by APVMA IT staff. If the APVMA was relocated it would leave its servers and other IT infrastructure at the offsite data warehouse at Fairbairn ACT. These costs are the APVMA's estimate for establishing an encrypted communication link from its site of relocation back to Fairbairn. These estimates are based on costs provided to the APVMA by AGIMO.

Source: Various

Based on the above assumptions, the relocation to Armidale would result in additional operational costs of approximately \$192,800 per annum (adjusted for inflation).

3.3.1.2 Moving costs

There are a number of moving costs related to the relocation. As a facility will either be built or fitted out, or an existing building occupied (with fit out), the analysis has not considered the cost of moving furniture and equipment. ICT equipment would need to be relocated and moving costs for staff paid. An allowance for interim accommodation for three weeks has been estimated, as well as removal cost and the cost of financial advice for each employee electing to move. Table 7 outlines the assumptions used to calculate the moving costs associated with the relocation. It is assumed that all these costs are incurred in Year 2.

Table 7: Moving assumptions

Assumption	Value	Rationale
Removal of ICT equipment	\$150,000	Estimate provided by the APVMA.
Accommodation allowance	\$4,200 per relocated employee	3 weeks in a hotel in Armidale at \$200 per night.
Removal costs	\$8,000 per staff member	Estimate provided by the APVMA based on current average staff relocation costs.
Financial advice	\$550 per staff member	Estimate provided by the APVMA based on costs related to current relocations. Includes the cost of financial advice for: -placing Canberra housing on rental/sale market; -placing children in Armidale schools; and -finding a new property in Armidale.

Source: Various

Based on the results of the staff survey, 15.2% of total staff indicated their willingness or potential willingness to move to Armidale. This equates to a total of 29 FTE comprising of 24 FTE who may be willing to move and 5 FTE who are willing to move. As such, the total moving costs associated with relocation are presented in Table 8.

Table 8: Moving costs

Moving Costs	Cost	Number of Times Incurred	Total Cost
Removal of ICT equipment	\$150,000	1	\$150,000
Accommodation allowance	\$4,200 per relocated employee	29	\$120,658
Moving costs	\$8,000 per staff member	29	\$229,824
Financial advice	\$550 per staff member	29	\$15,800
Total			\$516,282

Source: EY analysis

3.3.1.3 Property costs

Real estate analysis has been undertaken to quantify the property costs associated with the construction of a new building on the UNE campus (option 2, scenario 1) relative to option 1 (continuing to rent the current facility in Symonston). This has been analysed for a 20 year period, with an assumption that building commences in October 2016 and is completed in Year 2.

It is noted that analysis has also been undertaken to explore the cost if an existing facility could be made available (see section 3.5). Research undertaken for this project indicates that such a facility is presently not available, although stakeholders suggested that the WJ McCarthy Building in Armidale may be suitable.

In completing this analysis, EY has⁴:

- ▶ utilised lease data provided by the APVMA in respect of the Symonston facility;
- ▶ reviewed an Expressions of Interest document detailing the proposed terms for a purpose built facility on the UNE campus;
- ▶ undertaken market research to ascertain the potential rental costs in the instance that the APVMA were to successfully secure a lease over the WJ McCarthy building; and
- ▶ reviewed an APVMA building concept study document detailing the proposed design and space use for the construction of a purpose built facility on the UNE campus in Armidale.

The following Tables outline the assumptions that have been adopted for the analysis of the property impacts.

Table 9: General assumptions (applicable across both options)

Assumption	Value	Rationale
Make good allowance - all sites	\$220 per square metre	EY estimate.
Opportunity cost of land in Armidale (ground rental cost)	\$45,000 per annum	As per UNE 'Expression of Interest' document (June 2015).
Net rent - Symonston	\$1,355,224 per annum (\$438 per square metre)	Indexation of current annual rent of \$1,306,240 at 3.75% to determine the rent as at October 2016. As advised by the APVMA.
Outgoings - Symonston	\$26,771 per annum	FY14/15 outgoings of \$25,731 as advised by the APVMA; indexed for 2 years to ascertain value for FY 15/16 and FY 16/17.

⁴ In addition to the costs associated with the various commercial office facilities, analysis of the residential market has also been undertaken including broad demographic analysis and general residential market data (see Appendix D).

Table 10: Option 1 - Continuing to rent the current facility in Symonston

Assumption	Value	Rationale
Total Net Lettable Area	3,095 square metres	As advised by the APVMA.
Lease term	Total term of 20 years, commencing in October 2016	Assuming the current lease is renewed for 15 years beyond the current expiry date of October 2020. Current expiry date provided by the APVMA.
Annual rental increase	3.75%	As per current lease and advised by the APVMA.
Facility refurbishment	\$800 per square metre	EY estimate on the basis that a refurbishment would be required if the APVMA remained for a period of 15 years. Assumed to be an expense in the same year as the current lease expiry (October 2020).

Source: Various

Table 11: Option 2, scenario 1 - Construction of new building on UNE campus in Armidale

Assumption	Value	Rationale
Land cost	N/A	UNE proposal to provide the land at nil consideration.
Capital cost for new facility ¹	\$18,274,438	Value as provided by UNE on 24 May 2016 and as detailed in the EOI Document (\$17,487,500 indexed at 4.00%). Costs relate to construction, archive and lifts, AV & data, furniture, fixtures and equipment, other costs and contingency. This is spread evenly across Year 1 and 2.
Total Gross Floor Area	3,400 square metres	As per UNE 'Expression of Interest' document (June 2015).
Total Net Lettable Area	2,400 square metres	As per UNE 'Expression of Interest' document (June 2015). This is based on the assumption of a headcount of 200 people at 12.5 square metres per person.
Annual on-costs	\$182,813 per annum	Value as provided by UNE on 24 May 2016. This equates to an annual on-cost of \$75 per square metre per annum and relates to electricity, water, cleaning and security costs.
Annual lifecycle cost contribution	\$365,489	Value derived as 2.00% of base build, as provided by UNE on 24 May 2016. Proposal for annual contribution by the APVMA.
Make good - new facility	N/A	Not specified in the UNE EOI.
Commonwealth Property Framework and the associated Resource Management Guides compliance	New building is compliant with the Commonwealth Property Framework and the associated Resource Management Guides	While there does not appear to be any reference in the EOI document to the Commonwealth Property Framework and the associated Resource Management Guides, UNE noted in section 8.1 of the EOI: <i>"While a preliminary concept has been developed for the purposes of this proposal and initial consideration by the Commonwealth, a design consultation period would be undertaken with the APVMA to develop a detailed functional brief based on the specified operational needs of the APVMA"</i> .

1. It is noted that UNE indicated a general unwillingness to consider funding the construction of a facility on the basis that they did not have sufficient capital available.

Source: Various

Subletting the existing premises at Symonston for remainder of lease

The analysis has assumed no sub leasing of the Symonston facility, based on the following:

- ▶ although the Canberra vacancy rate declined from 15.4% in July 2015 to 14.9% in January 2016, the Canberra commercial leasing market remains subdued, with the majority of leasing transactions largely centred within the Civic precinct;⁵
- ▶ Savills and Knight Frank suggest that the Federal and upcoming ACT elections are anticipated to result in a moderate slowing in leasing activities over the short to medium term;

⁵ Savills and Knight Frank research reports.

- ▶ Savills and Knight Frank suggest that the market net rent for commercial facilities in Symonston is in the order of \$295/sqm pa compared to the \$438/sqm currently paid by the APVMA; and
- ▶ vacancy rate for B grade, non-civic stock is reported to be in the order of 18% whilst incentives are at 31%.

If the APVMA was to successfully secure a sub tenant, it is likely that a considerable discount to the current passing rent, as well as incentives would be a requirement of the transaction - meaning the extent of recovery could be less than 50% of the remaining liability.

Compliance with Commonwealth Property Framework and the associated Resource Management Guides

Overview

The purpose of the Commonwealth Property Framework (the Framework) is to establish an evidence base for property decision making across Government based on the Commonwealth Property Management Principles.

The Framework incorporates a range of policy, guidance and cooperative activities to support non-corporate entities to achieve efficient, effective, economical and ethical property outcomes in line with the requirements of the Public Governance, Performance and Accountability (PGPA) Act.

Corporate Commonwealth Entities (corporate entities) subject to the PGPA Act are not subject to the Property Framework. However, corporate entities may be directed by the Minister for Finance to apply policies of the Property Framework and should have regard to other relevant policies such as the Financial Framework.

The APVMA is an Australian Government statutory authority and functions as a corporate Commonwealth entity, constituted by an executive manager (CEO) responsible for the management and governance of the authority⁶.

Notwithstanding that the APVMA is not bound by the Framework, a summary of the requirements is contained herein, based on the ability of the Minister for Finance to direct its application.

The property decision making process as articulated within the Framework is as follows:

1. A Property Management Plan is required to be established by non-corporate Commonwealth entities to apply to properties leased or owned by the entity. This Plan must be consistent with the Commonwealth Property Management Framework.
2. A cost benefit analysis is required to be undertaken in consultation with the Department of Finance for property transactions with a whole of life cost greater than \$30m and \$100m for Defence. Based on a cost benefit analysis, in consultation with Finance, the following decisions may include:
 - ▶ Decision to Lease - Entities are required to notify Finance of any leasing proposals for office accommodation (including shop fronts) that are expected to exceed \$2 million (whole of life cost). Refer to RMG 504 Commonwealth Property Management Framework Lease Endorsement Process for Non-corporate Commonwealth entities.
 - ▶ Design/Build/Own - The Two Stage Process assists agencies to provide the Australian Government with an appropriate level of oversight, transparency and information when deciding on whether to fund capital works construction projects. Refer to RMG 502 Two Stage Capital Works Approval Process.
 - ▶ Dispose - A property disposal is the end-stage of the asset life and will be reached through a whole-of-life property planning process, informed by cost-benefit analysis

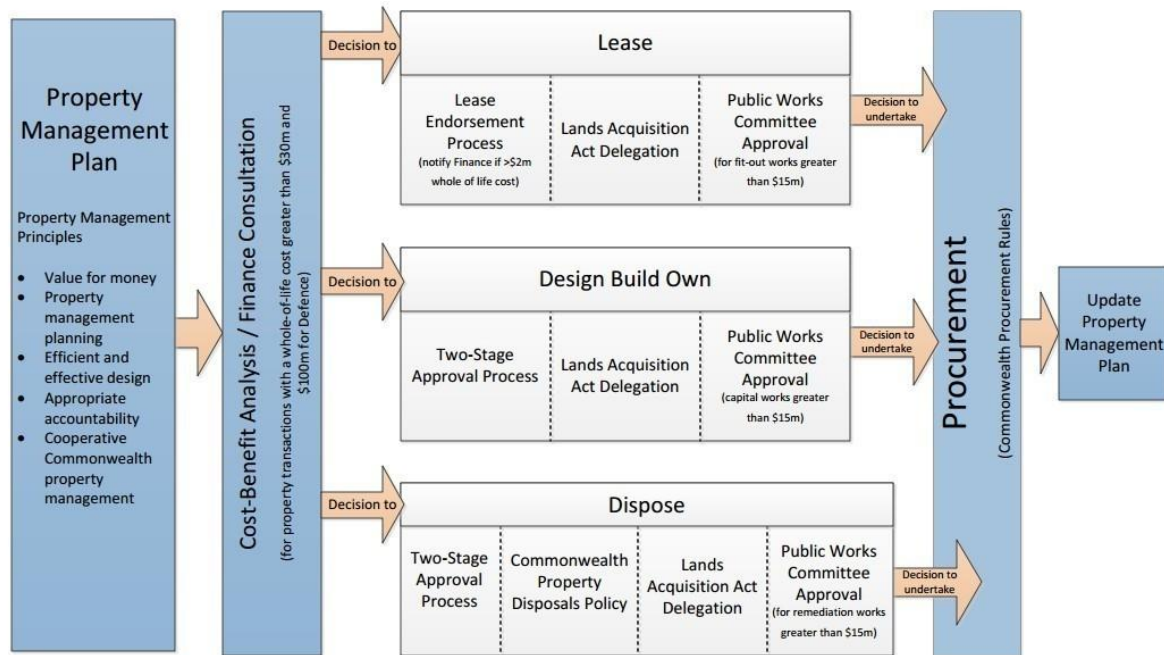
⁶ <http://apvma.gov.au/node/3191>

at key decision points, as required under the Commonwealth Property Management Framework. Refer to RMG 502 Two Stage Capital Works Approval Process and the Commonwealth Property Disposal Policy (CPDP). The CPDP guidance is to be read with reference to Part X of the *Lands Acquisition Act 1989* (which governs dealings in land vested in acquiring authorities) and the Commonwealth Property Management Framework and related policy, delegations and administrative obligations.

3. The non-corporate Commonwealth entity's decision to undertake the property transaction requires a Procurement Process consistent with the *Commonwealth Procurement Rules 2014*.
4. The final stage involves the entity's requirement to update its Property Management Plan to reflect the property transactions undertaken.

An outline of the process as articulated by the Department of Finance is illustrated in Figure 11.

Figure 11: The property decision making process



Source: Department of Finance

Resource Management Guides

There are a number of Resource Management Guides (RMGs) made available by Finance to provide guidance in respect of the Framework to non-corporate entities, summarised in Table 12.

Table 12: Overview of Resource Management Guides

Resource Management Guide	Overview
<p>RMG No. 500: Overview of the Commonwealth Property Management Framework</p>	<ul style="list-style-type: none"> ▶ The Property Framework incorporates a range of policy, guidance and cooperative activities to support non-corporate entities to achieve efficient, effective, economical and ethical property outcomes in line with the requirements of the PGPA Act. ▶ The Property Framework applies to properties within the Australian Government's property portfolio which are leased or owned. ▶ Corporate Commonwealth Entities (corporate entities) subject to the PGPA Act are not subject to the Property Framework. However, corporate entities may be directed by the Minister for Finance to apply the policies of the Property Framework and should have regard to other relevant policies such as the Financial Framework. <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Whether or not the Commonwealth entity is corporate or non-corporate. ▶ Minister for Finance may direct the APVMA to apply policies.
<p>RMG No. 501: Property Management Planning Guidance</p>	<ul style="list-style-type: none"> ▶ A property management plan is an internal planning document designed to assist the Accountable Authority (or an official authorised by the Accountable Authority) to promote the efficient, effective, economical and ethical use of Commonwealth resources in the delivery of the entity's property requirements. ▶ This guidance relates to the effective operation of an entity's workplace and infrastructure as well as the coordination with its business activities, officials and stakeholders. The range of property management responsibilities will vary across entities depending on size, diversity of operations and changing functions. However, property management will generally encompass the following: <ul style="list-style-type: none"> ▶ acquisition (including leasing); ▶ repairs and maintenance; ▶ refurbishments (fit-out and capital improvements); ▶ lease management; ▶ health and safety; ▶ energy and sustainability management; and ▶ facilities management (including security and cleaning). <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Business activities (including size and operations), officials and stakeholders. ▶ Whether or not the relocation involves a leased or owned property.
<p>RMG No. 502: Guidance for the Two Stage Capital Works Approval Process for Australian Government Construction Projects</p>	<ul style="list-style-type: none"> ▶ The Two Stage process provides a methodical approach to developing the scope and cost estimate associated with the project, reducing risk and increasing cost certainty. This approach ensures that: <ul style="list-style-type: none"> ▶ the Australian Government achieves maximum value for money in the investment being made, including

Resource Management Guide	Overview
	<p>that funds are utilised in the most effective, economical, ethical and efficient manner; and</p> <ul style="list-style-type: none"> ▶ the scope and budget approved is fully adhered to. <ul style="list-style-type: none"> ▶ Under the Two Stage process: <ul style="list-style-type: none"> ▶ the first stage involves the relevant portfolio Minister seeking the Government's in-principle agreement to a project; and ▶ the second stage involves the relevant portfolio Minister presenting a new policy proposal seeking the Government's agreement to proceed with a project, based on the project scope being developed to functional design brief standards. <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Scope and estimated cost associated with the relocation. ▶ The Government's in-principle agreement to the project.
<p>RMG No. 503: Whole-of-Life Costing (WLC) for Australian Government Property Management</p>	<ul style="list-style-type: none"> ▶ The purpose of WLC is to provide a consistent and transparent approach to government decision making. ▶ Maximum benefits of WLC's are achieved when they are undertaken as early as possible. They can be revisited and revised during stage two of the two stage capital works approval process. ▶ There are seven key steps: <ul style="list-style-type: none"> ▶ determine objectives and scope; ▶ identify feasible options; ▶ estimate whole of life costs; ▶ consider alternative funding; ▶ calculate NPV and undertake sensitivity analysis; ▶ document the decision; and ▶ review whole of life costing. ▶ There are three elements of the WLC, including: <ul style="list-style-type: none"> ▶ capital and acquisition costs; ▶ operational and maintenance costs; and ▶ disposal costs (less residual value). <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Timing is important, as it is clear that maximum benefits are achieved when the WLC process is undertaken early. ▶ Calculation of the NPV.
<p>RMG No. 504: Commonwealth Property Management Framework Lease Endorsement Process</p>	<ul style="list-style-type: none"> ▶ The Commonwealth Property Management Framework Lease Endorsement Process guidance details the requirement and process to seek the endorsement of the Minister for Finance or nominee, prior to entering into a commercial lease (including the exercise of an option under an existing lease) with a whole-of-life cost exceeding \$30 million (or \$100 million for the Department of Defence). ▶ Entities are required to notify Finance of any leasing proposals for office accommodation (including shop fronts) that are expected to exceed \$2 million (whole of life cost). <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Whether the whole-of-life cost for the lease exceeds \$30 million including rent, maintenance costs etc. ▶ Notification to Finance for any office accommodation proposals exceeding \$2 million including rent, maintenance costs etc.
<p>RMG No. 505: Funding arrangements for Commonwealth Property</p>	<ul style="list-style-type: none"> ▶ The funding arrangements for Commonwealth Property provide guidance on: <ul style="list-style-type: none"> ▶ the process for seeking alternative funding arrangements for Commonwealth property;

Resource Management Guide	Overview
	<ul style="list-style-type: none"> ▶ categorising Commonwealth owned, non-defence property as a Special Purpose Property (SPP); and ▶ the funding and management arrangements for those properties classified as SPPs. <p>Key consideration:</p> <ul style="list-style-type: none"> ▶ Alternative funding arrangements for Commonwealth properties.
RMG No. 506: Flexible and Efficient Workplace Design Guidance	<ul style="list-style-type: none"> ▶ The Flexible and Efficient Workplace Design Guidance identifies key considerations for workplace design, competing business needs, the implementation of an accommodation solution and the management of opportunities and risks associated with a project. ▶ In line with the Property Framework, individual entities are responsible for their own accommodation arrangements. However, entities may elect to consider this Guidance when evaluating options and making decisions in relation to their current and/or future work practices. <p>Key considerations:</p> <ul style="list-style-type: none"> ▶ Workplace design in relation to competing business needs. ▶ Opportunities and risks associated with the project.

Source: Department of Finance

Other considerations

- ▶ The Commonwealth Property Framework applies to property leased or owned within the Australian Government's property portfolio and as such even if the relocation falls outside the scope of the Framework, it is best practice for the principles contained within it to be applied to the movement of office accommodation.
- ▶ Co-locating with other Commonwealth entities or state and local government entities in regional areas is recommended in order to minimise costs and disturbance.
- ▶ When undertaking such relocations the Framework indicates a need to incorporate flexible accommodation design to assist in adapting to a range of requirements.
- ▶ Accommodation should provide facilities and amenities capable of allowing non-corporate entities to efficiently and effectively deliver their core business outputs regardless of location and in accordance with the Framework.
- ▶ The Government has established an occupational density target of 14 m² of usable office area per work point. All non-corporate entities entering into a new lease, developing a new building or undertaking a major fit out for office accommodation should uphold the density target.
- ▶ The Framework recommends a long lead time as a requirement for transfer, giving adequate time for mandatory processes between the cost benefit analysis and procurement stages, including:
 1. Two Stage Approval Process;
 2. Lands Acquisitions Act Delegation;
 3. Public Works Committee Approval; and
 4. Commonwealth Property Disposals Policy.
- ▶ The Framework indicates that timeframes should allow for the possibility of setbacks and reconsiderations along the way.

Key conclusions and next steps

As a corporate Commonwealth entity, the APVMA is not subject to the Property Framework. However, if deemed necessary by the Minister for Finance, policies of the Framework may need to be applied to the proposed relocation.

In light of above, it has been concluded that applying certain components of the Framework may be beneficial to the APVMA. The next steps for immediate consideration by the APVMA include:

- ▶ the development of a Property Management Plan; and
- ▶ consultation with the Department of Finance to ascertain which components of the Framework are to be adhered to.

Net property costs

Based on the assumptions detailed above, Table 13 outlines the net property costs. The table identifies the cost associated with continuing to rent the current facility in Symonston (option 1) and the construction of a new building on the UNE campus (option 2, scenario 1), to determine the net property costs.

Under option 1, the Symonston facility is leased for the next 20 years with a refurbishment in Year 5 following the expiry of the current lease (October 2020). It has been assumed that the lease is then renewed for 15 years with a make good allowance upon termination.

The table also outlines the cost associated with the construction of the new building on the UNE campus (option 2, scenario 1). Under this option it has been assumed that the APVMA will have to continue to pay rent and outgoings on the Symonston facility until the end of the current lease (it has been assumed that there is no ability to sublease this building as discussed above). The option also includes the cost of the construction of a new building over a two year period. Once constructed, the APVMA will be required to pay annual on costs (electricity, water, cleaning and security costs) and an annual lifecycle cost contribution.

The costs associated with the Symonston facility form the baseline, which enables a comparison with the costs of the construction of a new building. This has been used to ascertain the net property costs which form part of the assessment of costs and benefits of relocation (see Section 3.4).

Table 13: Scenario 1 (construction of a new building on UNE campus) net property costs (\$'000)

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Option 1																				
Net rent	1,355	1,406	1,459	1,513	1,570	1,629	1,690	1,754	1,819	1,888	1,958	2,032	2,108	2,187	2,269	2,354	2,442	2,534	2,629	2,728
Outgoings	27	27	28	29	30	30	31	32	33	33	34	35	36	37	38	39	40	41	42	43
Facility refurbishment					2,733															
Make good																				1,116
Total avoided cost	1,382	1,433	1,487	1,542	4,333	1,659	1,721	1,785	1,852	1,921	1,993	2,067	2,144	2,224	2,307	2,393	2,482	2,575	2,671	3,886
Option 2, scenario 1																				
<u>Current facility</u>																				
Net rent	1,355	1,406	1,459	1,513																
Outgoings	27	27	28	29																
Make good				752																
<u>New facility - UNE</u>																				
Capital costs - construction	9,137	9,366																		
Annual on costs		185	189	194	199	204	209	214	219	225	230	236	242	248	254	261	267	274	281	288
Annual lifecycle contribution		375	384	394	403	414	424	434	445	456	468	480	492	504	516	529	543	556	570	584
Total cost	10,519	11,358	2,060	2,881	602	617	633	648	665	681	698	716	734	752	771	790	810	830	851	872
Net cost	9,137	9,925	573	1,339	-3,731	-1,042	-1,089	-1,137	-1,187	-1,240	-1,294	-1,351	-1,410	-1,472	-1,536	-1,603	-1,672	-1,745	-1,820	-3,014

Source: EY analysis

3.3.1.4 Human capital costs

In undertaking the consultation for this engagement, APVMA staff were surveyed to gauge their sentiment regarding relocation to Armidale. The staff survey provided data on the willingness of staff at each level to relocate. This data has been used to calculate the number of staff willing to move and the number of staff that would leave the organization in the event of relocation. Based on these results, analysis has been undertaken to determine the associated costs of either relocating staff willing to move, offering redundancies to those who elect to stay in Canberra and the associated training, recruiting and oversight costs related to recruiting replacements in Armidale.

The assumptions related to the human capital costs are detailed in Table 14.

Table 14: Human capital assumptions

Assumption	Value	Rationale
Percentage of staff willing to relocate to Armidale	15.2% of total staff. This includes 12.9% of staff who said they may be willing to move and 2.3% of staff who said they would move. The percentage of staff willing to relocate at each position level has been used to calculate the human capital costs to provide more granulated data but is not reported here for privacy reasons	Based on the survey of APVMA staff and includes all respondents who were willing to relocate and those that may be willing to relocate.
Number of redundancies required	84.8% of total staff	Based on the survey of APVMA staff.
Recruitment costs	\$25,000 for levels SES \$20,000 for levels EL1 and EL2 \$15,000 for levels APS 5&6 \$10,000 for all other levels	Market based estimate.
Redundancy costs	4 weeks minimum + 2 weeks for each year of service on top of initial 4 years	As outlined in the APVMA Enterprise Agreement.
Additional training requirements		
On boarding - New employees	1 week of employee's time (3 formal days and 2 informal)	EY estimate based on industry consultation and discussions with APVMA staff.
On boarding - Trainers	3 days of an internal APVMA instructor	EY estimate based on industry consultation and discussions with APVMA staff.
On-the-job - New employees	3 months full time working on simple cases. Then 30% of their time over the first year, 20% over the second year, 10% over the third year and 5% over the fourth year	EY estimate based on industry consultation and discussions with APVMA staff. Includes ongoing peer support, risk training and regulatory decision making training.
On-the-job - Supervisors	2.5 days/week over 3 months Then 30% of their time over the first year, 20% over the second year, 10% over the third year and 5% over the fourth year	EY estimate based on industry consultation and discussions with APVMA staff.
Mentoring - New employees	1 hour per week over 5 years	EY estimate based on industry consultation and discussions with APVMA staff.
Mentoring - Mentors	1 hour per week over 5 years	EY estimate based on industry consultation and discussions with APVMA staff.

Source: Various

Redundancy costs

The redundancy costs associated with the relocation are presented in Table 15. These costs are assumed to be one off costs and occur in Year 2.

Table 15: Redundancy costs

Staff Level*	Staff Requiring Redundancies	Average Tenure (Years)	Average Salary	Redundancy Cost
SES and EL2	25	6.0	SES - \$223,288 EL2 - \$130,222	\$595,681
EL1	45	4.5	\$107,806	\$466,205
APS6	44	3.3	\$89,057	\$300,239
APS5	21	7.6	\$79,365	\$353,096
Other Levels	23	2.4	\$64,903	\$114,828
Total				\$1,830,049

*Note SES and EL2 staff have been aggregated in this table for confidentiality reasons.

Source: Various, APVMA Staff Survey and EY Analysis

Recruiting costs

There are significant costs in the year of relocation (Year 2 of the analysis) associated with recruiting costs to replace those employees who opt out of relocating to Armidale. Utilising the results of the staff survey and industry estimates in regards to the costs of recruiting, Table 16 details these costs. It is assumed that all staff positions will be filled in Year 2.

Table 16: Recruiting costs

Staff Level	Number of staff to be recruited	Average Recruitment Cost	Recruitment Cost
SES and EL2	25	SES - \$25,000 EL2 - \$20,000	\$525,143
EL1	45	\$20,000	\$891,852
APS6	44	\$15,000	\$657,404
APS5	21	\$15,000	\$312,632
Other Levels	23	\$10,000	\$230,000
Total			\$2,617,030

Source: Various, APVMA Staff Survey and EY Analysis

Training costs

Another significant cost will be the cost of training staff to appropriately undertake their duties. The regulatory scientific work that a large proportion of APVMA staff undertake is highly specialised and will take some time to develop the required skills for newly recruited employees. This on the job training will result in a significant opportunity cost which is measured as a loss of productivity as staff will be learning as opposed to delivering on their expected outcomes. Table 17 details these costs.

Table 17: Training costs

Training Required	Year 2	Year 3	Year 4	Year 5
Onboarding - New Employees	\$296,441			
Onboarding - Trainers	\$177,864			
On the Job - New Employees	\$2,146,142	\$926,230	\$474,692	\$243,280
On the - Job Supervisors	\$1,581,368	\$926,230	\$474,692	\$243,280
Mentoring - New Employees	\$120,485	\$39,519	\$40,507	\$41,520
Mentoring - Mentors	\$120,485	\$39,519	\$40,507	\$41,520
Total	\$4,442,785	\$1,931,498	\$1,030,398	\$569,600

Source: Various, APVMA Staff Survey and EY Analysis

Oversight costs

Given the change in staff and the effort required to manage redundancy, recruitment and training, the APVMA will need to dedicate a resource to oversee staff. It has been assumed that this would require one EL2 level staff member full time for 6 months, then 50% for the next 6 months and then 25% for the next 3 years. Table 18 details these costs.

Table 18: Oversight costs

	Year 2	Year 3	Year 4	Year 5
Oversight costs	\$97,666	\$33,369	\$34,204	\$35,059

Source: EY Analysis

3.3.2 Impact to industry

This section details the cost impact to industry (i.e. the chemical companies and industry bodies that seek approval for the products they develop) resulting from the relocation to Armidale. Extensive stakeholder consultation was undertaken throughout this engagement to capture industry's thoughts around what types of costs they felt would be generated by the relocation. Importantly, many industry stakeholders were concerned with the possibility of delays to the approval process and increased costs passed onto industry. These costs, however, do not fall within the scope of the cost benefit analysis, rather have been considered as part of the risk analysis as detailed Chapter 4.

3.3.2.1 Increased travel costs

As part of the stakeholder consultation, industry suggested that relocation of the APVMA to Armidale would increase the costs associated with visiting the APVMA. Stakeholders discussed the importance of face to face meetings with key APVMA staff to their operations. These meetings will still need to occur if the APVMA is relocated, though stakeholders indicated that the costs of the meetings would be greater relative to the status quo. This was due to the following factors:

- ▶ it is more expensive travel to a regional centre than it is to a capital city;
- ▶ the number of scheduled flights to Armidale mean travel is much less flexible and convenient. As a result extra accommodation might be required increasing the direct and opportunity cost of attending meetings in person; and

Canberra also houses other organisations that industry participants have ongoing meetings with and are able to schedule these alongside meetings with the APVMA. Should the move occur, separate trips to Canberra and Armidale may need to be scheduled where before one trip to Canberra would suffice.

Table 19 outlines the assumptions used to calculate the costs associated with the factors outlined above. It is noted that the analysis has taken a conservative position and has only included the changes in the cost of airfares. It does not include accommodation costs (if additional accommodation is required) nor the costs associated with additional time of industry personnel to travel to Armidale.

Table 19: Travel cost assumptions

Assumption	Value	Rationale
6 monthly visitor numbers	- Sydney: 70 - Melbourne: 40 - ACT based: 115 - Other: 56	Based on analysis of the APVMA visitor numbers provided by the APVMA.
12 monthly visitor numbers	Double the number of 6 monthly visitors	Based on discussion with the APVMA which suggested the pattern of visitors is consistent throughout the year.
Impact on visitors from other location	\$0	EY assumption. As details are unknown of the location of 'other' visitors, it has been conservatively estimated that there will be no impact to these visitors as a result of relocation.
Accommodation costs	N/A	The analysis has not considered additional accommodation costs as there are multiple flights into and out of Armidale and therefore visitors may not be required to overnight in Armidale. Further, some stakeholders suggested that when travelling to Canberra they incur accommodation costs which would be interchanged with accommodation costs in Armidale.

Source: Various

The quantum of the costs involved varies based on the location of the stakeholder. The analysis has examined the difference in airfares (see Table 20) to calculate the increased travel cost

Table 20: Changes to airfare cost

Location	Destination	Departure cost	Return cost	Total cost
Current travel costs				
Sydney	Canberra	279	150	429
Melbourne	Canberra	150	200	350
Canberra	Canberra	0	0	0
Travel costs after relocation				
Sydney	Armidale	190	150	340
Melbourne	Armidale	300	350	650
Canberra	Armidale	330	330	660

Source: EY analysis based on Qantas airfares as at 3 June 2016.

As can be seen in Table 21, based on the difference in airfares and visitor numbers, the relocation to Armidale would result in additional travel costs of approximately \$163,340 per annum (adjusted for inflation).

Table 21: Changes in travel costs

Location	Difference in airfare	Number of visitors cost	Change in cost
Sydney	-\$89	140	-\$12,460
Melbourne	\$300	80	\$24,000
Canberra	\$660	230	\$151,800
Total			\$163,340

Source: EY analysis based on Qantas airfares as at 3 June 2016.

3.3.2.1 Opportunity cost of land

Another impact to be considered is the opportunity cost of the land upon which the new facility at UNE is to be built (this is only applicable to option 2, scenario 1). If the land was not used by the APVMA it could be used for other purposes, generating an opportunity cost.

The assumption used to calculate the opportunity cost is outlined in Table 22. Based on the above assumptions, the relocation to Armidale would result in an opportunity cost of approximately \$45,000 per annum (adjusted for inflation).

Table 22: Opportunity cost of land assumptions

Assumption	Value	Rationale
Opportunity cost of land in Armidale	\$45,000 rent per annum	As per UNE 'Expression of Interest' document (June 2015). This is based on an in kind contribution current market rental value of unimproved land at \$10 per square metre, for 4,500 square metres. The current market rental value is exclusive of GST.

Source: UNE 'Expression of Interest' document (June 2015'.

3.4 Net present value of costs and benefits

While a number of potential benefits of relocation were identified, the majority of potential benefits (apart from a possible reduction in property costs) are not anticipated to result in material economic advantages for society. The following potential benefits to the APVMA as a result of relocation were identified by some stakeholders as part of this work:

- ▶ co-location with UNE;
- ▶ enhanced proximity to end users and other agricultural researchers;
- ▶ reduction in property costs (as discussed further below); and
- ▶ leverage of NBN infrastructure.

In addition, relocation was seen to provide the following benefits to the Armidale community:

- ▶ job creation;
- ▶ increased availability of skilled employees (due to partners of employees moving to Armidale; and
- ▶ a more diversified economy.

These benefits are discussed in the economic impact assessment in Chapter 5.

A variety of costs have been identified resulting from the relocation of the APVMA to Armidale. These include costs for the APVMA and industry. Table 23 outlines the profile (timing and magnitude) of the various costs identified in the previous sections. As can be seen the NPV of the economic costs of relocation over 20 years is estimated to be \$23.19 million.

There are high costs in Years 1-5, driven by the cost of constructing a new building, moving costs and costs associated with recruitment, training, redundancy and oversight. However, from Year 5 to Year 20, cost savings arise driven by the net savings in property costs. These arise from the difference in the cost of renting the current facility in Symonston and the construction of a new facility at UNE (see Section 3.3.1.3).

This \$23.19 million represents the economic cost over 20 years to society in present day dollars using a project discount rate of 7% and thus should not be construed as the cash or financial cost of the project. Given that it is an economic analysis the cost benefit analysis includes the cost and benefits to all the stakeholders impacted by the project not just the government.

The estimated economic cost of \$23.19 million excludes any potential cost to industry arising from the risks to the agricultural sector, the chemical industry or Australia's trading reputation. Whilst these risks are real (refer to Chapter 4), their impacts and consequences are based on a probability of an event occurring and as such in adopting the principle of conservatism they have been excluded. Other potential costs such as the impact on cost recovery have also been excluded, again because they are based around a probability of an event occurring which, in this early analysis, cannot be quantified.

To effectively undertake the move of the APVMA and adopt relevant risk mitigation strategies, the cash cost to the government could be significantly higher than the estimated economic cost of \$23.19 million.

Table 23: Summary of net costs including property scenario 1: Construction of a new building on the UNE campus (\$ '000)

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Impact to the APVMA																				
Operational		198	203	208	213	218	224	229	235	241	247	253	259	266	272	279	286	293	301	308
Moving		516																		
Property	9,137	9,925	573	1,339	-3,731	-1,042	-1,089	-1,137	-1,187	-1,240	-1,294	-1,351	-1,410	-1,472	-1,536	-1,603	-1,672	-1,745	-1,820	-3,014
Redundancy		1,830																		
Training		4,443	1,931	1,030	570															
Recruitment		2,617																		
Oversight		98	33	34	35															
Total cost to the APVMA	9,137	19,626	2,741	2,611	2,913	-824	-865	-908	-952	-999	1,048	1,098	1,151	1,206	1,264	1,324	1,386	1,451	1,519	-2,706
Impact to industry																				
Travel		167	172	176	180	185	189	194	199	204	209	214	220	225	231	237	242	249	255	261
Opportunity cost of land		46	47	48	50	51	52	53	55	56	58	59	61	62	64	65	67	68	70	72
Total cost to industry	0	214	219	224	230	236	242	248	254	260	267	273	280	287	294	302	309	317	325	333
Total cost	9,137	19,840	2,959	2,836	-	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	-	-	-	-	-2,373
Discounted cost	8,344	16,547	2,254	1,972	-	-341	-330	-319	-309	-298	-288	-278	-268	-258	-248	1,022	1,077	1,134	1,194	-386
NPV	23,186				1,704															

Source: EY analysis

3.5 Sensitivity testing and scenario analysis

This section outlines the effect of changing key variables (sensitivity testing) and changing the way in which the APVMA relocates to Armidale (scenario analysis) on the NPV of the costs of relocation.

Scenario analysis has been used to explore the impact that a different mechanism for housing the APVMA (i.e. renting an existing building (scenario 2), compared to constructing a new building (scenario 1)) would have on the analysis. Scenario 2 has been tested given the magnitude of property costs and the impact these have on the overall NPV.

When conducting a cost benefit analysis there is often uncertainty surrounding the values used to estimate potential effects (both future benefits and costs) or these values are subject to some risks. In such cases, it is important to determine the robustness of the parameters used to estimate potential impacts through sensitivity testing. Sensitivity testing has therefore been used as it provides information about how changes in different variables affect the overall costs and benefits of the proposal. It shows how sensitive the predicted NPV is to different values of uncertain variables and to changes in assumptions.

3.5.1 Scenario analysis⁷

Scenario analysis has been undertaken to quantify the property costs associated with securing a lease over the WJ McCarthy Building in Armidale⁸. This has been analysed over a 20 year period, commencing in October 2016. In completing this analysis, EY has:

- ▶ utilised lease data provided by the APVMA in respect of the Symonston facility; and
- ▶ undertaken market research to ascertain the potential rental costs in the instance that the APVMA were to successfully secure a lease over the WJ McCarthy building.

The following assumptions have been adopted for the scenario analysis.

Table 24: General assumptions (applicable across both options)

Assumption	Value	Rationale
Discount rate - all sites	7.00%	As per the 'Office of Best Practice Regulation Cost - Benefit Analysis Guidance Note' (February 2016).
Annual indexation of occupation costs - all sites	2.00%	As per advice from UNE.
Make good allowance - all sites	\$220 per square metre	EY estimate.
Net rent - Symonston	\$1,355,224 per annum (\$438 per square metre)	Indexation of current annual rent of \$1,306,240 at 3.75% to determine the rent as at October 2016. As advised by the APVMA.
Outgoings - Symonston	\$26,771 per annum	FY14/15 outgoings of \$25,731 as advised by the APVMA; indexed for 2 years to ascertain value for FY 15/16 and FY 16/17.

⁷ It is noted that the primary analysis undertaken has assumed that the construction of a new building to house the APVMA is required, based on a lack of availability of an existing facility. In principle (from an economic theory perspective) the lease or buy choice should have no impact on the economic analysis as economically the rental cost will match the consumption of economic resources under the build option (if the assets deliver the same service) - i.e. the rental cost over the building's life should match the cost of constructing the building. However, given the uncertainty surrounding the use of an existing facility (particularly in relation to the level of services able to be delivered), the financial costs associated with the WJ McCarthy building have been used as a proxy for economic costs in the scenario analysis, leading to differences in the estimated NPV of the two scenarios.

⁸ According to RP Data, the building is owned by Public Works Department and Department of Admin Services. During the stakeholder engagement process, EY was informed that the building could be made available, providing a basis on which to compare the costs associated with occupying a purpose built facility relative to an existing building. EY has been unable to confirm whether this facility is a genuine leasing option. Further due diligence is recommended.

Table 25: Option 1 - Continuing to rent the current facility in Symonston

Assumption	Value	Rationale
Total Net Lettable Area	3,095 square metres	As advised by the APVMA.
Lease term	Total term of 20 years, commencing in October 2016.	Assuming the current lease is renewed for 15 years beyond the current expiry date of October 2020. Current expiry date provided by the APVMA.
Annual rental increase	3.75%	As per current lease and advised by the APVMA.
Facility refurbishment	\$800 per square metre	EY estimate on the basis that a refurbishment would be required if APMVA remained for a period of 15 years. Assumed to be an expense in the same year as the current lease expiry (October 2020).

Source: Various

Table 26: Option 2, scenario 2 - Securing a lease over the WJ McCarthy Building in Armidale

Assumption	Value	Rationale
Total net lettable area	2,157 square metres	According to RP Data.
Commencing net rent	\$281 per square metre pa	Values based on market research of smaller commercial market facilities in Armidale and Tamworth.
Facility refurbishment	\$800 per square metre	EY estimate. Facility refurbishment cost includes furniture, fixtures and equipment.
Annual rental increase	3.00% per annum	Value based on comparable market research of commercial market facilities in Armidale and Tamworth.
Outgoings	\$40 per square metre per annum	EY estimate.

Source: Various

Based on these assumptions, Table 27 outlines the net property costs under Scenario 2. The table outlines the cost associated with continuing to rent the current facility in Symonston (option 1) and securing a lease over the WJ McCarthy Building in Armidale (option 2, scenario 2), to determine the net property costs.

Under option 1, the Symonston facility is leased for the next 20 years with a refurbishment in Year 5 following the expiry of the current lease (October 2020). It has been assumed that the lease is then renewed for 15 years with a make good allowance upon termination.

The table also outlines the cost associated with securing a lease over the WJ McCarthy Building in Armidale (option 2, scenario 2). Under this option it has been assumed that the APVMA will have to continue to pay rent and outgoings on the Symonston facility until the end of the current lease (i.e. there is no ability to sublease this building). The scenario also includes the cost of renting the WJ McCarthy building - the payment of annual rent and outgoings, as well as an initial refurbishment and a make good allowance at the end of the lease period (in Year 20).

The costs associated with the Symonston facility form the baseline, which enables a comparison with securing a lease over the WJ McCarthy Building. This has been used to ascertain the net property costs. As can be seen, while initially costs are greater due to the need to continue to pay for the current facility as well as the building in Armidale, from Year 5 onwards there are significant property cost savings to the APVMA associated with this scenario. These arise from the lower rental cost associated with the WJ McCarthy Building (when compared to the Symonston facility).

These lower net property costs have a significant impact on the NPV of the economic costs of relocation. Based on the net property costs associated with securing a lease over the WJ McCarthy

Building and with all other variables consistent with the central base case, the economic cost of relocation over 20 years is estimated to have an NPV of \$11.54 million.

Scenario 2 therefore has a significantly lower economic cost when compared to the estimated \$23.19 million economic cost of relocation over 20 years associated with the base case (which is based on the construction of a new office on the UNE Campus). This demonstrates that the results of the analysis are quite sensitive to the mechanism used to house the APVMA (i.e. renting an existing building, compared to constructing a new building).

Alternative property options

In addition to the relocation options detailed above, the net property costs may be reduced if the APVMA was to negotiate a conventional 'pre commitment' with UNE, whereby:

- ▶ UNE acts as developer and owner of the asset by funding the construction of the facility, to the APVMA's specification; and
- ▶ the APVMA pays an annual rent for a period of say 20 years, which reflects a reasonable return to UNE and general market parameters.

UNE indicated a general unwillingness to consider such a structure on the basis that they did not have sufficient capital available to fund the construction of the facility. However it is recommended that negotiations are undertaken with UNE to further explore the possibility of implementing alternative arrangements.

Table 27: Scenario 2 (securing a lease over the WJ McCarthy building in Armidale) net property costs (\$ '000)

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Option 1																				
Net rent	1,355	1,406	1,459	1,513	1,570	1,629	1,690	1,754	1,819	1,888	1,958	2,032	2,108	2,187	2,269	2,354	2,442	2,534	2,629	2,728
Outgoings	27	27	28	29	30	30	31	32	33	33	34	35	36	37	38	39	40	41	42	43
Facility refurbishment					2,733															
Make good																				1,116
Total avoided cost	1,382	1,433	1,487	1,542	4,333	1,659	1,721	1,785	1,852	1,921	1,993	2,067	2,144	2,224	2,307	2,393	2,482	2,575	2,671	3,886
Option 2, Scenario 2																				
Current facility																				
Net rent	1,355	1,406	1,459	1,513																
Outgoings	27	27	28	29																
Make good				752																
New facility - WJ McCarthy																				
Net rent	606	624	643	662	682	703	724	745	768	791	815	839	864	890	917	944	973	1,002	1,032	1,063
Outgoings	86	88	91	93	95	98	100	103	105	108	110	113	116	119	122	125	128	131	135	138
Facility refurbishment	2,828																			
Make good																				524
Total cost	4,902	2,146	2,221	3,049	777	800	824	848	873	899	925	952	980	1,009	1,039	1,069	1,101	1,133	1,166	1,725
Net cost	3,520	713	734	1,507	-3,555	-859	-897	-937	-979	-1,022	-1,068	-1,115	-1,164	-1,215	-1,268	-1,324	-1,381	-1,442	-1,504	-2,162

Source: EY analysis

3.5.2 Sensitivity testing

Partial sensitivity testing has been undertaken across the two main variables for the cost benefit analysis, the discount rate and the number of employees that are willing to relocate to Armidale. The sensitivity testing alters both these assumptions independently to identify the impact that changes to these variables have on the results of the cost benefit analysis.

3.5.2.1 Sensitivity to staff relocation

The number of employees willing to relocate to Armidale is a key driver of cost as it impacts on the costs associated with redundancies, training, oversight and recruitment. Whilst the numbers utilised in the base case for staff electing to move are based on the staff survey undertaken, variability in this figure is tested to determine the impact that greater numbers of staff accepting to move would have on the overall net cost benefit analysis.

The sensitivity testing in relation to the number of staff willing to relocate has explored the impact that an additional 10 and 20 per cent of staff relocating (at each staff level) has on the results. As can be seen in Table 28, the greater the proportion of staff willing to relocate the lower the total economic cost of relocation. If an additional 10 per cent of staff (compared to the results of the staff survey) were willing to relocate, the total economic cost is estimated to be \$22.19 million, while an additional 20 per cent of staff (compared to the results of the staff survey) is estimated to reduce the total economic cost to \$21.19 million.

Table 28: Sensitivity to staff relocation

Description	NPV
Base Case - staff relocation rate based on survey	\$23.19 million
Staff relocation rate based on survey and inflated by 10%	\$22.19 million
Staff relocation rate based on survey and inflated by 20%	\$21.19 million

Source: EY analysis

Table 29 outlines the yearly costs of relocation with the three differing relocation assumptions. As identified above, changing the percentage of staff willing to relocate changes the costs in Years 2-5. This is because these are the years that redundancy, training, oversight and recruitment costs are incurred. In both instances, a higher proportion of staff willing to relocate reduces these costs and hence reduces the total economic cost.

Table 29: Summary of total costs with sensitivity to staff relocation (\$ '000)

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Staff relocation based on survey (base case)																				
Total cost	9,137	19,840	2,959	2,836	2,683	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	1,022	1,077	1,134	1,194	-2,373
Discounted cost	8,344	16,547	2,254	1,972	1,704	-341	-330	-319	-309	-298	-288	-278	-268	-258	-248	-239	-230	-221	-213	-386
NPV	23,186																			
Staff relocation rate based on survey and inflated by 10%																				
Total cost	9,137	18,951	2,766	2,733	2,740	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	1,022	1,077	1,134	1,194	-2,373
Discounted cost	8,344	15,805	2,107	1,901	1,741	-341	-330	-319	-309	-298	-288	-278	-268	-258	-248	-239	-230	-221	-213	-386
NPV	22,189																			
Staff relocation rate based on survey and inflated by 20%																				
Total cost	9,137	18,062	2,573	2,630	2,797	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	1,022	1,077	1,134	1,194	-2,373
Discounted cost	8,344	15,064	1,960	1,829	1,777	-341	-330	-319	-309	-298	-288	-278	-268	-258	-248	-239	-230	-221	-213	-386
NPV	21,193																			

Source: EY analysis

3.5.2.2 Sensitivity to discount rate

The Office of Best Practice Regulation recommends the use of a real discount rate of 7 per cent. Hence this has been used for the base case estimate.

In addition, the Office of Best Practice Regulation recommends the use of real discount rates of 3 and 10 percent to test the sensitivity of costs and benefits to changes in interest rates.

Since a cost benefit analysis calculates the NPV of all costs and benefits, changes to the discount rate alter the current value of future costs and benefits. As can be seen in Table 30, a lower discount rate (3 per cent) reduces the NPV of the costs of relocation. In addition, a higher discount rate also reduces the NPV of the costs of relocation. The reasons for this are explained in further detail below through a deeper exploration of yearly costs.

Table 30: Sensitivity to discount rates

Description	NPV
Base case - real discount rate 7%	\$23.19 million
Real discount rate 3%	\$22.38 million
Real discount rate 10%	\$23.13 million

Source: EY analysis

Table 31 outlines the yearly economic costs of relocation with the three differing discount rates. Comparing the use of a lower discount rate of 3 per cent to the central case (discount rate of 7 per cent), the NPV of costs has decreased to \$22.38 million. This modest impact occurs given the scale and profile of the cost savings. As can be seen, savings occur from Year 5 to Year 20. Hence a lower discount rate increases the real value of these savings and hence decreases the total cost.

The use of a higher discount rate also reduces costs, albeit marginally (to \$23.13 million). While this may seem counter intuitive, it occurs because of the profile of costs and cost savings. Significant economic costs are incurred in the first four years (due to the construction of a new building and the costs associated with redundancies, training and recruitment). A higher discount rate therefore reduces these costs, while also reducing the benefits. However, the higher discount rate reduces the costs in the earlier years to a greater extent than the later year benefits, hence reducing the total cost.

Table 31: Summary of total costs with sensitivity to discount rates (\$ '000)

Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Discount rate of 3%																				
Total cost	9,137	19,840	2,959	2,836	-2,683	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	-1,022	-1,077	-1,134	-1,194	-2,373
Discounted cost	8,661	17,825	2,520	2,289	-2,053	-427	-429	-430	-431	-433	-433	-434	-434	-434	-434	-434	-433	-433	-432	-813
NPV	22,378																			
Discount rate of 7% (base case)																				
Total cost	9,137	19,840	2,959	2,836	-2,683	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	-1,022	-1,077	-1,134	-1,194	-2,373
Discounted cost	8,344	16,547	2,254	1,972	-1,704	-341	-330	-319	-309	-298	-288	-278	-268	-258	-248	-239	-230	-221	-213	-386
NPV	23,186																			
Discount rate of 10%																				
Total cost	9,137	19,840	2,959	2,836	-2,683	-588	-623	-660	-699	-739	-781	-825	-871	-919	-969	-1,022	-1,077	-1,134	-1,194	-2,373
Discounted cost	8,122	15,676	2,078	1,770	-1,489	-290	-273	-257	-242	-228	-214	-201	-188	-177	-166	-155	-145	-136	-127	-225
NPV	23,133																			

Source: EY analysis

4. Assessment of risks

This section explores the risks associated with the relocation of the APVMA to Armidale. In identifying, assessing and evaluating key risks, the analysis focused on:

- ▶ minimising any loss of technical expertise within the APVMA and identifying timeframes and strategies for replacing staff and returning staff levels to full capacity;
- ▶ maintaining continuity of the APVMA's services during relocation; and
- ▶ supporting the APVMA's capacity to deliver the reform agenda expected by Government.

4.1 Approach

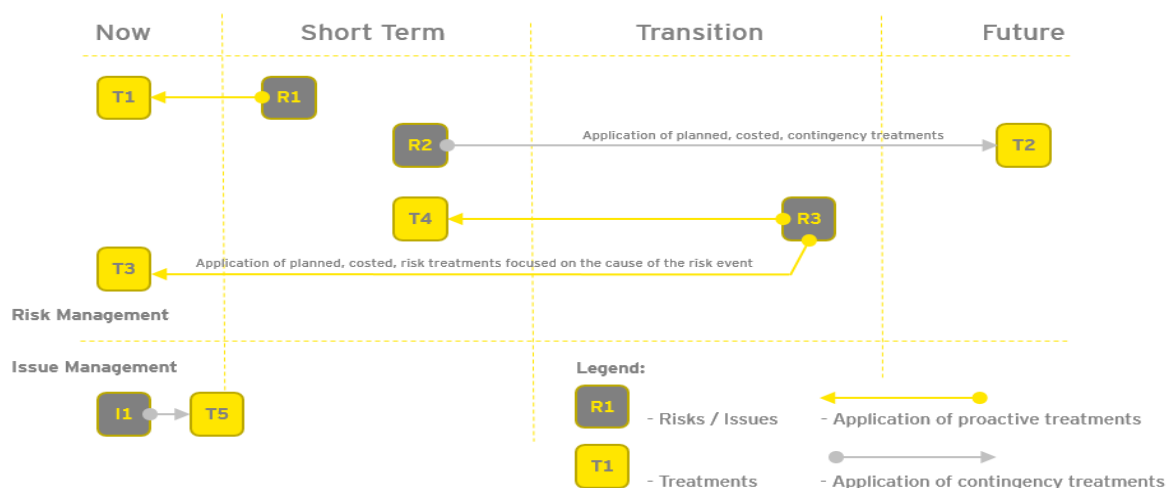
Our approach to examining risks and treatment strategies included the following activities:

- ▶ the review of relevant, available information, including:
 - ▶ APVMA corporate documentation - such as the APVMA corporate and operational plans and other strategic documents;
 - ▶ staff survey results - assessment of the results of the APVMA staff survey; and
 - ▶ input and responses from key stakeholders - a list of stakeholders consulted is outlined in Appendix B;
- ▶ conducting a risk discussion - a risk discussion was held with the APVMA executive to gain a deeper understanding of the key risks and issues, potential consequences and treatments and mitigations; and
- ▶ identification, assessment and evaluation of assumptions risks, issues and treatment options associated with the relocation.

Effective risk management often requires risk treatments to be applied much earlier than the point in time when a risk event is anticipated to materialise (Figure 12). To manage the risks in relocating the APVMA to Armidale, decisions need to be made and actions initiated in the short term to maximise the likelihood of the success of the relocation and the continued ability of the organisation to deliver on its mission and objectives.

Should the APVMA actively choose to accept a risk, a contingency plan should be identified, recorded in the project work breakdown structure and costed. This ensures adequate and appropriate transparency of the risk, an understanding of the potential impact of risk acceptance and a plan to respond should the risk eventuate.

Figure 12: An example of the temporal view of risk and issue management - risk events which may eventuate in the future, or during the transition period, for which risk treatments and mitigations must be applied now or in the short term.



Source: EY

4.2 Key risks and issues identified

EY has identified the following key risks associated with the relocation of the APVMA to Armidale.

- Risk 1. The APVMA is unable to effectively relocate or recruit and replace key APVMA executive, management and technical assessment staff within the first two years.
- Risk 2. During transition and in the short term, the APVMA is unable to sustain its rate of effort for registration of new agricultural and veterinary chemical products.
- Risk 3. The APVMA is unable to maintain and grow its capability in the medium term.
- Risk 4. The APVMA has reduced access to stakeholders.

4.3 Risk assessment and evaluation

The four risks have been evaluated as follows using a simple evaluation matrix against potential likelihood and consequence, as illustrated on the matrix below and detailed in Table 32.

		Medium	High	High R1
Likelihood	Highly Likely (75-99%)	Medium	High	High R1
	Possible (26 - 74%)	Low R4	Medium	High R2 R3
	Unlikely (1 - 25%)	Low	Low	Medium
		Minor	Moderate	Major
		Consequence		

Table 32: Assessment and evaluation of risks

Risk Event	Risk Proximity	Causes	Consequence	Assessment of Likelihood	Assessment of Impact	Risk Rating
1. Unable to effectively relocate and replace key APVMA executive, management and technical assessment staff	Transition	<p>Significant (60-85%) loss of staff prior to and during the transition period.</p> <p>Difficulty in replacing or recruiting key managerial and, most critically, regulatory scientists, due to limited numbers of suitably qualified professionals and an unwillingness of qualified professionals to relocate to Armidale.</p> <p>Experience of technical assessment staff is a key factor in the efficiency and effectiveness of technical assessment staff and quality of decisions and assessment outcomes.</p> <p>Substantial loss of organisational knowledge, experience and expertise (based on the assumption of an approximate 85% redundancy rate as indicated by staff survey results).</p> <p>Competitive employment market for regulatory scientists, with career options in Canberra (e.g. Therapeutic Goods Administration).</p> <p>The staff survey indicated that the primary concerns of existing staff and their unwillingness to relocate centre around:</p> <ul style="list-style-type: none"> ▶ partners having difficulty in finding equivalent work; ▶ limited opportunities for future employment progression; and ▶ strong family ties to the Canberra region. 	<p>Unable to sustain quantity of service delivery (service capacity and efficiency) or quality of service delivery (service quality and effectiveness) over the short to medium term.</p> <p>Potential for negative productivity and environmental impact on national agriculture industry including exports.</p> <p>Delays to the registration and approval of new products.</p> <p>Increased cost of regulatory compliance.</p> <p>Undermining of recent efficiency measures.</p> <p>Damage to the reputation of the APVMA and Australian agricultural industry.</p> <p>Impact on the Government's reform agenda.</p>	Highly Likely	Major	High

Risk Event	Risk Proximity	Causes	Consequence	Assessment of Likelihood	Assessment of Impact	Risk Rating
2. During transition and in the short term, the APVMA is unable to sustain its rate of effort for registration of new agricultural and veterinary chemical products	Transition	<p>Significant loss of staff prior to and during transition period - 15.2% of current staff survey respondents indicate a willingness to relocate.</p> <p>Difficulty in replacing or recruiting key managerial and technical assessment staff, most critically regulatory scientists.</p> <p>Three to five year lead time to recruit and effectively train additional required regulatory scientists to perform technical assessments.</p>	<p>Immediate/short term productivity damage to agriculture and chemical industry. It is estimated that a one year delay in the approval of new chemicals could lead to (see Section 4.4.2):</p> <ul style="list-style-type: none"> ▶ potential loss of crop value of between \$64-\$193 million; and ▶ potential loss of revenue of between \$790,000-\$2.37 million for the chemical industry. <p>Damage to the reputation of the APVMA and Australian agricultural industry.</p> <p>Exit of key chemical companies from the Australian market and subsequent loss of future product releases.</p> <p>The APVMA model of cost recovery, through levies and product registration fees, may result in increased costs being passed on to industry.</p>	Possible	Major	High
3. The APVMA is unable to maintain and grow its capability in the medium term	Future	<p>Significant loss of staff prior to and during transition period - 84.8% redundancy rate as indicated by staff survey results.</p> <p>Substantial loss of organisational knowledge, experience and expertise.</p> <p>Significant lead times required (3-5 years) to effectively educate and train technical assessment staff and regulatory scientists.</p> <p>Armidale lacks the population base to support the scientific workforce</p>	<p>Unable to deliver on the Government's reform agenda, or capitalise on reform achievements made to date.</p> <p>Low quality or inconsistent decision making over time.</p> <p>Unable to sustain quantity and quality of service delivery.</p> <p>Negative impact on national agriculture productivity.</p> <p>Increased cost of regulatory compliance on industry.</p>	Possible	Major	High

Risk Event	Risk Proximity	Causes	Consequence	Assessment of Likelihood	Assessment of Impact	Risk Rating
		<p>required to effectively operate the APVMA.</p> <p>Failure of risk treatment and mitigation strategies including alternate APVMA business models and/or outsourcing technical assessments.</p> <p>Reduced access/increased cost to access international scientific experts.</p>	<p>Damage to the reputation of the APVMA and Australian agricultural industry.</p> <p>Ultimate failure of the relocation of the APVMA to Armidale.</p>			
4. The APVMA has reduced access to stakeholders	Future	<p>Reduced proximity and physical access to key Federal Government contacts, including Minister and Department of Agriculture and Water Resources, Therapeutic Goods Administration and other stakeholders.</p> <p>Staff survey indicated approximately 31% of staff see distance from stakeholders/resources as a significant negative impact of moving the APVMA to Armidale.</p>	Potential for increased burden on industry in complying with regulatory requirements.	Possible	Minor	Low

Source: EY analysis

4.4 Potential risk consequences

This section explores the potential consequences if the risks identified were to materialize. The analysis focuses on the loss of technical expertise and the inability to hire required staff and the associated impact on chemical companies and the agricultural industry if, as a result of the relocation, the approval of chemicals for use was delayed by a year.

4.4.1 Loss of technical expertise and inability to hire required staff

The most significant risk identified through the analysis relates to the ability of the APVMA to relocate, or to recruit and replace, key APVMA executive, management and technical assessment staff within the first two years of relocation. Critically, the loss of technical assessment staff (regulatory scientists) has the potential to seriously disrupt the ability of the APVMA to successfully fulfill its purpose and achieve its objectives in the short and medium term.

Risk 1. The APVMA is unable to effectively relocate or recruit and replace key APVMA executive, management and technical assessment staff within the first two years.

Should this risk materialise significant negative consequences could include:

- ▶ the APVMA being unable to sustain quantity and/or quality of service delivery over the short to medium term;
- ▶ productivity and environmental impact on the national agriculture industry including exports;
- ▶ increased costs associated with regulatory compliance;
- ▶ undermining of recent efficiency measures;
- ▶ damage to the reputation of the APVMA and Australian agricultural industry; and
- ▶ impact on the Government's reform agenda.

Source: EY analysis

Regulatory scientists play a key role in the operations of the APVMA in assessing the safety, efficacy, quality and performance and risk implications of products proposed to be introduced on to the Australian market⁹. They require a diverse set of skills, knowledge and experience to effectively and efficiently perform their function. An effective regulatory scientist is required to have:

- ▶ a comprehensive scientific education, knowledge and skillset; and
- ▶ the ability to understand and apply relevant Australian regulatory frameworks and legislation (including variations related to state and territory jurisdictions) in the assessment of products going to market.

In an initial staff survey conducted by the APVMA in 2015, 78% of the APVMA's regulatory scientists indicated they would not relocate to Armidale (or Toowoomba). This result was confirmed by the staff survey conducted by EY as a part of this analysis (refer to Table 33), with only 4 staff indicating a willingness to relocate and 22 staff indicating they may be willing to relocate. Critically, a significant majority of APVMA regulatory scientists have indicated they would not be willing to relocate to Armidale.

⁹ It is noted that in relation to the assessment of human health, environment and efficacy, assessment coordinators from the APVMA work with assessors at the Australian Government Departments of Health and Environment, as well as with external consultants, to ensure that these assessments are of a high standard. Thus, some of these assessments are performed externally (APVMA Annual Report, 2015).

Table 33: APVMA staff willingness to relocate to Armidale

Area of Work	Yes	Maybe	No
Regulatory Scientists - Risk Managers Pesticide	10%	7%	83%
Regulatory Scientists - Risk Managers Vet Med	0%	6%	94%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	0%	15%	85%
Legal, Compliance, Licensing	0%	29%	71%
CMAU, Corporate	1%	11%	88%
Total	2%	13%	85%

Source: APVMA staff survey

A 2014 report commissioned by the Australian Government Office of the Chief Scientist (OCS) and produced by Deloitte Access Economics sought to examine and understand the skills requirements of Australian businesses with regards to STEM (science, technology and mathematics). This report included a case study on the workforce issues relating specifically to regulatory scientists (Deloitte, 2014).

Discussions with APVMA management and industry stakeholders echoed the findings of the OCS STEM workforce report in relation to the risk of the loss of APVMA regulatory scientists. Concerns raised in these discussions relating specifically to the regulatory science workforce and the risk the APVMA may not be able to relocate or recruit and replace them in Armidale, included:

- ▶ difficulties in both recruiting and retaining people in regulatory science roles;
- ▶ the lengthy induction process for new staff - the skills required to work in the area are becoming increasingly complex and there is a significant element of job specific knowledge that must be acquired to be effective in the role;
- ▶ strong market competition for qualified and experienced regulatory scientists;
- ▶ concern for the supply side sustainability of the regulatory science workforce in the medium to long term; and
- ▶ the potential requirement to substitute the workforce with lesser qualified and experienced staff than those currently employed by the APVMA.

To inform the development of potential transition options and to effectively implement risk treatment strategies related to the potential loss of a majority of APVMA regulatory scientists, the APVMA should gain a detailed understanding of the:

- ▶ current market conditions for the supply of and demand for regulatory scientists; and
- ▶ training requirements and timelines to raise an effective regulatory science workforce.

4.4.2 Impact of delay in approval of new chemicals

A key concern of stakeholders in relation to the relocation of the APVMA to Armidale was the impact that the relocation may have on the approval of new chemicals for use. Stakeholders are concerned that delays will arise as a result of the loss of staff, the disruption to business and/or the impact to the APVMA's current reform agenda.

The following analysis explores the potential impact on chemical companies and the agricultural industry if, as a result of relocation, there was a one year delay to the approval of all chemicals. A delay in the processing of applications and specifically the approval of new chemical products will impact on the revenue received by chemical companies as well as the productivity of the agricultural industry. This section has been used to demonstrate the magnitude of the impact and is predicated on the assumption that delays would result across all chemicals for which approval was being sort.

4.4.2.1 Impact on chemical companies

A delay in the approval of chemicals is likely to delay sales of new products and transpire in a loss of revenue for chemical companies.

To explore the potential impact on revenue resulting from a delay in approvals, average annual first and second year sales of new products have been analysed. However, while new product sales can be identified, not all new product sales are related to truly 'new' products. This is such as new product sales comprise of existing products being sold by new companies, slight enhancements to existing products as well as truly 'new' and innovative products. The latter is likely to generate new sales (and changes to industry productivity), while the former is likely to result in replacement purchases i.e. substitution of sales from one product to a slightly improved product or from one company to another.

Replacement purchases will result in transfer of revenue between companies or between product lines. Hence, a delay in approval of these products is unlikely to impact on the total revenue received by chemical companies. However, a delay in the approval of 'new' products will reduce the revenue received by chemical companies as these products are not replacing existing sales.

The analysis has identified the average first and second year sales of new products, reduced these to account for the replacement of existing products and then calculated the loss resulting from a one year delay. Given the uncertainty associated with the percentage of new product sales which replace existing sales, two scenarios have been tested to provide a range for the anticipated loss to chemical companies.

It is noted that the analysis only considers first and second year sales of new products. This provides a conservative estimate of the impact to chemical companies, noting that over the longer term the market may respond to a delay in a variety of ways to mitigate this impact (such as extensive advertising prerelease to enhance uptake upon release, alternative products becoming available or farmers adapting practices in the absence of chemical availability).

Based on this methodology, it has been estimated that a delay of one year to the approval of applications would result in between \$790,000 and \$2.37 million in lost revenue per annum. This estimate is based on the following:

- ▶ average new product sales of \$59 million in a product's first year and \$213 million in the products second year (based on average first and second year sales data for the last three years provided by the APVMA);
- ▶ an assumption that 85-95% of these new product sales are replacing existing products i.e. 5-15% of new product sales are truly 'new' products (based on information provided by the APVMA); and
- ▶ a delay of Year 1 and 2 sales only (i.e. no consideration of the impact of delays on later year sales). This is a conservative assumption based on the fact that after Year 2 alternative products or practices may become available in the absence of chemical availability.

The following tables outline how the estimated loss was calculated. Table 34 demonstrates the loss based on the assumption that 95% of new product sales are replacing existing products.

Table 34: Estimated loss to chemical companies (95% of new product sales are replacing existing products)

Description	Year 1	Year 2	Year 3
Average new product sales	\$59,938,000	\$213,043,000	
Average 'new' product sales not replacing existing sales	\$2,996,900	\$10,652,150	
Proportion of new product sales (delay)	\$0	\$2,996,900	\$10,652,150
NPV (no delay)	\$12,104,841		
NPV (delay)	\$11,312,935		
Lost revenue for chemical companies	\$791,906		

Source: EY analysis

Table 35 demonstrates the loss based on the assumption that 85% of new product sales are replacing existing products.

Table 35: Estimated loss to chemical companies (85% of new product sales are replacing existing products)

Description	Year 1	Year 2	Year 3
Average new product sales	\$59,938,000	\$213,043,000	
Average 'new' product sales not replacing existing sales	\$8,990,700	\$31,956,450	
Proportion of new product sales (delay)	\$0	\$8,990,700	\$31,956,450
NPV (no delay)	\$36,314,524		
NPV (delay)	\$33,938,807		
Lost revenue for chemical companies	\$2,375,717		

Source: EY analysis

4.4.2.2 Impact on the agriculture industry

Stakeholders also raised concerns that delays in the approval of chemicals will impact the end users of chemicals. Businesses within the agriculture industry are the predominate users of chemicals regulated by the APVMA. Specifically, agvet chemicals are key contributors to the value of livestock and crop sectors. As outlined in the earlier section, a study commissioned by CropLife estimated that 68% of the total value of crop production can be attributed to crop protection products (i.e. agriculture chemicals such as various pesticides) (Deloitte Access Economics, 2013). Further, livestock farmers utilise more than \$1.1 billion worth of animal medicines and productivity enhancing technologies annually (Australian Farm Insitute, 2015).

The value of crop production that can be attributed to crop protection products has been used as an indication of the potential impact of delays in approval to end users. It is noted that this is a conservative estimate as it does not include the livestock sector nor the impact on other end users of chemicals outside the agriculture industry.

Similar to the estimation of the impact on chemical companies, the analysis outlined below has identified the average first and second year sales of new products and reduced these to account for the replacement of existing products. Given the uncertainty associated with the percentage of new product sales which replace existing sales two scenarios have been tested to provide a range for the anticipated impact on crop value. Next, using average total product sales, the proportion of 'new' to existing product sales has then been calculated.

Total crop value and the proportion of total value of crop production that can be attributed to crop protection products have then been used to calculate chemical contribution to crop value. The proportion of 'new' to existing product sales has then been applied to the chemical contribution to crop value to identify the crop value due to 'new' products. The reduction in crop value has then been calculated by discounting the sales to the current year.

It is noted that the analysis only considers first and second year sales of new products. This provides a conservative estimate of the impact to chemical companies, noting that over the longer term the market may respond to a delay in a variety of ways (such as extensive advertising prerelease to enhance uptake upon release, alternative products becoming available or farmers adapting practices in the absence of chemical availability) to mitigate this impact.

Based on this methodology, it has been estimated that a delay of one year to the approval of applications would result in between \$64 million and \$193 million reduction in crop value per annum. This estimate is based on the following:

- ▶ average new product sales of \$59 million in a product's first year and \$213 million in the products second year (based on average first and second year sales data provided by the APVMA).
- ▶ an assumption that 85-95% of these new product sales are replacing existing products i.e. 5-15% of new product sales are truly 'new products' (based on information provided by the APVMA).

- ▶ a delay of Year 1 and 2 sales only (i.e. no consideration of the impact of delays on later year sales). This is a conservative assumption based on the fact that after Year 2 alternative products or practices may become available in the absence of chemical availability.
- ▶ average total product sales of \$3.4 billion per year (based on the average sales data over the last three years provided by the APVMA).
- ▶ total crop value of \$26.7 billion (Australian Bureau of Statistics, 2016).
- ▶ that 68% of the total value of crop production can be attributed to crop protection products (Deloitte Access Economics, 2013).

The following tables outline how the estimated reduction in crop yield was calculated. Table 36 demonstrates the reduction based on the assumption that 95% of new product sales are replacing existing products.

Table 36: Estimated reduction in crop yield (95% of new product sales are replacing existing products)

Row	Description	Calculation basis	Year	Year 2
1	Average new product sales (Year 1 & 2)	Assumption	\$59,938,000	\$213,043,000
2	Proportion of new product sales (not replacing existing)	Row 1 x 5% as per assumption	\$2,996,900	\$10,652,150
3	Average total product sales	Assumption	\$3,414,992,000	\$3,414,992,000
4	Proportion of new product to existing	Row 2/Row 3 *100	0.1%	0.3%
5	Total crop value	Assumption	\$26,759,000,000	\$26,759,000,000
6	Chemical contribution to crop value	Row 5 *68% as per assumption	\$18,196,120,000	\$18,196,120,000
7	Value due to new products	Row 6 * Row 4	\$15,968,398	\$56,757,907
8	Reduction in crop value	NPV	\$64,498,291	

Source: EY analysis

Table 37 demonstrates the reduction based on the assumption that 85% of new product sales are replacing existing products.

Table 37: Estimated reduction in crop yield (85% of new product sales are replacing existing products)

Row	Description	Calculation basis	Year 1	Year 2
1	Average new product sales (Year 1 & 2)	Assumption	\$59,938,000	\$213,043,000
2	Proportion of new product sales (not replacing existing)	Row 1 x 15% as per assumption	\$8,990,700	\$31,956,450
3	Average total product sales	Assumption	\$3,414,992,000	\$3,414,992,000
4	Proportion of new product to existing	Row 2/Row 3 *100	0.3%	0.9%
5	Total crop value	Assumption	\$26,759,000,000	\$26,759,000,000
6	Chemical contribution to crop value	Row 5 *68% as per assumption	\$18,196,120,000	\$18,196,120,000
7	Value due to new products	Row 6 * Row 4	\$47,905,195	\$170,273,722
8	Reduction in crop value	NPV	\$193,494,873	

Source: EY analysis

4.5 Possible risk treatments and mitigations

The following risk treatments and mitigations have been identified as potential mechanisms for minimising any loss of technical expertise within the APVMA and identifying timeframes and strategies for replacing staff and returning staff levels to full capacity.

It is noted that further work may be required in relation to the risk treatment options presented. These options may need to be further analysed, scoped and planned and are likely to require additional supporting data (for example, regulatory science workforce analysis) before being

implemented. All treatment options assume a small APVMA office presence will remain in Canberra, over the short to medium term.

4.5.1 Treatment Option 1: Short term phased transition

Treatment objective:	Short term phased transition designed to finalise relocation as quickly as possible while minimising negative impacts on APVMA service delivery.
Intended treatment effect:	Achieve transition as quickly as possible and build a local Armidale workforce, while Canberra based staff maintain service delivery.
Treatment risks:	This treatment option could result in a drop in APVMA service levels if the transition from Canberra to Armidale is not fully aligned, or as a result of early loss of a significant number of APVMA regulatory scientists and other key staff.
Related risks:	Risks 1, 2 and 3
Treatment proximity:	Short Term

- ▶ Managing the relocation to Armidale following a phased approach over a two to three year period.
- ▶ APVMA executive management has indicated transition phases could include:
 - ▶ phase 1 - relocation of key corporate staff;
 - ▶ phase 2 - transfer of first teams based on a skill requirements and gap analysis;
 - ▶ phase 3 - training new Armidale based staff, while staff remaining in Canberra maintain service delivery; and
 - ▶ phase 4 - transition of remaining staff from Canberra to Armidale.

4.5.2 Treatment Option 2: Medium term phased transition (Parallel organisations)

Treatment objective:	Medium term phased transition designed to minimise the risks associated with loss of key staff who are unwilling to relocate.
Intended treatment effect:	Achieve transition over a longer time period (than short term phased transition). Provides time to recruit and train local Armidale workforce. Canberra based staff maintain service delivery, minimising the loss of regulatory scientists and other key APVMA staff.
Treatment risks:	This treatment option could result in failure of the organisational change program associated with the transition losing momentum, regulatory science training programs failing to supply an adequate and effective workforce, or as a result of early loss of a significant number of APVMA regulatory scientists and other key staff.
Related Risks:	Risks 1, 2 and 3
Treatment Proximity:	Future

- ▶ Continue operating the Canberra office unchanged in the short term.
- ▶ Stand up the Armidale APVMA office as a parallel organisation/satellite office, building the corporate business processes and skills and training local regulatory science staff.
- ▶ After 3-5 years (being the transition of APVMA executive leadership and management to the Armidale office) commence shutdown of Canberra office location.

4.5.3 Treatment Option 3: The development of a new business model

Treatment objective:	Creation of a new business model which allows for technical assessment work to be conducted remotely if required by workforce constraints.
Intended treatment effect:	Minimise the impact of loss of regulatory scientists and other key APVMA staff and the inability of regulatory science training programs to supply an adequate and effective workforce.
Treatment risks:	Could result in failure to achieve the objectives and intended benefits of the relocation of the APVMA to Armidale.
Related Risks:	Risks 1, 2 and 3
Treatment Proximity:	Short Term

- ▶ Adjusting the APVMA business model to allow for dispersion of employees across locations such as a hub and spoke model or a virtual technical assessment model, mitigating the impact of loss of regulatory scientists.
- ▶ Technical assessments performed in a number of locations due to inability to relocate, attract, train, or retain regulatory scientist personnel in the Armidale location.
- ▶ Other business functions and teams relocate to Armidale.

4.5.4 Treatment Option 4: Regulatory scientist training program

Treatment objective:	Minimise the risks associated with loss of regulatory science staff who are unwilling to relocate.
Intended treatment effect:	Build an appropriately qualified and effective regulatory science workforce.
Treatment risks:	Difficulties in both recruiting and retaining people in regulatory science roles may result in the APVMA being forced to engage and train lesser quality staff than those currently employed, with service quality implications. The lengthy training and induction process increases the risk that service delivery is impacted in the short to medium term.
Related Risks:	Risks 1 and 2
Treatment Proximity:	Short Term

- ▶ Early initiation of a large scale program to identify and train the 55-60 regulatory science staff required to deliver services.
- ▶ EY has been advised the training period for a regulatory scientist is between 3 to 5 years.

4.5.5 Treatment Option 5: Relocation/recruitment incentive packages

Treatment objective:	Minimise the number of regulatory science staff who are unwilling to relocate.
Intended treatment effect:	Incentivise regulatory science staff to relocate to Armidale.
Treatment risks:	Financial impact in the short term. Impacts on salary expectations in the long term. Potential to create organisational discord if incentives are not uniformly offered or applied.
Related Risks:	Risks 1, 2 and 3
Treatment Proximity:	Short Term

- ▶ Provide incentive payments and a relocation services program/package for APVMA staff willing to relocate to Armidale, including:
 - ▶ employment location assistance and education/retraining services for employees immediate family members; and
 - ▶ assistance with relocation costs, temporary accommodation and general relocation logistics.

4.5.6 Treatment Option 6: Outsourcing technical assessment work

Treatment objective:	Minimise the risks associated with loss of regulatory science staff who are unwilling to relocate.
Intended treatment effect:	Maintain service delivery in the short and medium term, despite the loss of significant numbers of the regulatory science workforce.
Treatment risks:	There may be limited outsourcing options available. Financial impact. May be unsustainable in the long term. Has the potential for reduced quality of service if contractual agreements are not adequately constructed.
Related Risks:	Risk 1 and 2
Treatment Proximity:	Short Term / Transition / Future

- ▶ Provide contingency funding for outsourcing technical assessments.
- ▶ Outsource scientific and technical assessment functions to the private sector to support the organisation in the short term to deal with the loss of regulatory science staff and corporate knowledge.

4.5.7 Treatment Option 7: Financial and technological solutions to assist collaboration and engagement

Treatment objective:	Utilise available technology to limit the impact of reduced proximity and physical access to key Federal Government contacts, including Minister and Department of Agriculture and Water Resources, Therapeutic Goods Administration, chemical companies and other stakeholders.
Intended treatment effect:	Maintain and continue to develop APVMA organisational and individual level relationships with stakeholders.
Treatment risks:	Financial impact.
Related Risks:	Risk 4
Treatment Proximity:	Short Term

- ▶ Provide contingency funding for increased travel budget for APVMA staff.
- ▶ Provide contingency funding to facilitate travel to Armidale for appropriate academic and industry scientists and other stakeholders for the purpose of education, collaboration, knowledge sharing and organisational development.
- ▶ Provide contingency funding for technological solutions to assist with communication and collaboration including video and audio teleconferencing and other similar technologies to maximise the organisation's access to the National Broadband Network.

4.6 Critical next tasks

Based on the above risk assessment and identification of risk treatments and mitigations, the following critical next tasks have been identified.

4.6.1 An analysis of supply (and demand) for regulatory scientists

- ▶ **Issue:** A key risk identified is the inability to effectively relocate and replace key APVMA executive, management and technical assessment staff. A key element of this risk, as identified anecdotally by stakeholders, is the current high demand and limited availability of regulatory scientists both domestically and internationally.
- ▶ **Description:** This task involves workforce analysis to be undertaken to determine the availability of applicable staff, particularly regulatory scientists both domestically and internationally. This would include a comparison of wages across various fields to identify the competitiveness of the APVMA and identify mechanisms to enhance this competitiveness.

- ▶ Outcome: An in depth understanding of availability of key staff, particularly regulatory scientists, as well as the demand and competition for these staff. This analysis would inform the further development of transition options as well as recruitment, retention and training strategies.

4.6.2 An analysis of connectivity between APVMA business groups

- ▶ Issue: To fully understand the feasibility of alternative transition options a comprehensive analysis of the connectivity between APVMA business groups is required.
- ▶ Description: This task would entail working with the APVMA executive to map out the interactions between each business unit and how these would be impacted by a full or partial relocation or outsourcing of other related business units.
- ▶ Outcome: Upon completion of this analysis a comprehensive understanding of the interaction, connectivity and synergies between business units would be identified and documented. This would then be used to inform the further development and costing of alternative transition options within the transition plan.

4.6.3 Development of recruitment, retention and training strategies

- ▶ Issue: As outlined above, a key risk identified is the inability to effectively relocate and replace key APVMA executive, management and technical assessment staff. A key element of this risk, as identified anecdotally by stakeholders, is the current high demand and limited availability of regulatory scientists both domestically and internationally.
- ▶ Description: Once the analysis of the supply (and demand) for regulatory scientists has been undertaken, tailored recruitment, retention and training strategies will need to be developed. This task requires formulating recruitment, retention and training strategies tailored to overcome workforce supply and demand challenges.
- ▶ Outcome: Upon completion of this task, specific recruitment, retention and training strategies would be identified. These would inform the feasibility and costing of transition options within the transition plan, noting they may need to be further tailored for individual options.

4.6.4 Development of a transition plan

- ▶ Issue: There are a number of risk treatment options which have been identified in this report. Within the scope of this project these have only been assessed at a high level. Further assessment of their feasibility and cost is required to determine a recommended option.
- ▶ Description: This task would involve further defining the alternative options, costing these options and developing a preferred approach. Based on this preferred approach a transition plan would be developed. This task would draw on the recruitment, retention and training strategies as well as the analysis of connectivity between APVMA business groups and include consideration of the impact to industry of each option.
- ▶ Outcome: A costed transition plan to relocate the APVMA to Armidale and minimise the risks of such a transition.

5. Economic impacts

This chapter sets out the regional economic impacts of the relocation of the APVMA to Armidale. The impacts on both the ACT and Armidale region are considered. An economic analysis software package, REMPLAN, was used to assess the flow-on impacts. Impacts have been reported in terms of direct and indirect jobs, output and value-added.

5.1 Approach

5.1.1 REMPLAN

REMPAN is an economic analysis software package designed for use by economic development practitioners. REMPLAN provides detailed economic data for single or combinations of local government areas and also incorporates a dynamic economic modelling capability to allow the analysis of 'what if' scenarios.

REMPAN is essentially an input-output model of the Australian economy and regional economies. Input-output models trace the revenue and expenditure flows that link industries and workers within and outside economic regions. For instance, an increase in output in one industry (the "direct impact") would give rise to demand for inputs from other industries (industrial effect) as well as labour (consumption effect). In turn, these support industries would demand further inputs and labour and so on. This is the so-called multiplier or indirect effect.

REMPAN's core data set is based on Australian Bureau of Statistics (ABS) national accounts figures of the Australian economy, coupled with the latest Census data. REMPLAN's key advantage over other input-output models or "off-the shelf multipliers" is that it can be region specific.

For small regions, multipliers tend to be smaller than national multipliers since their inter-industry linkages are normally relatively shallow. Inter-industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.



REMPAN addresses these issues by factoring in these leakage effects in regional economies, based on assessing the current structure of the regional economy (using workforce data).

This analysis uses tailored input/output multipliers that reflect the specific characteristics of the ACT and the Armidale regions. The REMPLAN model accounts for 'leakage' of direct expenditure from the economy in its multipliers. Input-output models are often criticised when used in economic impact assessments as they do not consider capacity constraints in the economy (e.g. full employment). Such constraints limit the extent to which economic impacts can increase in a linear fashion with changes in demand. The alternative Computable General Equilibrium (CGE) approach addresses some of these issues, although the nature and scale of this project did not warrant the use a detailed CGE analysis at this time.

5.1.2 Assumptions

An economic input-output analysis requires clear definition of assumptions including job loss/generation and the region impacted. The assumptions used to undertake the economic analysis are set out in Table 38.

Table 38: Assumptions used for the economic analysis

	Impact on the ACT	Impact on Armidale
Region	ACT (State)	Armidale Dumaresq
	 <p>ABS 2011 Census Place of Usual Residence Population: 357,218</p> <p>Total Output in the area is estimated at \$61,340.826 million</p> <p>The major contributors to output are:</p> <ul style="list-style-type: none"> ▶ Public Administration & Safety: 31.9% ▶ Professional, Scientific & Technical Services: 10.5% ▶ Construction: 10.2% 	 <p>ABS 2011 Census Place of Usual Residence Population: 24,105</p> <p>Total Output in the area is estimated at \$2,099.381 million</p> <p>The major contributors to output are:</p> <ul style="list-style-type: none"> ▶ Education & Training: 12.9% ▶ Rental, Hiring & Real Estate Services 10.8% ▶ Financial & Insurance Services 8.3%
Impact of the APVMA relocation	<p>Year 1 - Nil</p> <p>Year 2 - Direct job loss of 189 FTE</p> <p>Year 3 - Continued job loss of 189 FTE</p>	<p>Year 1 - Construction costs of \$9.137 million</p> <p>Year 2 - Construction costs of \$9.366m and direct job gain of 189 FTE</p> <p>Year 3 - Continued direct job gain of 189 FTE</p>

Source: EY analysis, REMPLAN

5.1.3 Reported indicators

Three key indicators are reported to illustrate the flow-on economic impacts on the ACT and Armidale region, they are:

- ▶ employment - Employment data corresponds to the total number of full-time, part-time and casual jobs in each sector;
- ▶ output - Output represents the gross revenue generated by businesses and organisations in each of the industry sectors; and
- ▶ value-added - Value-added is the marginal economic value that is added by each industry sector.

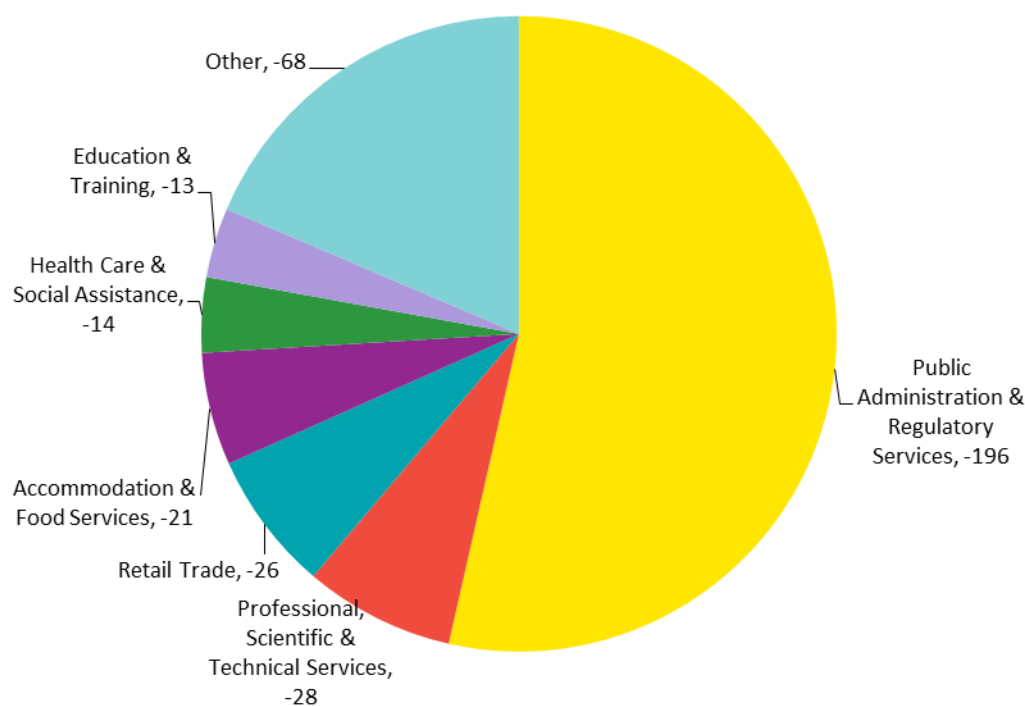
5.2 Impact on the ACT

5.2.1 Employment

In Year 2 and Year 3 it is estimated that the relocation of the APVMA will have a direct impact of -189 jobs in the ACT. The indirect effect of the relocation of the APVMA is estimated at -176 jobs in Year 2 and Year 3. Therefore, the total impact on employment in the ACT is estimated at -365 jobs in Year 2 and Year 3. This represents a loss of 0.2% in total employment in the ACT.

As expected, the biggest impact in employment is felt by the Public Administration and Regulatory Services sector, with an estimated loss of 196 jobs in Year 2 and Year 3. The next biggest loss is the Professional, Scientific & Technical Services sector of an estimated 28 jobs (see Figure 13).

Figure 13: Impact on employment in the ACT of the relocation of the APVMA (per year, Year 2, Year 3)



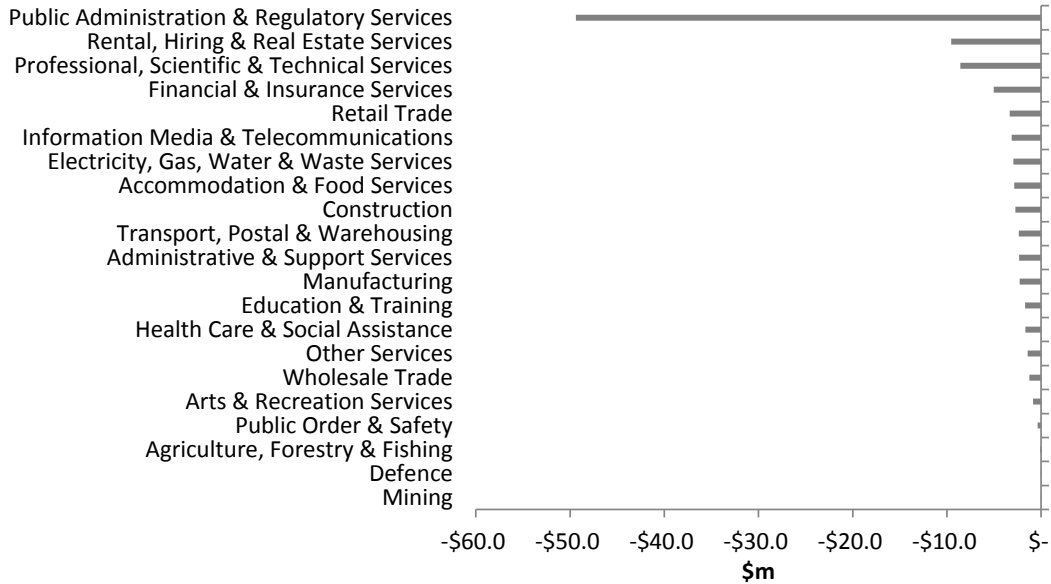
Source: EY analysis, REMPLAN

5.2.2 Output

It is estimated that the relocation of the APVMA will have a direct impact of -\$47.63 million in the ACT in Year 2 and in Year 3. The indirect effect of the relocation of the APVMA is an estimated -\$54.25 million each year in Year 2 and in Year 3. Therefore, the total impact on output in the ACT is estimated at -\$101.88 million each year in Year 2 and in Year 3. This represents 0.2% of total output in the ACT.

The biggest impact on output is expected to be felt by the Public Administration, Regulatory Services, Order & Safety sector, with a loss of -\$49.38 million. The next biggest loss is expected to be the Rental, Hiring & Real Estate Services sector of -\$9.53 million (see Figure 14).

Figure 14: Impact on output in the ACT of the relocation of the APVMA (per year, Year 2, Year 3)



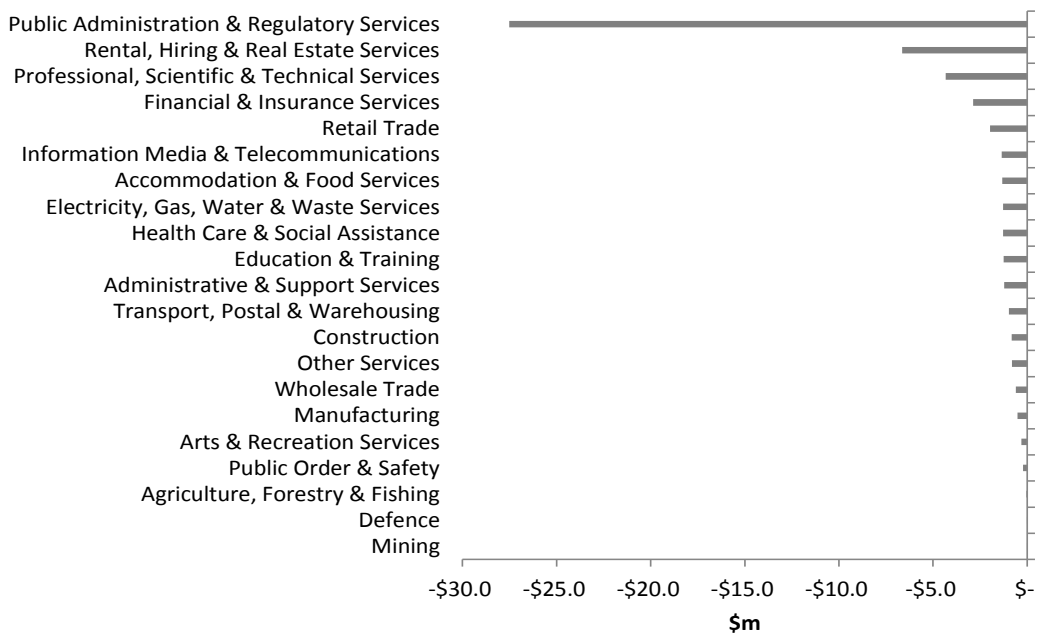
Source: EY analysis, REMPLAN

5.2.3 Value-added

It is estimated that the relocation of the APVMA will have a direct impact of -\$26.53 million in value-added in the ACT in Year 2 and in Year 3. The indirect effect of the relocation of the APVMA is estimated to be -\$28.85 million in value-added in Year 2 and in Year 3. Therefore, the total impact on value-added in the ACT is estimated at -\$55.38 million in Year 2 and in Year 3. This represents 0.2% of total value-added in the ACT.

As with output and employment, the biggest impact in value-added is expected to be felt by the Public Administration and Regulatory Services sector, with a loss of -\$27.51 million. The next biggest loss is expected to be the Rental, Hiring & Real Estate Services sector of -\$6.65 million (see Figure 15).

Figure 15: Impact on value-added in the ACT of the relocation of the APVMA (per year, Year 2, Year 3)



Source: EY analysis, REMPLAN

5.3 Impact on Armidale

5.3.1 Employment

It is estimated that the construction of a new building and the relocation of the APVMA will have a direct impact in Armidale of:

- ▶ 15 jobs in the first year;
- ▶ 204 jobs in the second year; and
- ▶ 189 jobs in the third year.

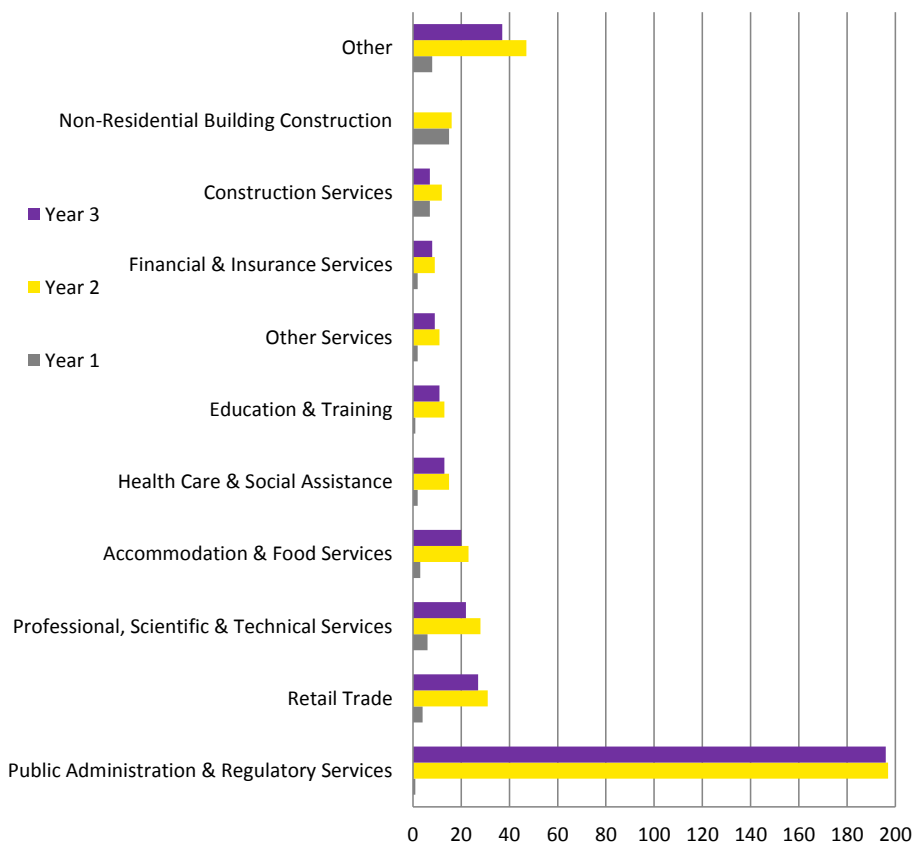
The indirect effect from the construction of the new building in the first year is expected to be 38 jobs and the indirect effect from the construction and relocation of the APVMA is expected to be an additional 200 indirect jobs in Year 2. In Year 3 there is an estimated indirect job impact of 161 jobs.

Therefore, the total impact on employment in Armidale is expected to be:

- ▶ 53 jobs in the first year (0.5% of total employment in Armidale);
- ▶ 404 jobs in the second year (4.0% of total employment in Armidale); and
- ▶ 350 jobs in the third year (3.4% of total employment in Armidale).

In the first year the biggest impact will be in the Non-Residential Building Construction sector with an estimated 15 additional jobs. The biggest increase in employment in the second year is in the Public Administration and Regulatory Services sector, with an estimated increase of 197 jobs in Year 2. Similarly, in Year 3 the biggest increase is in the Public Administration and Regulatory Services sector with an estimated 196 additional jobs (see Figure 16).

Figure 16: Impact on employment in Armidale of the relocation of the APVMA



Source: EY analysis, REMPLAN

5.3.2 Output

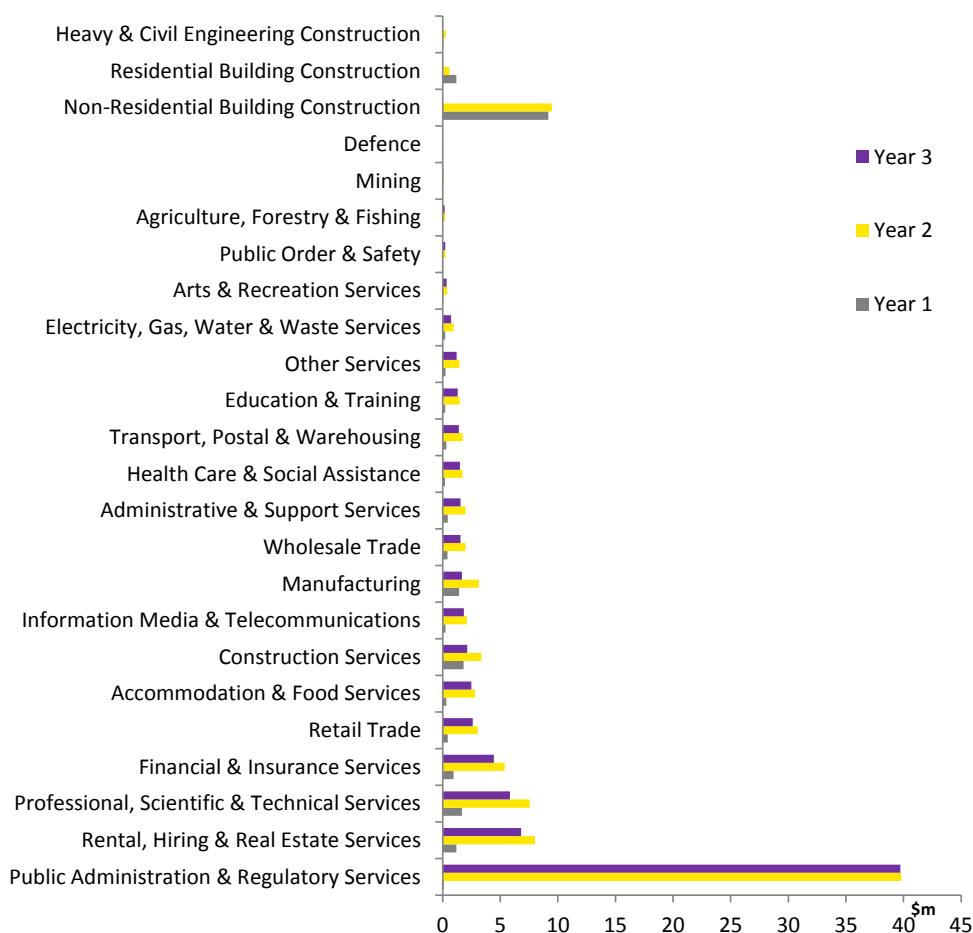
It is estimated that the construction of the new building in Year 1 and 2 and the relocation of the APVMA in Year 2 to Armidale will have a direct impact of \$9.14 million in Year 1, \$47.58 million in Year 2 and \$38.21 million in Year 3. The indirect effect of the relocation to the region is estimated at \$10.56 million in Year 1, \$50.16 million in Year 2 and \$39.33 million in Year 3.

Therefore, the total impact on output in Armidale is expected to be:

- ▶ \$19.70 million the first year (0.9% of output in Armidale);
- ▶ \$97.74 million in the second year (4.7% of output in Armidale); and
- ▶ \$77.54 million in the third year (3.7% of output in Armidale).

In the first year the biggest impact will be in the Non-Residential Building Construction sector with an estimated increase in output of \$9.18 million. The biggest impact in output in the second year is expected to be felt by the Public Administration and Regulatory Services sector, with a gain of \$39.80 million. The next biggest gain in the second year is expected to be the Non-Residential Building Construction sector at \$9.49 million. In Year 3, the largest impact in output is expected to be felt by the Public Administration and Regulatory Services sector, with a gain of \$39.72 million. The Rental, Hiring & Real Estate Services sector is also expected to gain \$6.81 million in Year 3 (see Figure 17).

Figure 17: Impact on output in Armidale of the relocation of the APVMA



Source:

EY analysis, REMPLAN

5.3.3 Value-added

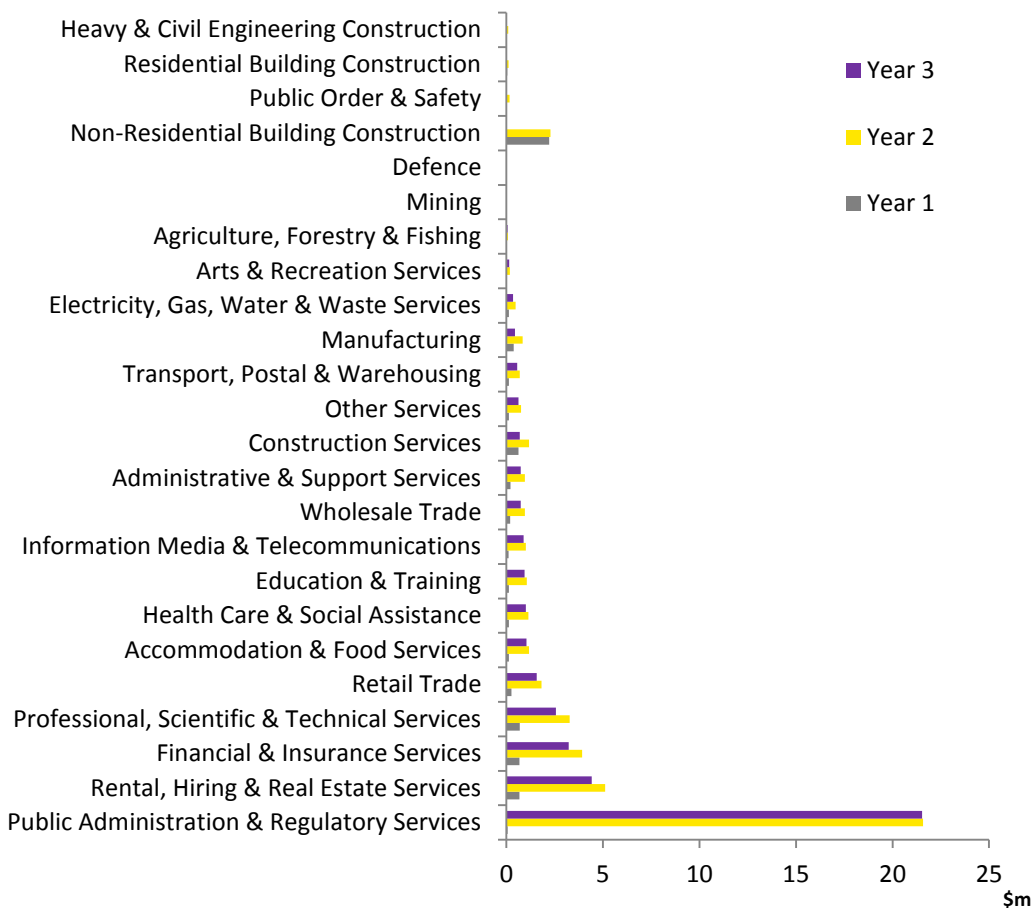
It is estimated that the construction and relocation of the APVMA will have a direct impact of \$2.20 million in Year 1, \$22.96 million in Year 2 and \$20.71 million in Year 3 on value-added to the Armidale region. The indirect effect of the relocation of the APVMA on value-added is estimated to be \$4.80 million in Year 1, \$25.94 million in Year 2 and \$21.02 million in Year 3.

Therefore, the total impact on value-added in Armidale is expected to be:

- ▶ \$7.00 million the first year (0.6% of value-added in Armidale);
- ▶ \$48.90 million in the second year (4.3% of value-added in Armidale); and
- ▶ \$41.73 million in the third year (3.7% of value-added in Armidale).

The biggest expected impact on value-added in Year 1 is in the Non-Residential Building and Construction sector of \$2.21 million. As with output and employment, the biggest impact in value-added in Year 2 is expected to be felt by the Public Administration and Regulatory Services sector, with a gain of \$21.58 million in value-added. This is similarly reflected in Year 3, with an expected gain of \$21.53 million in value-added in the Public Administration and Regulatory Services sector (see Figure 18).

Figure 18: Impact on value-added in Armidale of the relocation of the APVMA



Source: EY analysis, REMPLAN

5.4 Summary of impact

The analysis of the flow-on impacts has estimated the adjustments in employment, output and value-added in the ACT and Armidale regions of the relocation of the APVMA to Armidale. The impact analysis is based on the following assumptions:

- ▶ construction in Armidale of \$9.137 million in year 1;
- ▶ construction in Armidale of \$9.366 million and 189 jobs for the APVMA in Armidale in Year 2, while in the ACT 189 jobs are lost; and
- ▶ ongoing 189 jobs for the APVMA in Armidale in Year 3 and an ongoing loss of 189 jobs in the ACT in Year 3.

A summary of the estimated flow-on impacts is set out in Table 39.

Table 39: Summary of estimated flow-on impacts¹⁰

	Impact on the ACT			Impact on Armidale		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Modelled impact	Nil	Loss of 189 direct jobs	Ongoing loss of 189 direct jobs	Construction of \$9.137m	Construction of \$9.366m Additional 189 direct jobs	Ongoing additional 189 direct jobs
Employment (number and % of total employment)	Nil	365 jobs 0.2%	365 jobs 0.2%	53 jobs 0.5%	404 jobs 4.0%	350 jobs 3.4%
Output (number and % of total output)	Nil	\$101.88 m 0.2%	\$101.88 m 0.2%	\$19.70m 0.9%	\$97.74m 4.7%	\$77.54 m 3.7%
Value-added (number and % of total value-added)	Nil	\$55.38 m 0.2%	\$55.38 m 0.2%	\$7m 0.6%	\$48.90m 4.3%	\$41.73 m 3.7%

Source: EY analysis, REMPLAN

As is shown in the summary impacts although the ACT lost 189 direct jobs and Armidale gained 189 direct jobs, the impact in each of the local economies is different. This has to do with the consumption activities for each of the economies. The larger and more diverse an economy is, the more likely that consumption occurs within an economy.

Based on 2011 Census data, the Armidale region has a population of 24,105. The major industries that contribute to output in the region are education and training (12.9%), rental, hiring and real estate services (10.8%) and financial and insurance services (8.3%). Similarly, the ABS 2011 Census shows that the ACT region has a population of 357,218. The major contributors to output are public administration and safety (31.9%), professional, scientific and technical services (10.5%) and construction (10.2%). As Armidale is a less populated and diverse region than the ACT, the economic impact of the relocation of staff has less of an impact in the Armidale region than it does in the ACT. Comparing the results for Year 3, a loss of 189 direct jobs has an impact of a loss of 365 jobs in the ACT. Whereas, a gain of 189 jobs in Armidale has an impact of 350 jobs gained in

¹⁰ Note that REMPLAN analysis represents a year by year analysis, numbers cannot be added for each year to present a total over a period as there will be double-counting in jobs.

Armidale (there is a difference of 15 jobs). Similar results are also shown in output and value added.

Year 3 represents the ongoing impact expected for both the ACT and Armidale. While the gain is not as great in the Armidale region in Year 3, the magnitude of the impact in each of these economies is significantly different. A loss of \$101.88m in output in Year 3 represents a 0.2% loss in output in the ACT. Whereas the gain in output in Year 3, represents a gain of 3.7% of total output in Armidale. This is similarly the case for employment (0.2% of employment in the ACT, 3.4% of employment in Armidale) and value-added (0.2% of value-added in the ACT, 3.7% of value-added in Armidale).

When jobs relocate there are three key impacts - a direct impact in jobs, an industrial effect and a consumption effect. First there is an increase in output in one industry (the "direct impact") that gives rise to demand for inputs from other industries (the "industrial effect") as well as labour ("consumption effect"). While the additional jobs in Armidale represent a higher proportion to that lost in the ACT, as the economy of Armidale is not as diverse as the ACT, the flow-on industrial and consumption effects are not as great. This means that there is leakage of benefits to other regions as the demand for inputs and labour is satisfied by a broader region.

In addition, it is difficult to apportion the impacts to those related to construction and those related to additional jobs in the region. While in Year 1 the only impacts are related to construction and in Year 3 the only impacts are related to ongoing direct jobs, it is difficult to attribute the impact of construction and the impact of a shift in jobs in Year 2 where both impacts interact. The economic modelling undertaken shows the impact in Year 2 as a combination of both construction and direct jobs, if these results were modelled separately the outcome would be different.

6. Conclusion

This study is comprised of three elements:

1. an assessment of the economic costs and benefits of relocating the APVMA from Canberra to Armidale;
2. an examination of the key risks of relocation and effective mitigation strategies or plans that could address the identified risks; and
3. an analysis of the economic impacts on Canberra and Armidale.

The results of these three elements are summarised below.

6.1 Cost benefit analysis

Overall, the analysis of costs and benefits associated with the relocation of the APVMA to Armidale has found that the economic benefits for the Australian economy associated with moving the APVMA from Canberra to Armidale are modest. This is because the strategic and operational benefits of having the APVMA operate out of Armidale appear to be limited. This is not to say that the APVMA could not operate successfully from Armidale over the longer term if key risks are addressed and transition is executed appropriately.

While a number of potential benefits of relocation were identified, the majority of potential benefits (apart from a possible reduction in property costs) are not anticipated to result in material economic advantages for society. The following potential benefits to the APVMA as a result of relocation were identified by some stakeholders as part of this work:

- ▶ co-location with the University of New England (UNE);
- ▶ enhanced proximity to end users and other agricultural researchers;
- ▶ reduction in property costs; and
- ▶ leverage of NBN infrastructure.

In addition, relocation may provide the following benefits to the Armidale community:

- ▶ job creation;
- ▶ increased availability of skilled employees (due to partners of employees moving to Armidale); and
- ▶ a more diversified economy.

A variety of costs have been identified resulting from the relocation of the APVMA to Armidale. It is noted that the analysis identified predominately financial costs, which in this case are economic costs. These include costs to the APVMA, such as operational, moving, property and human capital costs and to industry, such as increased travel and opportunity costs.

The net present value (NPV) of the economic assessment of relocation is estimated to be an economic cost of \$23.19 million. This \$23.19 million represents the economic cost over 20 years to society in present day dollars using a project discount rate of 7% and thus should not be construed as the cash or financial cost of the project. Given that it is an economic analysis the cost benefit analysis includes the cost and benefits to all the stakeholders impacted by the project not just the government.

There are high costs in Years 1-5, driven by the cost of constructing a new building, moving costs and costs associated with recruitment, training, redundancy and oversight. However, from Year 5 to Year 20, cost savings arise driven by the net savings in property costs.

The estimated economic cost of \$23.19 million excludes any potential cost to industry arising from the risks to the agricultural sector, the chemical industry or Australia's trading reputation. Whilst these risks are real, their impacts and consequences are based on a probability of an event occurring and as such in adopting the principle of conservatism they have been excluded.

To effectively undertake the move of the APVMA and adopt relevant risk mitigation strategies, the cash cost to the government could be significantly higher than the estimated economic cost of \$23.19 million.

6.1.1 Sensitivity testing and scenario analysis

Scenario analysis has been used to explore the impact that a different mechanism for housing the APVMA (i.e. renting an existing building (scenario 2), compared to constructing a new building (scenario 1)) would have on the analysis¹¹. The scenario analysis showed that securing a lease over the WJ McCarthy Building results in reduced net property costs (relative to continuing to lease the Symonston facility). While initially costs are greater due to the need to continue to pay for the current facility as well as the building in Armidale, from Year 5 onwards there are significant property cost savings to the APVMA associated with this scenario. These arise from the lower rental cost associated with the WJ McCarthy Building (when compared to the Symonston facility).

These lower net property costs have a significant impact on the NPV of the economic costs of relocation. Based on the net property costs associated with securing a lease over the WJ McCarthy Building and with all other variables consistent with the central base case, the economic cost of relocation over 20 years is estimated to have an NPV of \$11.54 million.

Scenario 2 therefore has a significantly lower economic cost when compared to the estimated \$23.19 million economic cost of relocation over 20 years associated with scenario 1. This demonstrates that the results of the cost benefit analysis are quite sensitive to the mechanism used to house the APVMA (i.e. renting an existing building, compared to constructing a new building).

To explore the effect of changing key variables on the results, partial sensitivity testing was undertaken across the two main variables for the cost benefit analysis, the discount rate used and the number of employees that are willing to relocate to Armidale. The sensitivity testing alters both these assumptions independently to identify the impact that changes to these variables have on the results of the cost benefit analysis.

The sensitivity testing in relation to the number of staff willing to relocate has explored the impact that an additional 10 and 20 per cent of staff relocating (at each staff level) has on the results. This showed that the greater the proportion of staff willing to relocate, the lower the total economic cost of relocation. If an additional 10 per cent of staff (compared to the results of the staff survey) were willing to relocate, the total economic cost is estimated to be \$22.19 million, while an additional 20 per cent of staff being willing to relocate (compared to the results of the staff survey) is estimated to reduce the total economic cost to \$21.19 million.

Varying the discount rate has a mixed impact on the results of the cost benefit analysis and suggests that the overall results are not materially sensitive to changes in this assumption. Comparing the use of a lower discount rate of 3 per cent to the central case (discount rate of 7 per cent), the NPV of costs decreases to \$22.38 million. This modest impact occurs given the scale and profile of the cost savings - a lower discount rate increases the real value of the savings in Year 5 20 and hence decreases the total cost. The use of a higher discount rate also reduces costs, albeit

¹¹ It is noted that the primary analysis undertaken has assumed that the construction of a new building to house APVMA is required, based on a lack of availability of an existing facility. In principle (from an economic theory perspective) the lease or buy choice should have no impact on the economic analysis as economically the rental cost will match the consumption of economic resources under the build option (if the assets deliver the same service) - i.e. the rental cost over the building's life should match the cost of constructing the building. However, given the uncertainty surrounding the use of an existing facility (particularly in relation to the level of services able to be delivered), the financial costs associated with the WJ McCarthy building have been used as a proxy for economic costs in the scenario analysis, leading to differences in the estimated NPV of the two scenarios.

marginally (to \$23.13 million). While this may seem counter intuitive, it occurs because of the scale and profile of costs and cost savings. Significant economic costs are incurred in the first four years (due to the construction of a new building and the costs associated with redundancies, training and recruitment). A higher discount rate therefore reduces these costs, while also reducing the benefits. However, the higher discount rate reduces the costs in the earlier years to a greater extent than the later year benefits, hence reducing the total cost.

6.2 Risks of relocation

The following key risks associated with the relocation of the APVMA to Armidale have been identified:

- ▶ the APVMA may be unable to relocate, or recruit and replace, key APVMA executive, management and technical assessment staff;
- ▶ during transition and in the short term, the APVMA may not be able to sustain its rate of effort for registration of new agricultural and veterinary chemical products;
- ▶ the APVMA may be unable to maintain and grow its capability in the medium term; and
- ▶ the APVMA may have reduced access to stakeholders.

To manage these risks the following potential mitigation strategies have been identified:

- ▶ short term phased transition;
- ▶ medium term phased transition (parallel organisations);
- ▶ the development of a new business model;
- ▶ regulatory scientist training program;
- ▶ relocation/recruitment incentive packages;
- ▶ outsourcing technical assessment work; and
- ▶ technological solutions to assist collaboration and engagement.

Further work is required to more fully understand the implications of each of the proposed risk treatments and mitigations, the implementation pathways and preferred strategies. Based on the risk assessment and identification of risk treatments and mitigations, the following critical next tasks have been identified as required going forward:

- ▶ an analysis of supply (and demand) for regulatory scientists;
- ▶ an analysis of connectivity between APVMA business groups;
- ▶ development of recruitment, retention and training strategies; and
- ▶ development of a transition plan.

6.3 Economic impacts

The analysis of the flow-on impacts has estimated the adjustments in employment, output and value-added in the ACT and Armidale regions of the relocation of the APVMA to Armidale. The impact analyses:

- ▶ construction in Armidale of \$9.137 million in Year 1;
- ▶ construction in Armidale of \$9.366 million and 189 jobs for the APVMA in Armidale in Year 2, while in the ACT 189 jobs are lost; and
- ▶ ongoing 189 jobs for the APVMA in Armidale in Year 3 and an ongoing loss of 189 jobs in the ACT in Year 3.

A summary of the estimated flow-on impacts is set out in Table 40. In Armidale in Year 1, the flow-on economic impacts relate to the commencement of construction. In Year 2, the impacts relate to the finalisation of construction and the relocation of the APVMA. In the final year, the flow-on impacts estimated relate only to the 189 direct jobs transferring from the ACT to Armidale. The modelling undertaken uses the Year 3 results as an example of the ongoing impacts in the ACT and Armidale economies.

Table 40: Summary of estimated flow-on impacts¹²

	Impact on the ACT			Impact on Armidale		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Modelled impact	Nil	Loss of 189 direct jobs	Ongoing loss of 189 direct jobs	Construction of \$9.137m	Construction of \$9.366m Additional 189 direct jobs	Ongoing additional 189 direct jobs
Employment (number and % of total employment)	Nil	365 jobs 0.2%	365 jobs 0.2%	53 jobs 0.5%	404 jobs 4.0%	350 jobs 3.4%
Output (number and % of total output)	Nil	\$101.88 m 0.2%	\$101.88 m 0.2%	\$19.70m 0.9%	\$97.74m 4.7%	\$77.54 m 3.7%
Value-added (number and % of total value-added)	Nil	\$55.38 m 0.2%	\$55.38 m 0.2%	\$7m 0.6%	\$48.90m 4.3%	\$41.73 m 3.7%

Source: EY analysis, REMPLAN

As is shown in the summary impacts, although the ACT lost 189 direct jobs and Armidale gained 189 direct jobs, the impact in each of the local economies is different. For example, in Year 3, the impact of a loss of 189 direct jobs in the ACT is 365 total jobs (direct and indirect), a \$101.88m loss in output and \$55.38m loss in value add. Whereas in Armidale the gain is 350 direct and indirect jobs, \$77.54m in additional output and \$41.73m in value add. The differences have to do with the consumption activities for each of the economies. The larger and more diverse an economy is, the more likely that consumption occurs within an economy.

While the gain is not as great in Year 3, the magnitude of the impact in each of these economies is significantly different. A loss of \$101.88m in output in Year 3 represents a 0.2% loss in output in the ACT. Whereas the gain in output in Year 3 represents a gain of 3.7% of total output in Armidale.

¹² Note that REMPLAN analysis represents a year by year analysis, numbers cannot be added for each year to present a total over a period as there will be double-counting in jobs.

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Appendix A Work specification

The Department of Agriculture and Water Resources (the department) is commissioning an independent cost-benefit risk analysis (the analysis) of the potential relocation of the Australian Pesticides and Veterinary Medicines Authority (APVMA) from Canberra, ACT to Armidale, NSW.

The analysis should consider the costs, benefits and risks of the APVMA moving from Canberra to Armidale compared to the APVMA remaining in Canberra. The analysis considers the benefits, costs and risks of the APVMA moving from Canberra to Armidale compared to the APVMA remaining in Canberra.

It should consider relevant background including:

- ▶ policy objectives of the National Registration Scheme for Agricultural and Veterinary Chemicals (NRS);
- ▶ role of the APVMA in the achievement of the objectives of the NRS;
- ▶ specialist nature of the functions of the APVMA;
- ▶ technical qualifications and expertise required of the APVMA's operational staff to perform those functions; and
- ▶ degree to which access to chemicals contributes to the success of Australian agriculture, and to the return at farm gate.

The analysis should quantify direct and indirect costs and benefits including:

- ▶ the potential national benefits to Australian agriculture of collocating the APVMA with a leading agricultural science research university, the University of New England (UNE), which is also host to a number of specific animal husbandry-related research centres and organisations;
- ▶ how the move might affect the APVMA's relationships and work with its key stakeholders and clients, including chemical companies, academic institutions and producers who use agricultural and veterinary chemicals and what actions can be undertaken to mitigate any concerns;
- ▶ the potential to leverage Armidale's extensive NBN infrastructure for the APVMA's increasing use of electronic registration and other electronic processes in dealing with its clients;
- ▶ possible greater relevance for the regulator through its proximity to the end users of agvet chemicals and improved understanding of their need for timely access to safe chemicals, rather than physical proximity to multinationals' Australian head offices that can change;
- ▶ UNE's track record in attracting high quality academic and research staff, and likely capacity to support recruitment of research, technical and other expert staff to the APVMA, as needed;
- ▶ premises to accommodate the APVMA in Armidale (including fit out), taking into consideration the Commonwealth Property Management Framework and associated Resource Management Guides (RMGs) including best practice approaches such as those outlined in the RMG 502 and RMG 503;
- ▶ potential for lower accommodation costs for offices and staff over time (costing over 10-20 years) from location in Armidale compared to Canberra (where the future APVMA; accommodation arrangements might necessitate changed or upgraded premises). This will also account for the Canberra accommodation lease tail cost;
- ▶ transferring equipment, staff and their families from Canberra to Armidale, including any additional recruitment and staffing costs and relinquishing accommodation space in Canberra and fit-out (if applicable);
- ▶ any potential effects on the delivery of the APVMA's legislated functions;
- ▶ the scale of the potential economic benefits to Armidale and its surrounding New England region of hosting the APVMA;
- ▶ the scale of the potential loss of the APVMA from the economy of Canberra; and
- ▶ any other benefits or costs identified during the analysis.

The analysis should outline the key risks of relocation including:

- ▶ minimising any loss of technical expertise to the APVMA, likely timeframes and strategies for replacing staff and returning staff levels to full capacity;
- ▶ maintaining continuity of the APVMA's services during relocation; and
- ▶ supporting the APVMA's capacity to deliver the reform agenda expected by Government.

The analysis should also outline whether there are effective mitigation strategies or plans that could address identified risks.

The analysis, including risk mitigation strategies, should take the form of a report to the Department.

Appendix B Stakeholders consulted

Stakeholder organisation	Representative
Accord Australasia	▶ Dusanka Sabic (Regulatory Reform Director at Accord Australia)
NSW Government	▶ Adam Marshall (Member for Northern Tablelands)
Apple and Pear Australia and Voice of Horticulture	▶ Angus Crawford (Technical Manager at Apple and Pear Australia)
Armidale Dumaresq Council	▶ Glen Wilox (General Manager) ▶ Harold Ritch (Economics Director) ▶ Tony Broomfield (Project Manager - Economic Development, Tourism & Marketing)
Australian Paint Manufacturers' Federation	▶ Richard Phillips (Executive Director-Australian Paint Manufacturer's Federation)
Cotton Australia	▶ Nicola Cottee (Research Direction & Stewardship Policy Officer, Cotton Australia)
CropLife Australia	▶ Matthew Cossey (Chief Executive Officer of CropLife) ▶ Alastair James (Policy Manager - Agchem Regulation and Stewardship, CropLife)
Feed Ingredients and Additives Association of Australia and Pet Food Industry Association of Australia	▶ John Aird (Executive Manager at the Feed Ingredients and Additives Association of Australia and the Pet Food Industry Association of Australia)
Meat and Livestock Australia	▶ Richard Apps (Program Manager Genetics Implementation & Sheep R&D, Meat and Livestock Australia)
Grain Growers Limited	▶ David McKeon (General Manager of Policy at GGL)
National Farmers Federation	▶ Chris Young (Manager of Rural Affairs at the NFF)
NSW Farmers Association	▶ Justin Crosby (Policy Director, NSW Farmers Association) ▶ Reg Kidd (Agvet chair, NSW Farmers Association)
Nufarm Australia	▶ Stephanie Leach (Regulatory Product Manager at Nufarm)
Plastics and Chemicals Industries Association	▶ Bernard Lee (Director of Policy and Regulation at PACIA)
Rice Growers' Association	▶ Andrew Bomm (Executive Director, Ricegrowers' association of Australia)
Sheepmeat Cooperative Research Centre	▶ James Rowe (Chief Executive Officer, Sheepmeat CRC)
University of New England Vice Chancellor, Prof. Annabelle Duncan	▶ Annabelle Duncan (Vice Chancellor and CEO, University of New England)
Veterinary Health Research	▶ Bruce Chick (Director and Specialist Veterinarian)
Veterinary Manufacturers and Distributors Association	▶ Jim Adams (President/Executive Director at VMDA)
Animal Medicines Australia and members	▶ Duncan Bremner (CEO, Animal Medicines Australia) ▶ Michael Wright (Director - Corporate Affairs and Regulatory Policy, Animal Medicines Australia) ▶ Jessica Ramsden (Elanco Animal Health) ▶ Michael Pearce (Jurox) ▶ Cate McPherson (Bayer) ▶ Peter Morris (Vetoquinol) ▶ Gavin Hall (De Groot Consulting) ▶ Anjali Kallianpur (MSD Animal Health) ▶ Robert Pottie (Elanco Animal Health) ▶ Stephen Neutze (Virbac) ▶ Krishanthi Balakrishnan (Zoetis) ▶ Phil Lehrbach (Zoetis)

Appendix C APVMA staff survey results

A survey of APVMA staff was undertaken to gather data to inform the assumptions used in the cost benefit analysis, risk assessment and the measurement of economic impacts. The survey was sent to all APVMA staff including some staff on leave (a total of 199 staff). The survey was completed by 170 staff, representing a response rate of 85 per cent. The survey was open from 16 May 2016 to 23 May 2016.

The following tables outline the responses to the survey questions asked of APVMA staff. It is noted that these results have been used across the three elements of the study to provide a basis for assumptions, evidence and inform analysis.

Area and level

Area of work	APS 1-4	APS 5,6 & EL 1	EL 2 and SES	Total	%
Regulatory Scientists - Risk Managers Pesticide	0	25	5	30	17.6%
Regulatory Scientists - Risk Managers Vet Med	1	12	3	16	9.4%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	0	21	6	27	15.9%
Legal, Compliance, Licensing	2	16	6	24	14.1%
CMAU, Corporate	15	51	7	73	42.9%
Total	18	125	27	170	100.0%
Percentage	10.6%	73.5%	15.9%	100.0%	

Contract arrangements

Area of work	Employee	Contractor
Regulatory Scientists - Risk Managers Pesticide	94%	6%
Regulatory Scientists - Risk Managers Vet Med	97%	3%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	94%	6%
Legal, Compliance, Licensing	93%	7%
CMAU, Corporate	96%	4%
Total	94%	6%

Employment status

Area of work	Full time employee	Part time employee
Regulatory Scientists - Risk Managers Pesticide	97%	3%
Regulatory Scientists - Risk Managers Vet Med	94%	6%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	85%	15%
Legal, Compliance, Licensing	92%	8%
CMAU, Corporate	90%	10%
Total	91%	9%

Length of service

Area of work	0 - 7 years	8 - 15 years	16 - 23 years
Regulatory Scientists - Risk Managers Pesticide	50%	33%	17%
Regulatory Scientists - Risk Managers Vet Med	50%	31%	19%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	48%	37%	15%
Legal, Compliance, Licensing	63%	17%	21%
CMAU, Corporate	70%	21%	10%
Total	60%	26%	14%

Willingness to relocate

Area of work	Yes	Maybe	No
Regulatory Scientists - Risk Managers Pesticide	10%	7%	83%
Regulatory Scientists - Risk Managers Vet Med	0%	6%	94%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	0%	15%	85%
Legal, Compliance, Licensing	0%	29%	71%
CMAU, Corporate	1%	11%	88%
Total	2%	13%	85%

Reasons for unwillingness to relocate (note n=166)

Reason	Number of staff
My partner will/may have difficulty in finding equivalent work	123
There are limited opportunities for future employment progression	112
I have strong ties to the Canberra region	108
I have extended family responsibilities or receive assistance from family/friends in this area	84
I don't want to move children/dependents out of current or intended school	72
I have concerns about the transport links to/from the location	70
I have concerns about living in a regional area	60
I have concerns about the availability of suitably priced real estate (rent or buy)	65
The proposed region does not support my cultural/community requirements or responsibilities	39
I rely on specialist medical or other support services not available in the proposed region	34
My family requires a special needs school/program(s)	17
I know nothing about Armidale	17
N/A / Not willing to move	6
Family business in current location	4
Issues with shared custody of children	3
I have concerns about the cost of relocating	3
Limited education opportunities	3
Other	5

Support impacting decision to relocate (note n=27)

Type of assistance	Number of staff
Assistance with relocation costs	24
Assistance with temporary accommodation	20
Assistance with general relocation logistics	21
Assistance in renting out my property in the Canberra Region	13
Assistance with the costs associated with selling my home in the Canberra region	11
Assistance with school placement of children dependents	4
Assistance with long term accommodation	1
Assistance in finding employment for spouse/ partner	4
Other	4
N/A	4

Time required to prepare for relocation

Time	Percentage of staff
Less than 3 months	3%
3 months	5%
6 months	12%
9 months	4%
1 year	30%
18 months	1%
2 years+	5%
Not applicable/Don't intend to move*	34%
Dependent on external factors	5%
Other	1%

* This relates to the percentage of respondents who selected 'Not applicable/Don't intend to move'. The respondents have suggested that they do not require time to prepare for relocation as they do not intend to move.

Ability to transfer to similar paid role (note n=166)

Area of work	Yes	No
Regulatory Scientists - Risk Managers Pesticide	85%	15%
Regulatory Scientists - Risk Managers Vet Med	94%	6%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	85%	15%
Legal, Compliance, Licensing	83%	17%
CMAU, Corporate	92%	8%
Total	89%	11%

Intention to retire

Area of work	Yes	No	Not sure
Regulatory Scientists - Risk Managers Pesticide	7%	90%	3%
Regulatory Scientists - Risk Managers Vet Med	0%	94%	6%
Regulatory Scientists - Technical Specialists, Office of the Chief Scientist	4%	89%	7%
Legal, Compliance, Licensing	8%	79%	13%
CMAU, Corporate	4%	79%	16%
Total	5%	84%	11%

Spouse/partner employment status

Employment status	Percentage
My spouse/partner is employed full time	73%
My spouse/partner is employed part time	7%
My spouse/partner is employed on a casual basis	1%
My spouse/partner is not employed	4%
I do not have a spouse/partner	9%
Prefer not to say	6%
Total	100%

Appendix D Armidale residential market

This Appendix provides a high level overview of the residential market in Armidale. The purpose of this analysis is to determine whether there is sufficient capacity to absorb an additional 189 people (being the quantum of the APVMA workforce).

The information contained in this section is supplementary to the commercial real estate cost analysis in section 3.3.1.3 of this report.

Key market indicators

Table 41: Key market indicators

Year	Annual Est. Resident Population Growth	Employment Growth	Median House Price	Median House Price Growth	Median Unit Price	Median Unit Price Growth	Residential Building Approval Growth*
2015	0.04%	0.02%	\$335,000	4.69%	\$255,000	10.87%	-0.33%
2014	-0.21%	-0.25%	\$320,000	0.15%	\$230,000	-10.51%	1.44%
2013	0.25%	-0.10%	\$319,509	10.18%	\$257,000	12.72%	-0.16%
2012	0.56%	-0.53%	\$290,000	1.75%	\$228,000	9.09%	-0.63%
2011	0.49%	3.16%	\$285,000	-1.21%	\$209,000	-10.30%	-50.48%

Source: RP Data 2016; Australian Bureau of Statistics 2016; Economy ID 2016

*For the year ending 30 June

Population

Over the past 5 years, there has been limited population growth in Armidale, averaging an increase of 0.22%. This appears to be the trend for similar regional towns such as Cowra, Grafton and Mudgee.

According to statistics released by the Department of Planning and as published in the 'The Northern Daily Leader' (June 2014), the Armidale LGA is expected to experience growth of 6,500 people by 2031 at an annual rate of 1.1%.

Household ownership

According to ABS data, in 2011, 32.22% of homes in Armidale were fully owned, 28.00% mortgaged and 34.48% rented. The proportion of homes fully owned, mortgaged and rented in 2006 was similar to that experienced in 2011.

Employment growth

Over the past 5 years, employment growth has remained flat - directly correlated with the low population growth.

House prices

Over the past 5 years, growth in the median house price has been volatile with a low of -1.21% in 2011 and a high of 10.18% in 2013. As at June 2016 and according to RP Data, growth in the median house price was 4.48%.

Unit prices

Over the past 5 years, growth in the median unit price has been volatile. As at June 2016, median unit prices were recorded to be -17.65%, well below the national median trend of 4.70% for the year to March 2016 (RDP Nationwide Research, 2015).

Rental vacancies and properties for sale

According to Domain, as at June 2016, there were approximately 170 houses and 64 apartments for rent, whilst 290 houses and 38 apartments were available for sale.

Dwelling approvals

The number of dwelling approvals in Armidale decreased by 0.33% in 2015 (Economy ID, 2016). Given the current oversupply of residential dwellings in Armidale, approvals are expected to continue to decrease in the short term.

Residential development pipeline

The following table summarises unit developments in Armidale, as at May 2016.

Table 42: Unit development sin Armidale (as at May 2016)

Street Address	Suburb	No. Units	Est. Value	Floor Area	Owner	Start Date	Status	Project Stage
22 Uralla Road	Armidale	17	\$5,264,000	1,900m ²	Private	30 Sep 2016	Deferred	Development Approval
51 Kirkwood Street	Armidale	8	\$2,740,000	3,150 m ²	Private	25 Oct 2016	Deferred	Development Approval
2-4 Stephen Street	Armidale	6	\$1,330,000	-	Private	15 Apr 2016	Possible	Development Approval
85 Barney Street	Armidale	3	\$1,100,000	1,240 m ²	Private	7 Jun 2016	Possible	Development Approval
20 Mayfield Avenue	Armidale	3	\$650,000	689 m ²	Private	2 Mar 2015	Commenced	Construction over half completed
8 Peterson Drive	Armidale	3	\$350,000	-	Private	25 Sep 2016	Possible	Development Application
124 Taylor Street	Armidale	-	\$10,000,000	2,150 m ²	Private	26 Nov 2016	Possible	Development Approval
161 Markham Street	Armidale	-	\$962,000	-	State (Land and Housing Corporation NSW)	1 Jun 2015	Firm	Contract Let
287 Rusden Street	Armidale	-	\$993,000	-	State (Land and Housing Corporation NSW)	1 Jun 2015	Firm	Contract Let

Source: Cordell Connect 2016

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