

# Chapter 2

## Background and current challenges

2.1 This chapter discusses the importance of the beekeeping and pollination service industries from a food security, environmental and financial point of view as well as the current challenges facing these industries.

### **Food security, environmental and financial importance of the beekeeping and pollination service industries**

2.2 The committee considered a range of evidence relating to the importance of bees to food security and the corresponding financial impact this has.<sup>1</sup> Many submitters were keen to elevate the level of awareness among the public, policy makers, and food producers of the importance of bees and what may be lost if some of the threats to bees are realised.<sup>2</sup>

#### *Importance for food security*

2.3 The United Nations Committee on World Food Security describes food security as being 'when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.'<sup>3</sup>

2.4 Australia enjoys good food security generally and also has the capacity to export significant volumes of food and contribute to the food security of other nations. However this does not mean that Australia is not presented with threats to current food security, as noted by the Prime Minister's Science Engineering and Innovation Council in 2010:

...if our population grows to 35–40 million and climate change constrains food production, we can expect to see years where we will import more food than we export. We are now facing a complex array of intersecting challenges which threaten the stability of our food production, consumption and trade...<sup>4</sup>

#### *Importance of beekeeping and pollination services*

2.5 The main way in which bees contribute to food security is through pollination of crops and plants. Pollination enables a plant to bear fruit and seeds. The pollination

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- 1 NSW Apiarists' Association, *Submission 58*, pp 5–8; Rural Industries Research and Development Corporation, *Submission 11*, p. 1; Capilano Honey Limited, *Submission 39*, p. 3; CSIRO, *Submission 48*, pp 5–6; Crop Pollination Association Inc., *Submission 14*, pp 2–3.
  - 2 Mr Rod Yates, *Submission 12*, p. 7; Victorian Apiarists' Association Inc., *Submission 40*, p. 7; Mr Gary Montgomery, *Submission 43*, p. 3; Beechworth Honey Group, *Submission 52*, p. 2.
  - 3 United Nations Committee on World Food Security, <http://www.fao.org/cfs/cfs-home/en/>, (accessed 27 March 2014).
  - 4 The Prime Minister's Science, Engineering and Innovation Council, *Australia and Food Security in a Changing World*, 2010, p. 1.

process involves the transfer of pollen, from the male part of a plant (in flowers, this is the 'stamen') to the female part of the plant (the 'carpel').<sup>5</sup> Pollination is important for many fruit, nut, vegetable, legume and seed crops. Insects that contribute to pollination by transferring pollen include bees, butterflies, moths and flies<sup>6</sup> with the honey bee the most frequent visitor to many crop species.<sup>7</sup> These bees include feral bees and managed bees which either intentionally or coincidentally pollinate crops.

2.6 The Food and Agriculture Organisation of the United Nations (FAO) estimates:

...that out of some 100 crop species which provide 90% of food worldwide, 71 of these are bee-pollinated. In Europe alone, 84% of the 264 crop species are animal pollinated and 4 000 vegetable varieties exist thanks to pollination by bees. The production value of one tonne of pollinator-dependent crop is approximately five times higher than one of those crop categories that do not depend on insects.<sup>8</sup>

2.7 The contribution of bees and other pollinators to pollination depends on the type of crop. In addition to increasing the yield, pollinators can also increase the quality of many crops and reduce agricultural inputs, such as water and time. Pollination also has significant benefits for animal feed:

Pollination can also impact the animal production sector because of the importance of insect pollinated crops as fodder. Legumes, such as clovers, are important as a dietary nitrogen source for livestock, and many legumes benefit from insect pollination. Bee pollination can influence the persistence of clover in pasture, therefore affecting grazing quality.<sup>9</sup>

2.8 The yield of some crops can be increased by up to a factor of four with efficient pollination. As a result, the environmental benefits are associated with reductions in the required agricultural inputs, such as water, soil, chemicals, and preparation of land.<sup>10</sup>

### ***Financial importance***

2.9 The financial importance of beekeeping can be considered in two parts. One part is the direct products from the bee keeping industry, including honey, wax and other hive products. In 2010 the global production of honey was 1.54 million metric tons. In 2011, global imports of honey accounted for 0.38 million metric tons

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5 The plant pollination process, <http://www.buzzaboutbees.net/plant-pollination-process.html>, (accessed 2 June 2014).

6 United Nations Environment Programme, *Global Honey Bee Colony Disorders and other Threats to Insect Pollinators*, 2010, pp 1–2.

7 CSIRO, *Submission 48*, p. 6.

8 United Nations Environment Programme, *Global Honey Bee Colony Disorders and other Threats to Insect Pollinators*, 2010, p. 1.

9 CSIRO, *Submission 48*, p. 5.

10 Crop Pollination Association Inc., *Submission 14*, p. 3.

with a value of US\$1.2 billion.<sup>11</sup> The second part is related to crop pollination by bees which has a greater financial output than direct bee products:

The contribution of pollinators to the production of crops used directly for human food has been estimated at €153 billion globally, which is about 9.5% of the total value of human food production worldwide.

It is problematic to estimate the global economic value of the pollination services provided by managed species, as it is difficult to know if crops have been pollinated by managed or wild individuals. Nevertheless, recent estimates range between €22.8 to 57 billion, including apiculture markets and particularly all cash-crop yields.<sup>12</sup>

2.10 The demand for pollination services has risen by over 300 per cent in 50 years. This suggests that economic globalisation, rather than biological factors, drives the dynamics of both the global managed honey bee population and the demand for agricultural pollination services.<sup>13</sup>

2.11 In Australia the honey bee industry includes 12 250 registered beekeepers operating 524 000 hives. Approximately 340 000 of these hives are managed by about 1650 commercial beekeepers. Australia's annual production of honey typically varies between 20 000 and 25 000 tonnes. Annual honey yields per hive in Australia are among the highest in the world, due to the relatively large amounts of nectar produced by Australia's native flora and the tendency of the Australian honey bee industry to focus on honey production rather than pollination services.<sup>14</sup>

2.12 Honey and other hive products generate \$70 – 90 million a year in Australia.<sup>15</sup> Financial estimates for the contribution to crop production by pollination services included a commonly quoted figure of \$4–6 billion per annum,<sup>16</sup> however the Department of Agriculture cited a 2003 estimate of \$0.6 – 1.7 billion.<sup>17</sup> A number of submitters and witnesses identified increasing demand for honey locally and for

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- 11 US AID Capacity to Improve Agriculture and Food Security, *The world market for honey*, September 2012, pp 1–2, [http://www.fintrac.com/cpanelx\\_pu/Ethiopia%20CIAFS/12\\_06\\_4949\\_CIAFS%20\\_1%20Honey%20Final%20Oct%202011.pdf](http://www.fintrac.com/cpanelx_pu/Ethiopia%20CIAFS/12_06_4949_CIAFS%20_1%20Honey%20Final%20Oct%202011.pdf), (accessed 31 March 2014).
- 12 United Nations Environment Programme, *Global Honey Bee Colony Disorders and other Threats to Insect Pollinators*, 2010, p. 2.
- 13 M. A. Aizen and L. D. Harder, *Current Biology* 19, 9 June 2009, pp 915–918.
- 14 Department of Agriculture, *Submission 79*, pp 1–2.
- 15 Department of Agriculture, *Submission 79*, p. 2.
- 16 House of Representatives Standing Committee on Primary Industries and Resources, *More than Honey: the future of the Australian honey bee and pollination industries*, May 2008, p. 1.
- 17 Department of Agriculture, *Submission 79*, p. 4.

export, and pollination services due to the expansion of pollination dependent crops such as almonds.<sup>18</sup>

2.13 The majority of plants (measured by volume) produced for human consumption and animal feed in Australia are crops such as wheat, barley and rice, which self-pollinate. In contrast, 65 per cent of horticultural and agricultural crops (measured by number) introduced into Australia since European settlement, require honey bees for pollination.<sup>19</sup> The dependence on honey bee pollination of a range of crops is shown in Appendix 3.

2.14 The CSIRO provided some examples of high value crops which rely on managed pollination to varying degrees. The Australian almond and apple industries, worth \$331 million and \$464 million per annum respectively, are 100 per cent dependent on bees for pollination. In contrast, canola is a crop that is worth \$1.8 billion to the Australian economy and is routinely grown without managed pollinators, but a better yield is produced when pollinators are provided.<sup>20</sup>

2.15 The honey bee industry also offers downstream benefits to other industries in the supply chain<sup>21</sup> with food manufacturing reliant on the availability of ingredients such as:

- honey or honey derived products;
- plant food products (e.g. fruits, vegetables, nuts) which rely on the pollination services of the honey industry to maintain production from season to season; and
- dairy, meat and protein products derived from grazing farm animals foraging on introduced pasture grasses (e.g. clover, legumes, lucerne) reliant on honey bees for pollination.<sup>22</sup>

2.16 The committee is also aware of arguments that there are gaps in understanding how well feral and managed honey bees contribute to crop pollination in Australia, due to inconclusive data and a lack of Australian specific data:

Apart from a relatively small number of highly pollination-responsive and specialist industries, such as almonds and seed crops where pollination is well managed, it is likely that the importance of insect pollination is not

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18 Dr Benjamin McKee, *Committee Hansard*, 20 May 2014, p. 48; Australian Honey bee Industry Council Inc., *Submission 63*, p. 4; NSW Apiarists' Association, *Submission 58*, pp 5–8; Mr Warren Jones, Jones's Honey Comb Australia, *Submission 45*, p. 1.

19 CropLife Australia, *Submission 54*, p. 1.

20 CSIRO, *Submission 48*, p. 5.

21 Australian Food and Grocery Council, *Submission 51*, p. 4; When Bee Foundation Ltd, *Submission 65*, p. 9.

22 Australian Food and Grocery Council, *Submission 51*, p. 4.

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fully appreciated and as a result is not optimally managed by the majority of producers.<sup>23</sup>

### ***Committee view***

2.17 Evidence considered by the committee indicates that there is potential for bees to be used as pollinators to deliver an even greater yield for some crops. The committee considers that honey and other hive products form a small but important part of Australia's agricultural production, and notes the growing importance of pollination services that honey bees perform, including the ability to increase productivity and crop yield.

2.18 The committee also notes that, as recently as 20 June 2014, US President Barack Obama issued a memorandum directing US government agencies to take further steps to protect and restore these industries because of their critical contribution to the economy and environment. This action includes:

- The Department of Interior and United States Department of Agriculture (USDA) joining 45 state governors in issuing Pollinator Week Proclamations, publicly acknowledging the vital services that pollinators provide;
- The Environment Protection Agency releasing guidance designed to help scientists accurately assess the potential risks that different pesticides may pose to bees; and
- As part of its Conservation Reserve Program, the USDA has announcing an \$8 million initiative to provide funding to farmers and ranchers who will establish new pollinator habitats on agricultural lands.<sup>24</sup>

### **Current challenges facing the beekeeping industry and its future sustainability**

2.19 The section below discusses the current challenges facing the Australian beekeeping industry.

#### ***Effect of chemical use on bees***

2.20 Managed, feral and wild bees are exposed to a number of chemicals found in pesticides and herbicides that are used in agriculture, horticulture, and apiculture.<sup>25</sup> When used alone these chemicals can affect honey bees, however their combined toxicity may be even more harmful.<sup>26</sup>

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23 Rural Industries Research and Development Corporation, *Pollination Aware: The Real Value of Pollination in Australia*, August 2010, p. vii.

24 White House blog, online: <http://www.whitehouse.gov/blog/2014/06/20/new-steps-protect-pollinators-critical-contributors-our-nation-s-economy>.

25 Agriculture is a general term to refer to the deliberate cultivation of crops as well as animal farming, usually on extensive pieces of land on a large scale. Horticulture refers to plant cultivation only, and apiculture is a technical term for beekeeping.

26 NSW Apiarists' Association, *Submission 58*, p. 19.

2.21 Chemical companies wishing to register a product for sale and use in Australia are required to provide data to the Australian Pesticides and Veterinary Medicines Authority (APVMA) supporting the safety and efficacy of the product.<sup>27</sup> Once approved for use, the APVMA manages the registration of pesticides under Commonwealth legislation, and state and territory legislation regulates the use of those registered pesticides.

2.22 The Commonwealth *Agricultural and Veterinary Chemicals (Code) Act 1994* controls the import or manufacture of pesticides, their packaging, registration, labelling, wholesale supply, and retail supply to the end user.<sup>28</sup> States and territories regulate the post retail sale, transport, storage, use and disposal of pesticides once they are in the possession of the end user.<sup>29</sup>

2.23 Concerns were raised with the committee that data provided to the APVMA in support of chemical registration is not independently verified, nor are tests conducted to assess the effect of prolonged exposure of these chemicals on native bees and honey bees.<sup>30</sup>

#### *Neonicotinoid Pesticides*

2.24 Several submitters raised concerns about the use of neonicotinoid pesticides (neonics), which have been accused of contributing to the decline of honey bee populations in Europe and the United States of America.<sup>31</sup> However, neonics remain widely in use in Australia. Neonics were first used in the 1990s and designed to be systemic insecticides, meaning crop seeds are sprayed before planting. As the seed grows, intake of the chemical occurs, making the plant itself toxic to insects and providing protection from pests throughout the entire growth cycle and season.<sup>32</sup>

2.25 Some submitters observed that research conducted in the United Kingdom indicates that neonics ingested by bees can seriously impact their ability to collect food, even at very low levels of contamination.<sup>33</sup> However, this research has been

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27 Department of Agriculture, *The National Registration Scheme*, <http://www.daff.gov.au/agriculture-food/ag-vet-chemicals/regulation>, (accessed 27 May 2014).

28 Australasian Legal Information Institute, *Agricultural and Veterinary Chemicals Code Act 1994*, [http://www.austlii.edu.au/au/legis/cth/consol\\_act/aavcca1994382/sch1.html](http://www.austlii.edu.au/au/legis/cth/consol_act/aavcca1994382/sch1.html), (accessed 3 April 2014).

29 Department of Health Western Australia, *A guide to the use of pesticides in Western Australia*, 2010, p. 10.

30 Crop Pollination Association Inc (Vic), *Submission 14*, p. 5; Mr Warren Jones, *Submission 45*, p. 1; Victorian Apiarists' Association Inc, *Submission 40*, p. 4.

31 Neonicotinoid pesticides are a class of relatively new, neuro-active insecticides chemically similar to nicotine which affect the central nervous system of insects, which can result in paralysis and death.

32 The Xerces Society for Invertebrate Conservation, *Are Neonicotinoids Killing Bees?*, 2012, p. 3.

33 AUSVEG, *Submission 74*, p. 5.

questioned by chemical manufacturers and bee researchers on the basis that research conditions did not accurately replicate in-field conditions.<sup>34</sup>

2.26 The Tasmanian Farmers and Graziers' Association contends that APVMA data requirements for testing of insecticides are not adequate to properly consider possible routes and the extent of exposure of insect pollinators to pesticides or to assess the potential for adverse effects of pesticides on honey bees and other insect pollinators. On this basis the current testing system may not take account of the impact of neonics on pollinators.<sup>35</sup>

2.27 In support of this point, Ms Manu Saunders advised the committee that research has found that honey bees simultaneously exposed to an immune challenge and a dietary toxin, as found in neonicotinoid pesticides, died sooner than honey bees exposed to only one of the stressors alone.<sup>36</sup>

2.28 Crop Pollination Association Inc (Vic) suggest that there have been no independent long term studies on the effects of systemic pesticides on soil, water or bees. They also suggest that batch mixing of chemicals can be performed by farmers, which can increase the efficacy of these chemicals against insects and may kill bees at far lower dosage rates.<sup>37</sup>

2.29 The committee notes that there are international examples of restrictions on the use of neonics. From 2013, the European Commission suspended the use of neonics on flowering crops such as corn, canola, sunflowers and cotton for two years. The suspension restricts the use of three neonicotinoids for seed treatment, soil application and foliar treatment on bee attractive plants but does not apply to crops that are not attractive to bees.<sup>38</sup>

2.30 In March 2013, the United States Center for Food Safety, environmental groups, and beekeepers initiated legal action against the United States Environmental Protection Agency (USEPA) on the basis that the USEPA should have prevented the registration of two neonicotinoid pesticides alleged to be harmful.<sup>39</sup> The USEPA

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34 AUSVEG, *Submission 74*, p. 5.

35 Tasmanian Farmers & Graziers Association, *Submission 70*, p. 6.

36 Ms Manu Saunders, *Submission 3*, p. 3.

37 Crop Pollination Association Inc (Vic), *Submission 14*, p. 4.

38 European Union, *European Commission Press Release: Bees & Pesticides: Commission to proceed with plan to better protect bees*, [http://europa.eu/rapid/press-release\\_IP-13-379\\_en.htm?locale=en](http://europa.eu/rapid/press-release_IP-13-379_en.htm?locale=en), (accessed 20 January 2014).

39 Center for Food Safety, *Press Release: CFS, Beekeepers and Public Interest Groups Sue EPA Over Bee-Toxic Pesticides*, <http://www.centerforfoodsafety.org/press-releases/1911/cfs-beekeepers-and-public-interest-groups-sue-epa-over-bee-toxic-pesticides>, (accessed 3 March 2014).



accelerated the schedule for registration review of the neonicotinoid pesticides but has indicated the review will not be completed before 2018.<sup>40</sup>

2.31 The APVMA released a report in 2014, *Overview Report: Neonicotinoids and the Health of Honey Bees* (Overview Report), which noted that neonicotinoids offer a range of benefits when compared with older organophosphate and carbamate insecticides they have mostly replaced. The report advised that '...the scientific literature shows there is lack of consensus on the causes of honey bee declines, with a wide range of possible causes being actively investigated'.<sup>41</sup>

2.32 In the Overview Report the APVMA identified that Australia, unlike its German, British, Italian and United States counterparts, lacked a national honey bee colony survey scheme, and recommended trialling nationwide annual surveys of beekeepers about the health of their hives to be collated into a national report. A number of submitters support this concept, calling for an annual industry report to provide data on financial and physical industry production, trends and issues.<sup>42</sup>

2.33 The APVMA's Overview Report also noted Australia's lack of residue monitoring and suggested a similar project be established to analyse pesticide residues in various plant and bee media.<sup>43</sup>

#### *Committee view*

2.34 The committee considers that the Commonwealth could, in consultation with relevant industry participants, investigate the viability and benefits of establishing a national honey bee colony survey scheme with a view to collecting reliable data that monitors the long term health of the industry, as discussed above. Consideration could also be given to establishing a residue monitoring project to analyse pesticide residues in various plant and bee media, as recommended by the APVMA in its Overview Report, also discussed above.

#### **Recommendation 1**

**2.35 The committee recommends that the Government should, in consultation with relevant industry participants and with consideration to world's best practice, develop and establish a national honey bee colony survey scheme to collect reliable and comprehensive data about the industry and inform future decisions. The survey should include the establishment of a residue monitoring project to analyse pesticide residues in plant and bee media.**

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40 The Guardian, *US government sued over use of pesticides linked to bee harm*, <http://www.theguardian.com/environment/2013/mar/22/us-government-sued-pesticides-bee-harm>, (accessed 4 June 2014).

41 APVMA, *Overview Report: Neonicotinoids and the Health of Honey Bees in Australia*, February 2014, pp 2–3.

42 Beechworth Honey Group, *Submission 52*, p. 8; When Bee Foundation Ltd, *Submission 65*, p. 4; and Mr Dave Elson, *Submission 76*, p. 6.

43 APVMA, *Overview Report: Neonicotinoids and the Health of Honey Bees in Australia*, February 2014, pp 62–63.



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### *Spray drift from chemical application*

2.36 Another issue of concern raised with the committee during the inquiry is that of spray drift from the application of chemicals to crops. Spray application involves the use of spray equipment to distribute pesticides to crops in the form of active liquid ingredients at certain concentrations.<sup>44</sup> Pesticides applied as a spray of liquid droplets or as a fine dust can be carried by wind outside the intended area either during or after application.<sup>45</sup> As temperatures increase and the air becomes drier, increased evaporation allows droplets to remain airborne longer and may travel further than intended.<sup>46</sup>

2.37 According to the NSW Apiarists' Association, there have been a number of incidents where beekeepers have lost hives due to direct spraying or spray drift.<sup>47</sup> Mr Terry Brown advised the committee that bees in 120 of his hives died while being transported on the back of a truck after experiencing spray drift from a pesticide being applied to a cotton crop.<sup>48</sup> Mr Warren Jones provided another example of how spray drift may have impacted on bees:

Several beekeepers working river gum sites on the Macquarie River at Warren and Gin Gin suffered severe bee losses due to cotton spray 'drift' on to hives. The cotton crops are seed treated with a neonicotinoid at planting which is highly systemic. The cotton plants were then sprayed with Fipronil and Phenyl pyrazole which are also highly systemic. I suspect that there was a high probability that the two chemicals have combined within the cotton plants to provide a perfect storm for a major loss of bees to all the beekeepers involved. The EPA and APVMA need to start somewhere with independent evaluation.<sup>49</sup>

2.38 To address these concerns, Mr Stephen Targett suggested the implementation of 'no-spray zones' around beehives.<sup>50</sup>

### *Chemical labelling*

2.39 The committee heard evidence that some beekeepers believe that inappropriate use of chemicals and unclear labelling of chemical products is having an impact on bees, and contributing to bee deaths.<sup>51</sup> David and Wendy Mumford suggest that the quality of information on chemical labels should be improved, and that

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44 Queensland Government Department of Primary Industries and Fisheries, *Agricultural chemical users' manual*, p. 50.

45 APVMA, *Operating principles in relation to spray drift risk*, July 2008, p. 4.

46 Queensland Government Department of Primary Industries and Fisheries, *Agricultural chemical users' manual*, p. 56.

47 NSW Apiarists' Association, *Submission 58*, p. 19.

48 Mr Terry Brown, *Submission 57*, p. 2.

49 Mr Warren Jones, *Submission 45*, p. 1.

50 Mr Stephen Targett, *Submission 19*, p. 8.

51 Mr Stephen Targett, *Submission 19*, p. 9.

legislation be amended to regulate the inappropriate use of chemicals that are used contrary to their labelling instructions.<sup>52</sup>

2.40 The committee notes that this issue was considered in the More Than Honey report and that the government response agreed with recommendation 4 of that report which called for clearer labelling of chemicals to reduce the possible impact on bees. The committee also notes that the APVMA has been progressing work in relation to pesticide use generally, discussed above at paragraphs 2.31 to 2.33.

2.41 During its public hearing in Murray Bridge, South Australia, the committee heard that there was support for introducing penalties for chemicals used contrary to labelling (referred to as 'off-chemical use'):

If a particular chemical is dangerous to bees or beneficial insects that should be clear—'Do not spray while bees are foraging' and back that up. I think there should be warnings that fines could apply if you use this off-label procedure, because most of the bee kills are from off-label use.<sup>53</sup>

2.42 The Department of Agriculture advised the committee that it is progressing work to improve labelling of chemicals that may impact on bee health. In 2012, as part of a detailed investigation of the neonicotinoid insecticides the APVMA contracted the Australian Environment Agency Pty Ltd to:

...look at the labels of those Australian products which carry bee protection statements and review the consistency or inconsistency of the wording in those statements; and

...advise the APVMA if changes need to be made to standard statements and to existing labels.<sup>54</sup>

2.43 This investigation noted the wide variety of bee protection statements on labels and that bee protection statements are not consistently applied to registered insecticide products. The Department of Agriculture advised the committee that recommendations were considered at an APVMA workshop for regulatory stakeholders on 24 July 2013, and these outcomes and recommendations are currently being considered by the APVMA and the Department of Agriculture.<sup>55</sup>

### ***Committee view***

2.44 The committee will monitor the response to these outcomes and recommendations by the APVMA and the Department of Agriculture, and will follow developments in this area. The committee looks forward to being advised of this information by the relevant agencies when it becomes available.

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52 Mr David and Ms Wendy Mumford, *Submission 30*, p. 3.

53 Mr Trevor Monson, *Committee Hansard*, 15 April 2014, p. 49.

54 Department of Agriculture, *Submission 79*, p. 17.

55 Department of Agriculture, *Submission 79*, p. 17.

### *Access to floral resources*

2.45 During the inquiry the committee encountered a high degree of concern regarding the security of access to floral resources on public land,<sup>56</sup> with a number of submitters advising that there was confusion amongst beekeepers about the access available between the states and territories. Mr Benjamin Hooper of the South Australian Apiarists Association Incorporated explained the problem:

National parks are the typical ones, the biggest parks and so forth in this state that we rely on, but there are other land tenures. It is confusing to the average beekeeper as to who controls those titles. For instance, we have a memorandum of understanding with SA Water. However, a single land manager can take control and he can individually say that he does not want bees in that area, even though we have an understanding with the peak authority. It is just that it can be undermined so easily.<sup>57</sup>

2.46 Mr Ian Zadow called for clarification of procedures for access to public land for beekeepers<sup>58</sup> and Mr Dan Heard suggested that the Victorian government policy, *Apiculture (beekeeping) on public land standard operating procedure*, was a good model that could be used by other states and territories to assist with clarification about access to resources. This was seen as a strategy to reduce confusion.<sup>59</sup>

2.47 The committee notes that this issue was considered in the More Than Honey inquiry, with recommendation 5 of that report recommending that the Commonwealth, in conjunction with state and territory governments, establish guidelines for access to public and leasehold lands, including national parks, with a view to securing access to floral resources for the relevant industries.<sup>60</sup>

2.48 The Department of Agriculture advised the committee that the Commonwealth has raised these matters with state and territory governments through a discussion with state and territory agriculture agencies at a Primary Industry Standing Committee meeting on 11 September 2008.<sup>61</sup>

### *Committee view*

2.49 While the committee notes that the Commonwealth has raised this issue with states and territories, it considers more could be done to address confusion and

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56 Dr Doug Somerville, *Submission 28*, p. 1; Mr Robert Johnstone, *Submission 36*, p. 3; Capilano Honey Ltd, *Submission 39*, p. 5; Central Victorian Apiarists Association Inc, *Submission 53*, p. 3; NSW Apiarists' Association, *Submission 58*, p. 12; When Bee Foundation Ltd, *Submission 65*, p. 4; National Farmers' Federation, *Submission 66*, p. 6; Mr Kevin MacGibbon, *Submission 69*, p. 3; and Mr Dave Elson, *Submission 76*, p. 4.

57 Mr Benjamin Hooper, *Committee Hansard*, 15 April 2014, p. 1.

58 Mr Ian Zadow, AHBIC, *Committee Hansard*, 15 April 2014, pp 32–33.

59 Mr Dan Heard, *Submission 9*, p. 1.

60 House of Representatives Standing Committee on Primary Industries and Resources, *More than Honey: the future of the Australian honey bee and pollination industries*, May 2008, p. xviii.

61 Department of Agriculture, *Submission 79*, p. 17.

improve communication between beekeepers and relevant state and territory agencies. The committee also notes that access issues vary between states and territories. Evidence presented to the committee indicates that there is still a high degree of concern and confusion about access to floral resources and the committee reiterates the More Than Honey report recommendation that in states and territories which do not have them, guidelines be developed to clarify access to floral resources.

## **Recommendation 2**

**2.50 The committee recommends that the Government liaise with state and territory land management agencies to establish relevant guidelines to clarify access to public lands for beekeepers within the next 12 months.**

### ***Forest and Fire Management***

2.51 As beekeepers are reliant upon the natural environment to farm their bees, the committee was advised that forest and fire management practices can affect their success. Several submissions indicated that fire management issues are affecting the beekeeping industry, as some controlled burning programs do not take the requirements of beekeepers into consideration.<sup>62</sup>

2.52 The committee heard that controlled burning programs may lead to the loss of floral resources and biodiversity,<sup>63</sup> possibly rendering bee sites unusable for decades.<sup>64</sup> Crop Pollination Australia Inc suggests that fuel reduction burns are commonly planned to occur in spring which distorts the plant species within the forest or scrubland and reduces biodiversity.

Lack of biodiversity in the forest or scrubland is to the detriment of honey bees as well as native bees and marsupials. Different plant species will survive a spring burn to those of an autumn burn. Spring germinators are designed to survive a hot dry summer whereas autumn germinators are designed to survive frosty wet winters and are then established enough to survive a hot dry summer. Fire management of natural resources should alternate between spring and autumn burns.<sup>65</sup>

2.53 A number of submitters recommended burning programs be reassessed, in collaboration with the beekeeping industry. They also supported more research into the effectiveness of current fire practices, and the impacts on both native forest

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62 Mr Jonathan Williams, *Submission 33*, p. 1; Capilano Honey Ltd, *Submission 39*, p. 4; Victorian Apiarists' Association Inc, *Submission 40*, p. 4; Central Victorian Apiarists Association Inc, *Submission 53*, p. 5.

63 Capilano Honey Ltd, *Submission 39*, p. 4; Central Victorian Apiarists Association Inc, *Submission 53*, p. 5; Wheen Bee Foundation Ltd, *Submission 65*, p. 13; and Mr Moss MacGibbon and Mr Andrew McCallum, *Submission 67*, p. 3.

64 Capilano Honey Ltd, *Submission 39*, p. 4.

65 Crop Pollination Association Inc (Vic), *Submission 14*, p. 5.

biodiversity and honey bee industry, with a view to establishing honey bee friendly and sustainable environmental practices.<sup>66</sup>

2.54 The VFF State Beekeeping Branch suggested that beekeepers would be willing to participate in integrated fuel reduction planning, to help reduce the risk of their honey crops being compromised if burning occurs around or during flowering season.<sup>67</sup>

2.55 The committee notes that recommendation 7 of the More Than Honey report recommended that the Commonwealth government fund research into fire management practices that are more appropriate to the honey bee industry. The Department of Agriculture in its submission to the current inquiry, stated that as fire management is primarily the responsibility of state and territory authorities, this issue had been raised with relevant state and territory agencies during the meeting where access to floral resources was discussed,<sup>68</sup> referred to earlier at paragraphs 2.45 to 2.48.

### ***Committee view***

2.56 While the committee notes that the Commonwealth has raised this issue with states and territories it considers more could be done to consider the impact of fire management practices on the beekeeping industry. The committee encourages the Commonwealth government to liaise with states and territories to encourage integrated fire management practices which consider the needs of the beekeeping industry.

### ***Clear Fell Harvesting***

2.57 It was put to the committee that clear fell harvesting within the forestry industry and a gradual encroachment of clear fell<sup>69</sup> harvesting across licenced bee sites is depreciating native forest floral resources.<sup>70</sup> A number of submitters expressed concern that clear felling is also affecting natural resource security.<sup>71</sup>

2.58 The Victorian Apiarists' Association expressed concern about the security of lower elevation mixed species forests that provide critical summer and autumn pollens in preparation for winter pollination tasks:

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66 Mr Jonathon Williams, *Submission 33*, p. 1; Mr NJ & KD Fewster, *Submission 46*, p. 5; When Bee Foundation Ltd, *Submission 65*, p. 4; VVA Inc, *Submission 4*, p. 4; VVA Inc, *Submission 4*, p. 4; and VFF State Beekeeping Branch, *Submission 75*, p. 5.

67 VFF State Beekeeping Branch, *Submission 75*, p. 5.

68 Department of Agriculture, *Submission 79*, p. 17.

69 The Forest Practices Code defines clear felling as 'felling of all or nearly all the trees from a specific area in one operation'.

70 Victorian Apiarists' Association Inc, *Submission 40*, p. 33.

71 Mr NJ & KD Fewster, *Submission 46*, p. 5; Central Victorian Apiarists Association Inc, *Submission 53*, p. 4; When Bee Foundation Ltd, *Submission 65*, p. 13; Mr Moss MacGibbon and Mr Andrew McCallum, *Submission 67*, p. 3; and VFF State Beekeeping Branch, *Submission 75*, p. 4.

If the current rates of clear fell/ seed tree harvesting continue the Honey bee industry stands to lose a significant proportion of its available native forest resource over the next forty years...Having lost the mature forests that are harvested, studies have reported...species either fail to regenerate at all or a single opportunistic species favoured by the disturbance of a total loss of canopy cover, dominates the regeneration thereby diminishing the biological diversity and richness of the forest.<sup>72</sup>

### ***Committee view***

2.59 The committee considers that harvesting areas which overlay bee sites could be reviewed, and encourages state and territory land management authorities to consider this as part of their responsibilities in this area.

### ***International challenges***

2.60 While the terms of reference of the inquiry include international challenges facing the beekeeping industry, the committee was presented with little evidence in relation to this issue. One issue that was raised is that of bilateral and multilateral trade agreements and the possibility that honey, hive products and live bees are being excluded from trade agreements.

2.61 Honey exported from Australia can be subject to charges imposed by importing countries; yet according to the AHBIC, Australia does not impose tariffs on honey being imported from those countries or any other country.<sup>73</sup> The AHBIC's submission states that some typical tariffs Australian honey exporters are subject to include the European Union (17.3 percent), South Korea (253 percent), Japan (over 25 percent), China (15 percent) and India (60 percent).<sup>74</sup> In comparison, the Superbee Honey Factory advised the committee that New Zealand does not allow honey to be imported, in an effort to support their domestic industry and improve biosecurity.<sup>75</sup>

2.62 Capilano Honey Ltd observed that the recent Australia-South Korea Free Trade Agreement excluded honey '...which was very disappointing for industry considering the vast range of agricultural products included.'<sup>76</sup>

### ***Committee view***

2.63 While the committee did not receive a substantial amount of information relating to international and trade issues, the matter still deserves some discussion. The fact that honey and related products has not been considered in free trade agreement negotiations points to a lack of understanding or acknowledgement from

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72 Victorian Apiarists' Association Inc, *Submission 40*, p. 5.

73 AHBIC, *Submission 63*, p. 8; Apple and Pear Australia Limited, *Submission 24*, p. 3; Mr Gary Montgomery, *Submission 43*, p. 3; NSW Apiarists' Association, *Submission 58*, p. 4; Beechworth Honey Group, *Submission 52*, p. 6; Mr Warren Jones, *Submission 45*, p. 5.

74 Australian Honey Bee Industry Council Inc, *Submission 63*, p. 8.

75 Superbee Honey Factory, *Submission 6*, p. 1.

76 Capilano Honey Ltd, *Submission 39*, p. 5.

Government on how vital beekeeping and pollination services are to the agricultural sector.

### **Recommendation 3**

**2.64 The committee recommends that the Government ensure that beekeeping and pollination services are considered as an integral part of free trade agreement negotiations, and consider the impact current agreements have on the industry.**

#### *An ageing workforce*

2.65 One issue raised is that of an ageing workforce. The committee heard that there are few young people entering the profession and that there are limited opportunities for training and career development.<sup>77</sup> The committee notes the existence of a single, nationally recognised course offered in Australia through Vocational Education and Training.<sup>78</sup> The committee heard that while this is considered a comprehensive course, it could be strengthened as it lacks modules on biosecurity, marketing, business management and communication.<sup>79</sup>

2.66 To overcome a future shortfall of professional beekeepers, several submitters suggested that apprenticeship programs be made available to the beekeeping industry.<sup>80</sup>

The committee notes that the issue of an ageing workforce and the lack of formal pathways into the industry was discussed in the More Than Honey report.<sup>81</sup> However, the committee does not consider that it has been presented with sufficient evidence on this issue in order to make a clear recommendation. The committee notes, however, that a comprehensive approach to supporting the industry and recognising its importance on the part of government would help it to be seen as a valid career choice.

#### *State apiculture staff*

2.67 The committee heard that there are concerns about low numbers of state and territory government apiculture staff available to maintain biosecurity through inspections, uphold best management practice, enforce regulation and offer advice in

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77 NSW Apiarists' Association, *Submission 58*, p. 4.

78 Department of Industry, *My Skills*, <http://www.myskills.gov.au/courses/details?Code=AHC32010>, (accessed 19 May 2014).

79 When Bee Foundation Ltd, *Submission 65*, p. 12; NSW Apiarists Association, *Submission 68*, p. 16.

80 When Bee Foundation Ltd, *Submission 65*, p. 4; Mr Gary Montgomery *Submission 43*, p. 3.

81 House of Representatives Standing Committee on Primary Industries and Resources, *More than Honey: the future of the Australian honey bee and pollination industries*, May 2008, pp 180–201.



the field. It was put to the committee that current staff numbers are insufficient<sup>82</sup> for the scope of work,<sup>83</sup> as they may be engaged on a part time basis with little time for field work.<sup>84</sup>

2.68 Spurge Apiaries explained:

Due to funding cuts and the size of the industry in WA we no longer have Stock Inspectors in the field monitoring bad practises. The Apiculture Section within AgWA now only has a staff of two and is largely irrelevant to the wider industry. Should an outbreak of Varroa occur in WA resources would be severely tested.<sup>85</sup>

2.69 The AHBIC website states that apiary officers are allocated to states and territories in the following way: three officers in New South Wales and Victoria; four officers in Queensland; and one officer in each of South Australia, Western Australia, Tasmania and the Northern Territory.<sup>86</sup>

### **Honey production levy**

2.70 The Australian beekeeping industry currently pays a compulsory levy on honey production, which is used for research and development, and biosecurity. The honey levy and export charge funds the Honeybee Research and Development Committee of the Rural Industries Research and Development Corporation (RIRDC) and National Residue Survey testing of honey, with a small portion contributing to the Animal Health Australia Emergency Animal Disease Response Fund.<sup>87</sup> The committee heard that there is strong support for relevant research activities to be expanded.<sup>88</sup> The levy is administered by AHBIC and authorised under the same legislative framework which supports Australia's primary industries levies system; the

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82 Mr David and Mrs Wendy Mumford, *Submission 30*, p. 3; Victorian Apiarists' Association Inc Melbourne Section, *Submission 61*, p. 10; Lucerne Australia, *Submission 13*, p. 2; Mr Leo Kuter, *Submission 26*, p. 3; South Australian Apiarists' Association Inc, *Submission 4*, p. 2; Mr David Severino, *Submission 59*, p. 5.

83 Mr Leo Kuter, *Submission 26*, p. 3.

84 Mr David Severino, *Submission 59*, p. 5.

85 Mr Ken and Mr Mike Spurge, *Submission 68*, p. 3.

86 AHBIC, *Our Relationships*, <http://honeybee.org.au/organisation/our-relationships/>, (accessed 29 May 2014).

87 Department of Agriculture, *Honey Levy Information*, [http://www.daff.gov.au/data/assets/pdf\\_file/0004/183379/information-honey-levy.pdf](http://www.daff.gov.au/data/assets/pdf_file/0004/183379/information-honey-levy.pdf), (accessed 3 June 2014).

88 Mr Stephen Targett, *Submission 19*, p. 4; Mr NJ & KD Fewster, *Submission 46*, p. 8; Australian Food and Grocery Council, *Submission 51*, p. 5; Beechworth Honey Group, *Submission 52*, p. 7; Mr Rod Yates *Submission 12*, p. 7; Mr Kevin J MacGibbon, *Submission 69*, p. 3; AHBIC, *Submission 63*, p. 21; When Bee Foundation Ltd, *Submission 65*, p. 3.

*Primary Industries (Excise) Levies Act 1999 and the Primary Industries Levies and Charges Collection Act 1991.*<sup>89</sup>

2.71 The AHBIC is currently proposing to raise the honey production levy from the current 2.3c/kg to 4.6c/kg on 1 July 2015.<sup>90</sup> One of the purposes of the increase in the levy is to pay for biosecurity officers to operate in each of the states to help inform beekeepers how to manage pests and diseases.<sup>91</sup> However during the committee's hearing in Queensland Dr Whitten of the When Bee Foundation questioned how biosecurity activities had been previously funded.

Who paid for that before? The states, so the states were paying through their apiary offices for the service which now this small struggling industry is being forced to pay...What we have really got, when you look at the biosecurity situation, is the struggling beekeepers are footing the bill to solve problems not of their making and producing benefits which are captured by others.<sup>92</sup>

2.72 The committee was informed that current legislation does not permit statutory levies to be charged on services, and as such, the beekeeping industry is prevented from collecting levies (via the bee industry) related to the pollination services it provides to plant industries. According to a number of submitters, this means that one of the largest beneficiaries of the beekeeping industry, the pollination-dependant horticultural and agricultural plant industries, are not contributing to research and development or to biosecurity.<sup>93</sup>

2.73 A number of submitters urged the Commonwealth government to broaden the resource base for these vital activities by amending legislation to allow for the collection of a statutory levy, or some other financial contribution for pollination services.<sup>94</sup>

2.74 The committee notes that recommendation 25 of the More Than Honey report recommended that legislation be amended to allow for a levy on pollination services, and that voluntary contributions made by industry to research be matched by government funding. The committee understands that as pollination services do not fall within the definition of an animal or plant product under Schedule 27 of the *Primary Industries (Excise) Levies Act 1999 (Cth)* and Schedule 14 of the *Primary*

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89 Department of Agriculture, *Honey Levy Information*, [http://www.daff.gov.au/data/assets/pdf\\_file/0004/183379/information-honey-levy.pdf](http://www.daff.gov.au/data/assets/pdf_file/0004/183379/information-honey-levy.pdf), (accessed 3 June 2014).

90 AHBIC, *Honey Levy Reform and Increase*, <http://honeybee.org.au/programs/honey-levy-reform-and-increase/>, (accessed 21 May 2014).

91 Dr Maxwell Whitten, *Committee Hansard*, 20 May 2014, p. 20.

92 Dr Maxwell Whitten, *Committee Hansard*, 20 May 2014, pp 20– 21.

93 Dr Doug Somerville, *Submission 28*, p. 6.

94 When Bee Foundation Ltd, *Submission 65*, p. 6; Beechworth Honey Group, *Submission 52*, p. 25; Dr Doug Somerville, *Submission 28*, p. 6; Mr Moss MacGibbon and Mr Andrew McCallum, *Submission 67*, p. 3.

*Industries (Customs) Charges Act 1999 (Cth)*, an amendment to legislation is required to enable a levy on pollination services.<sup>95</sup>

2.75 In its response to the *More Than Honey* report, the Commonwealth government suggested that if Pollination Australia wished to establish a levy system, government would consider this proposal.<sup>96</sup> The committee at this point notes considerable criticism of Pollination Australia by several submitters and witnesses during the inquiry.

#### ***Committee view***

2.76 The committee strongly encourages AHBIC, Pollination Australia and the Commonwealth government to enter into discussions about the best way forward to allow the pollination industry to make a contribution for pollination services to research and development, and to biosecurity.

#### **Recommendation 4**

**2.77 The committee recommends that AHBIC, Pollination Australia and the Commonwealth government enter into discussions about the best way forward to enable the pollination industry to make a contribution for pollination services to research and development, and to biosecurity.**

#### ***Marketing the Industry***

2.78 The committee considered evidence to suggest that the beekeeping and honey industries could expand the way in which their products and services are marketed. The committee notes that the existing honey production levy lacks a marketing component to address international and domestic opportunities for growth. During its public hearing in Brisbane, the committee heard that marketing was often overtaken by day-to-day issues, and a lack of staffing.<sup>97</sup>

2.79 In comparison to the Australian industry, New Zealand markets its similar high quality honey to great effect, with the industry experiencing continual growth. Since 2009, the New Zealand Ministry for Primary Industries has produced a yearly publication which monitors apiculture trends across the country. It shows that registered beekeepers and hives have increased every year since 2005; the honey crop for 2012/13 was up 72 percent on the 2011-12 crop; and Canada's demand for New Zealand live bees exports also increased despite the country's strong dollar.<sup>98</sup>

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95 Government Response, House of Representatives Standing Committee on Primary Industries and Resources, *More than Honey: the future of the Australian honey bee and pollination industries*, August 2009, p. 4.

96 Government Response, House of Representatives Standing Committee on Primary Industries and Resources, *More than Honey: the future of the Australian honey bee and pollination industries*, August 2009, p. 5.

97 Mr Trevor Weatherhead, *Committee Hansard*, 20 May 2014, p. 33.

98 Ministry for Primary Industries, *Apiculture Report for 2013*, December 2013, pp 3–5.

***Committee view***

2.80 The trends from New Zealand may indicate that the Australian industry has potential for growth and could benefit from a similar marketing strategy. The committee considers that industry's efforts to capitalise on the reputation of Australia's high quality honey internationally and to promote the value of pollination services to farmers domestically should be increased. The committee encourages the beekeeping and pollination service industries to pursue support from relevant states and territories and Commonwealth agencies to expand its marketing expertise.

