

SUBMISSION TO THE INQUIRY INTO RURAL SKILLS TRAINING AND RESEARCH

(by a group committed to Australia's sustainable agriculture through a viable beekeeping industry)

This submission was prepared and submitted by a group of experienced Australian beekeepers, specializing in honey production, pollination services, stock improvement, queen breeding, artificial insemination and package bees. They were assisted by several apiary officers and researcher scientists interested in the sustainability of the honeybee industry; and in the viability of those farmers and horticulturists who depend on insect pollination to fertilise crops. (See appendix 1 for details of the group making this submission. Five of the current group were individual authors of submissions #11, 81, 83, 91 and 98. Contact point is Dr Max Whitten – see Appendix 1.)

1. Comment on submissions already received and published relating to the beekeeping industry

At the time of preparing this submission, the Inquiry had received six submissions relating to the beekeeping industry (#11, #79, #81, #83, #91 and #98). We support the thrust of each of these submissions and their recommendations. **The fact that this Inquiry has already attracted six submissions from a manifestly small industry should, in itself, indicate that some critical concerns are being flagged. If these concerns are not adequately addressed, the viability of a much larger section of the primary production sector, dependent on honeybee pollination, is under threat.**

The parlous state of beekeeping and crop pollination in the USA serves as a timely reminder of the serious threats facing Australian agriculture. As much as one third of the American diet comes from fruit and vegetables that are pollinated by the honeybee. The recent entry of the varroa mite, *Varroa destructor*, into the USA has caused the decimation of both feral colonies (near elimination in many States), while managed hive bees have suffered losses in excess of 70%. California produces 80% of the world's almonds and without the one million hives required annually to pollinate this crop, "California's US\$1billion/year almond industry will die" (Bee World, September 2005). The expanding almond industry in Australia will suffer a similar fate if appropriate Government intervention is not taken. The projected requirements for the expanding almond crop alone is 150,000 hives by 2010. This target may not be met without appropriate Government intervention. Furthermore, opportunities to enhance productivity of other crops such as cotton with improved honeybee pollination will go begging. For example, recent research in NSW showed an increase in lint production of 16% in a cotton crop pollinated by honeybees, the increased production was valued at \$220/acre for the crop.

Like the USA, Australian agriculture depends on exotic crops; and many of these require the exotic honeybee, *Apis mellifera*, for effective pollination. Honeybees co-evolved in the Old World in a biodynamic relationship with many food and seed crop plants essential for animal and human nutrition. That interdependency continues today throughout the world, wherever Europeans settled and brought with them plants and animals which comprise modern agriculture.

The true value of honeybees and commercial beekeeping, therefore, lies in the value added to the 60% of crops that require insect pollination. This impact is mediated in three ways: paid pollination services, free pollination services provided incidentally by honeybees from commercial and amateur hives; and pollination provided by feral bee colonies. **If these three pollination impacts were suddenly withdrawn, the immediate impact would be a loss to agriculture of some \$2 billion annually, and a loss of 11,000 jobs.** This conclusion was reached in the Centre for International Economics Study: “*Valuing honeybee pollination*” - A report for the Rural Industries Research and Development Corporation by Jenny Gordon and Lee Davis June 2003. RIRDC Publication No 03/077. RIRDC Project No CIE-15A).

If the **honeybee** was labeled the ‘**pollination bee**’ it would reflect more accurately its more important role for society – the honeybee as an efficient and effective pollinator.

In the USA, the foremost problems faced by beekeepers are pests and diseases of the honeybee; and there is no reason to suppose that these menaces wont eventually reach Australia. Australian beekeepers are facing an additional problem. They are increasingly being denied traditional access to some public land native floral sources on which commercial beekeepers depend for both honey production and the provision of hives for essential pollination services. The critical issue here is the maintenance of traditional access to conserved public land (e.g., parks, wilderness, flora reserves etc). The viability of the beekeeping industry depends on the returns that beekeepers derive from nectar collection and its ultimate sale as honey. Consequently, this critical industry’s viability depends on traditional access to native floral nectar sources.

Thus, improved skills, better education and strengthened research effort are required to protect Australian agriculture from experiencing the same difficulties that USA agriculture is currently experiencing due to a decline in its commercial beekeeping capability. These matters all impinge centrally on the Enquiries’ Terms of Reference.

The earlier submissions collectively define the problems facing Australian beekeeping and the diverse allied industries that depend on honeybee pollination. **The purpose of this further submission is to build on these earlier submissions and to provide more specific recommendations for consideration by the Inquiry.** We urge the Inquiry to accept our recommendations and to request the Government to provide the necessary financial support to implement them.

2. An important new economic study on the Beekeeping industry

We wish to draw to the Committee’s attention the publication on 14th September 2005 of an independent and authoritative study by the Centre of International Economics (CIE), entitled “*Future directions for the Australian honeybee industry*”. The study was funded under the Industry Partnerships Programme (IPP) of the Australian Department of Agriculture, Fisheries and Forestry (DAFF). Its findings were only available after the earlier submissions were completed. The CIE study and its conclusions are highly relevant to the Terms of Reference of this Inquiry.

Some key findings by the CIE study, pertinent to the Inquiry, include the following:

- “The industry has an overall gross value of production (GVP) \$65 million a year, with an estimated GVP of honey production of around \$50 million. Other products include, paid pollination services, beeswax production, queen bee and package bee domestic and export sales, pollen and propolis. **As such it could be classed as a relatively small industry, but its value to the rest of agriculture and the economy through pollination services and, potentially, the value of honey and honey products in medicinal uses, far exceeds the value based on GVP estimates.**”
- “**Estimates suggest honeybee pollination provides value within the economy of around \$1.7 billion per year.** If honeybee pollination were to suddenly stop (as might be the case with a disease outbreak), growers of honeybee-dependent crops and pastures would suffer and **the Australian consumer would find themselves without access to many of the major fruits, vegetables and some crops and pastures.**”
- “There are around 9600 registered beekeepers with around 500 000 hives However, over 70 per cent of hives are operated by commercial beekeepers with more than 200 hives. Most commercial apiarists operate between 400 - 800 hives but some have more than 3000 hives. **A commercial apiarist with around 20 bee sites on an occasional basis would require a foraging area of native flora of around 16 000 hectares per annum. This emphasises the dependence of beekeeping on native flora on public and private land.**”
- “About a third of honey produced is exported to over 38 countries. Key markets are the United Kingdom, Indonesia and other South East Asian countries, North America and Saudi Arabia. **Generally, honey imports are quite small but rose to 9000 tonnes in 2003 when there was a shortage of honey in Australia.** Australian honey is mostly high quality and commands a significant premium over honey from other countries.”
- “Queen bee breeding is quite specialised and there are growing markets, especially in North America for queen bees and package bees. **This sector of the industry is quite profitable and there are good prospects for expansion — the major constraint is the number of queen bee breeders.**”
- “**There is also a growing market for pollination services, especially with the expansion of the almond industry centred in South Australia and Victoria.**”
- **Key Industry strengths include:** high level of skills and enthusiasm of commercial beekeepers; high mobility - required for migratory beekeeping; freedom from varroa mite; diverse national flora; reputation for high quality product; good potential for medicinal uses of honey and honey products; through pollination services, the industry provides major benefits to the rest of agriculture; there is strong demand for these services; Industry has a good quality assurance program; Industry has good research capacity; **several highly skilled researchers but the industry needs to look to encouraging young researchers.**
- **Industry weaknesses include:** public relations between beekeepers and the public and with land managers could be improved; the industry lacks dynamics in selling its ‘good story’ image to the public and policy makers; many beekeepers are not vigilant on controlling endemic diseases especially American foulbrood (AFB); the high mobility of the industry is conducive to spreading of pests and diseases; hive productivity is not as high as it could be. There is scope for greater adoption of best management practices (BMPs); **the industry is ‘ageing’. Not many young people are attracted into the industry; and there is some reluctance to pass on skills in a formal way;** there is a lack of standards that are adhered to in provision of

professional pollination services; the industry is having difficulties in enhancing the supply of queen bees to meet growing demand.

- **Main threats include:** exotic incursions and reduced access to native flora; **an incursion of varroa mite or other serious exotic pests would devastate this industry.** This is undoubtedly the major threat faced by beekeepers; as the industry is highly dependant on native flora for about 70 per cent of honey production, **trends over the last decade of restricting beekeepers access to native conservation areas is also a huge threat to the industry** as the scope for alternatives is somewhat limited.
- **Other major threats include:** spread of American Foulbrood (AFB) through bad hive management and **state government agencies withdrawing resources from enforcing state legislation and regulations which are aimed at controlling AFB;** greater inappropriate use of antibiotics and chemicals to control foulbrood diseases could cause contamination and severely tarnish Australia's 'clean green image'; beekeepers image in managing environmental issues could be tarnished unless the industry adopts an environmental management system (EMS); threat of exotic incursions from some beekeepers illicitly importing material; rising fuel prices will affect profitability; and **loss of skills and talent as current generation of beekeepers and researchers retire.**
- **Key strategic directions for the future:** keep exotic diseases out; secure access to native floral resources; Queen bee breeding and improved productivity; marketing initiatives; and quality control.
- **Key educational strategies. Because of its central relevance to the Inquiry, the CIE conclusions are quoted in detail.** "Any formal education program developed to address the needs of the honeybee industry must be based off a detailed analysis on the expected future industry training and education requirements. This requires an understanding of both the current numbers and age structure of participants within the industry and how they might change in the future. Developing an education outlook for the industry should be a priority in order to remove any impediments to planning for ongoing industry growth.
Any formal education within the honeybee industry should be undertaken by registered educational organisations. This means the organisation must be able to demonstrate it employs qualified personnel, has the necessary beekeeping equipment and class resources, and that the course is accessible to the industry. This will place greater confidence in educational standards within the beekeeping industry and help promote the standardisation of courses and the transfer of skills. Educational training needs to be accompanied with promotional activities to develop an educational brand that represents quality and consistency and is recognised throughout the industry.
Educational programs should be standardised to ensure confidence and consistency, which will facilitate the transfer of qualifications and skills.
The industry needs to invest in developing its training capacity to ensure the necessary educational infrastructure is available. This includes investigating current training programs and the possibility of augmenting them to encapsulate the full skills set of the honeybee industry.
AHBIC should lobby the government for more educational funding, and provide advice to current and potential trainers on how to address various state requirements for funding.
Educating the government and public should address not only the perceived impacts beekeepers have on native flora and fauna but also the cost imposed on society by beekeepers using national forest. This will only be effective if the industry has a nationally recognised code of conduct relating to the use of national forests."

3. Overview of the Australian beekeeping industry

The earlier 'beekeeper/industry' submissions drew attention to a number of concerns facing the beekeeping industry that are shared widely by other primary producers and the rural community. The submissions to date also noted some problems and challenges that are peculiar to the beekeeping industry, or at least more accentuated in the beekeeping industry. These concerns are clearly articulated in the 2005 CIE study whose principal findings have been cited above.

Beekeepers, like other primary producer groups, are an ageing community. They are usually family enterprises which engage few paid workers; and the nature of the work of migratory beekeeping does not lend itself to larger commercial operations. Scaling up is not an easy option for this industry; nor is there much prospect of further technical innovations that are likely to change the nature of beekeeping. The work is physically hard, the hours are long and irregular; and the remuneration poor considering the work load and the capital invested in necessary plant and equipment. Beekeeping is as much a way of life, or a vocation, as a profession.

Honey producers, through voluntary and statutory levies, have historically been the principal economic drivers of all industry programs, including the funding of the Industry National Peak Body, its State Association affiliates, research, product promotion, residue monitoring, etc. Current market forces limit the capacity to expand or create new programs. Decline in the viability of commercial honey producers would further reduce this capacity; and critically, from the national interest perspective, reduce the capacity of beekeepers to maintain colony numbers and maintain, let alone expand, crop pollination services.

Like many other primary producers, a professional beekeeper needs to be an expert in many fields – perhaps more so than a majority of other primary producers. They need to have a sound understanding of the behaviour of this social insect; they need to appreciate the idiosyncrasies of the different races of honeybee; they need the skills and knowledge of a veterinarian to identify and deal with pests and diseases; they need a sound understanding of the flora and the physiology of nectar production and pollination; they require a basic understanding of machinery and how to remedy malfunctions, often in remote locations. They need the mental resourcefulness of a shepherd since migratory/nomadic beekeeping demands days of solitude. And they need sound management skills to run a small commercial enterprise and cope with complex bureaucratic issues such as GST.

Australian beekeepers have also contributed substantially over the 20th century to conservation issues both in influencing policy and, at a practical level, by promoting the retention of natural habitats through preservation of State Forests and National Parks. The Industry, through its then Peak Body, The Federal Council of Australian Apiarists Associations (FCAAA) during the 1980s formulated a practical and successful policy on access to public lands for migratory beekeeping. The policy, later revised and adopted by AHBIC, includes a draft code of practice for the management of migratory apiaries in conserved forests, adaptable for use by industry in respective States. Beekeepers, generally, have been enthusiastic supporters of the Rural R&D program revamped by the then Minister for Agriculture, The Hon. John Kerin.

Successful commercial beekeepers acquire their extraordinary repertoire of skills in either of two ways – wisdom and experience passed from one generation to the next in beekeeping families. Or as amateur beekeepers who eventually turn professional once they have learned from personal trial and error, shared experiences with other beekeepers, the literature, attending conferences and training courses related to beekeeping. Likewise, professional beekeeping families continue to learn from relatives and other professionals at annual conferences, the literature and attending the few specialist courses relating to beekeeping.

In the late 1980's the Honeybee R&D Council, recognized that there was a substantial difference in performance of the best and poorest performing beekeepers. It recognised that there was the risk of substantial know-how being lost forever as these top performers retired. Consequently, the Council funded a series of surveys of best beekeeping practice in each of the States. These were published and made available to the beekeeping industry as a means of capturing and making available to future generations the collective wisdom of successful and retiring beekeepers. We return, under recommendations, to the idea of digitizing this body of 'best practice' and its regular updating as a valuable resource for curricula in training courses for tomorrow's beekeepers.

It might be argued, that given the small number of professional beekeepers and the modest value of the honey crop (and other bee products such as wax, pollen, propolis etc), Australia could afford to sacrifice its bee keeping industry and resort to importing honey and other bee products.

There are two reasons not to follow this path:

- **First**, is a question of taste, quality, and health. Australian honeys are regarded as amongst the best internationally because our native flora provides many excellent and distinctive honey types (eg yellow box, and other eucalypts such as jarrah and coolibah; and leatherwood and melaleucas etc). Australian honeys are devoid of additives and contaminants and are increasingly recognized because of important therapeutic properties. And,
- **Second**, a viable commercial honeybee industry is critical to ensure effective pollination of a large number of horticultural crops dependent on insect pollination to maximize production potential and business productivity. It is this enormous external impact through pollination needs that makes the small honeybee industry truly unique amongst Australia's rural industries. Lose the commercial beekeeper and the place of *Apis mellifera* as the principal crop pollinator in Australia and we will certainly witness a major economic loss of around \$2billion pa and job losses of up to 11,000 according to a recent economic analysis.

The challenges facing Australia's beekeepers must be seen and evaluated in the context of those many primary producers who depend on insect pollination to produce a viable crop (such as almonds). Equally the solutions and recommendations, therefore, assume the importance not of a small and expendable group of primary producers (the commercial beekeepers) but of a strategically important industry upon which the well being of much larger industries are critically dependent. **Leaving the solutions to market forces is a dangerous strategy. Government intervention is clearly warranted to protect the wider public good that beekeepers provide to primary producers and the community.**

4. Recommendations pertaining to skills, training and research to maintain the viability of Australia's honey and crop pollination industry.

4.1 Research Researchers have played an important role, in partnership with professional beekeepers, over the past five decades in supporting the beekeeping industry and helping it remain competitive. Significant contributions have come in the areas of disease diagnosis and management, genetic improvement of commercial strains of honeybee, efficient pollination practices, and general hive management. Studies on the impact of feral bees and migratory apiaries of honeybees in natural ecosystems have also been important. Beekeepers themselves have accumulated enormous knowledge and expertise which has been passed down the generations, especially in the area of migratory beekeeping – a practice strongly developed in Australia.

The research has been mainly funded from the public purse in CSIRO, the State Departments of Agriculture and the university sector; but the industry has paid its way via the R&D rural commodity levy scheme and administered first through the Honeybee R&D Council and, more recently, under the umbrella of RIRDC. Industry has also proactively assisted with the execution of projects. **With recent developments in world trade arrangements, research and training will become increasingly important to cope with the higher risk of pests and diseases entering Australia; and to assist beekeepers improve profitability in the face of increasing importation of honeybee products.**

In recent years, Federal and State Governments have been reducing support for longer term public good research, and emphasizing user-pay principles focusing on shorter term commercially-oriented projects with outcomes that generate intellectual property and patent revenue opportunities. This trend favouring short-term commercialism also can be seen in the otherwise successful Cooperative Research Centre (CRC) program which enjoys bipartisan support at the federal level. This approach is not appropriate for honeybee-related research where IP opportunities are limited, except possibly in the area of honeybee genetic improvement, and where the major benefits are captured by a very broad and diverse community. Honeybee-related research relevant to major exotic pests like varroa seems to attract an additional problem within the CRC community. Neither the plant-oriented Bio-security CRC nor the Animal Pest CRC appear to view pests and diseases of the honeybee as falling within their responsibilities. The track record clearly shows that there is a good economic return to the wider community by the investment of public funds in honeybee-related research. **Left to market forces, adequate industry investment in honeybee and pollination research will never eventuate. Clearly, sensible government intervention is warranted to ensure that the industry is underpinned by a strategic, but focused, research base.**

In particular, there is a serious threat to the 60% of crops grown in Australia that depend on honeybee pollination. This arises from the continuing decline in commercial beekeeping and feral bee populations; and the increased risk of pests and diseases entering Australia which are certain to exacerbate the decline. The major impact will both be economic and social. Continuing strategic research is essential for retaining a viable beekeeping and pollination industry in Australia. **Given the major externalities associated with honeybees, it doesn't make sense to allow the research budget to be driven by a levy on honey production.** It must be driven by the value of pollination, actual and potential. To some extent RIRDC and Horticulture Australia Limited (HAL) are well placed to provide greater support for honeybee-related research but this has only been partly successful. **The budget for honeybee-related research should be 5-10 times higher than the present allocation which is driven by a levy on honey production, with matching support by the Federal Government.** It is impractical to arrange a levy on pollination benefits captured by primary industry, either paid or incidental. It is a classic case of market failure. Accordingly, since

the current funding base for honeybee-related research is demonstrably inadequate, and is likely to remain so without Government intervention:

Recommendation 1 The Federal Government, in recognizing the real economic value of the honeybee industry, should explore new mechanisms for increasing and allocating competitive funds available for R&D on honeybee management and pollination, commensurate with the real economic value of this industry.

The industry recognizes the merit of competitive granting schemes and accepts that this should be the principal mechanism for allocating Government and industry funds for honeybee-related research. However, there is merit in direct Government support for some core activities which underpin the longer term survival of the industry so that the nation's pollination requirements are satisfied. For example, continuing genetic improvement and a national honeybee breeding program are vital to position the industry to cope with new pests and diseases that are certain to enter Australia sooner than later. In the past, successful stock improvement has been realized by close collaboration between professional beekeepers/queen bee producers, State Governments and particular research institutions with financial support from the Honeybee Industry R&D program. But with a move away from institutional support for such longer term public good programs generally, and apiculture in particular (eg the research and teaching programs at the former Hawkesbury and Gatton Agricultural Colleges), the Australian beekeeping industry is poorly placed compared to other livestock industries to take advantage of new technologies (especially biotechnology) for stock improvement. The situation would be greatly improved if the Federal Government provided a direct mandate to one or more research institutions, or a network which could be real or virtual, to conduct honeybee-related research and teaching

Recommendation 2 The Federal Government should identify one (or more) tertiary institution and make it a centre of excellence for honeybee research, stock improvement and apiculture teaching. Funding should be provided to ensure such a centre is viable. This initiative should be complemented by access to an increased pool of competitive funds for honeybee-related research.

Given that best practice is restricted to a minority in the industry and that much of this know-how will be lost with the retirement of aging beekeepers and queen breeders,

Recommendation 3 The Government should finance digitizing the best practice manuals which only exist as hard copy (and dated) documents. It should put in place a mechanism for regular updating these best practice dossiers as living documents.

The second most serious threat to the beekeeping industry, according to the 2005 CIE study, is diminishing access to native floral sources on public lands. Exclusion of the *Apis mellifera* from these essential nectar sources, on the grounds that the species is exotic, is not consistent with the research findings to date. Exclusion of migratory honeybees from public lands on strict application of the precautionary principle is a policy that is not in the public interest; nor can it be logically sustained, given the evidence so far generated through research that clearly demonstrates the practice of migratory apiculture, *under non-limiting nectar and pollen conditions*, does not threaten the reproductive success of native flora and fauna, and is therefore compatible with the object of nature conservation. To date, much of the underpinning research on impact of *migratory managed* honeybees on native flora and fauna, has been funded from the small R&D budget driven by the honey levy. This situation is untenable. Accordingly,

Recommendation 4 Given that the longer term viability of commercial beekeeping (and the consequent sustainable production of crops requiring honeybee pollination) is threatened by diminishing access to essential nectar sources on public lands, the Government should provide funding for social scientists and biologists to conduct further robust and objective studies designed to reconcile conservation interests with the requirements of sustainable production of crops requiring honeybee pollination. In the interests of common ownership of the study results, project design must be agreed between interested parties before project commencement, as a condition of funding.

4.2 Skills and Vocational Training

Both the 2005 CIE Study and submission by Dr Doug Somerville (#98) flag problems in the areas of skills and vocational training which threaten the viability of commercial beekeeping, and therefore threaten the sustainability of crops requiring honeybee pollination.

The CIE study concluded that there were two “primary areas where education was considered essential to achieve a profitable and sustainable industry. This included:

- attracting young people into the industry and educating them and industry incumbents in efficient methods of beekeeping, quality assurance, disease control, and business management; and
- educating the general public and various state governments and federal government on the importance of honeybees in the Australian economy and society, focusing on the contribution of pollination to the horticulture, crop and pastures sectors.

The 2005 CIE Study drew the following conclusions:

“Any formal education program developed to address the needs of the honeybee industry must be based on a detailed analysis of the expected future industry training and education requirements. This requires an understanding of both the current numbers and age structure of participants within the industry and how they might change in the future. **Developing an education outlook for the industry should be a priority in order to remove any impediments to planning for ongoing industry growth.**

Any formal education within the honeybee industry should be undertaken by registered educational organisations. This means the organisation must be able to demonstrate it employs qualified personnel, has the necessary beekeeping equipment and class resources, and that the course is accessible to the industry. This will place greater confidence in educational standards within the beekeeping industry and help promote the standardisation of courses and the transfer of skills.

Educational training needs to be accompanied with promotional activities to develop an educational brand that is recognised and represents quality and consistency.

Educational programs should be standardised to ensure confidence and consistency, which will facilitate the transfer of qualifications and skills.

The industry needs to invest in developing its training capacity to ensure the necessary educational infrastructure is available. This includes investigating current training programs and the possibility of augmenting them to encapsulate the full skills set of the honeybee industry.

AHBIC should work with the government for more educational funding, and provide advice to current and potential trainers on how to address various state requirements for funding.

Educating the government and public should address not only the perceived impacts beekeepers have on native flora and fauna but also the cost imposed on society by beekeepers using national forests and conservation areas. This will only be effective if the industry has a nationally recognised code of conduct relating to the use of national forests.”

The CIE Study conclusions were discussed with several beekeeper groups in a workshop environment and attracted useful input and strong support from these industry participants. Innovative approaches to distance learning distance learning via digital technology (using virtual hives is a cheap option) should also be explored as a practical means of extending learning opportunities to people in remote communities.

***Recommendation 5.* The Government should take note of the findings of the 2005 CIE Study which identify weaknesses and threats to commercial beekeeping and the sustainability of crops dependent on honeybee pollination which arise from a loss of skills and diminishing opportunities in vocational training. The Minister for DAFF should ask his Department to establish ways and means of reversing the decline in the level of skills needed for successful beekeeping, especially in the expanding areas of pollination services and the export of package bees and queen bees. DAFF should also explore with the relevant State Departments ways and means of increasing vocational training for tomorrow’s commercial beekeepers and pollination providers, particularly in small and remote rural communities.**

Beekeepers providing paid or unpaid pollination services to grower groups, such as almond producers or farmers dependent on legume-enriched pastures, find that the level of understanding on pollination biology is often insufficient to capture the full benefits that follow from optimal crop pollination. Beekeepers some times find themselves playing the role of educator on the basics of pollination procedures. Accordingly,

***Recommendation 6.* Because honeybee pollination is a crucial part of growing crops, a component of beekeeping and pollination biology should be included in appropriate agricultural studies so that farm personnel will an adequate knowledge of farm requirements and procedures to ensure optimal pollination for crops or pastures.**

4.3 Extension and Advisory Services

Submission #98 by Dr Doug Somerville and the Appendix (authored by Mr John Rhodes) to submission #91 by NSW DPI indicate a substantial decline in extension and advisory services. Commercial beekeepers in each State and Territory in Australia during much of the 20th Century were well served by a strong cadre of dedicated and competent apiary extension officers. This has reduced drastically during the past 20 years and it’s now largely a case of ‘each to his own’. For example, there is now no beekeeping extension service available to residents of the ACT. If a beekeeper, especially an amateur, believes that he/she has a notifiable disease such as AFB, the ACT Government will arrange advice on a commercial cost recovery basis. This creates a strong disincentive to seek timely and professional advice. Should an

exotic disease of pest enter Australia via the ACT, it may be well established and widespread before the alarm is raised.

While Australia's border biosecurity is generally well developed, breaches do occur and will continue to occur. A general decline in taxonomic capabilities in Australia suggests that any undetected breach may go undetected for longer than ever in the past. Two recent examples are in the introduction and spread of the fire ant, *Solenopsis invicta*, in the Brisbane region and the introduction and spread of the small hive beetle, *Aethina tumida* around western Sydney. Both were subject to preliminary mis-identification. The latter, *A. tumida*, is a pest the industry could well do without. Judging by its adverse impact in large parts of the USA, it is probable that elements of the Australian beekeeping industry are in denial about its longer term adverse impact in this country.

Beekeepers, both commercial and amateur, will need to be increasingly knowledgeable and alert to the introduction and spread of new pests (esp varroa) and diseases given the serious decline in extension and advisory services by State Governments and the inadequate funding for underpinning research.

If the States and Territories are unwilling to restore extension and advisory services to the level enjoyed during most of the 20th Century, then **Recommendation 5** becomes even more important.

4.4 Role of Australian Government to support viability and sustainability of Australian Agriculture.

From all the earlier evidence, it is clear that the level and nature of support the Australian Government should give to the beekeeping industry must be driven by the wider benefits that come from pollination services for the 60% of crops that depend or benefit from effective honeybee pollination. There are substantial opportunities for increased exports of queen bees and package bees. **The strategic significance of bolstering the viability of these additional export opportunities should be seen not so much in the direct monetary value of the exports themselves but in the fact that they will enhance the viability of commercial beekeeping on which crop and pasture productivity is dependent.**

While the benefits derived from crop pollination are substantial (up to \$2billion pa) they are spread across a large and diverse collection of primary producers. If left to market forces, there will certainly be a decline in commercial beekeeping with major adverse economic and social impacts on primary producers, rural communities and urban communities. The reasons for this decline are clearly articulated in the 2005 CIE Study. There are take home messages for the Government under all four Terms of Reference.

This submission advances five recommendations. Implementation of each recommendation requires some action by the Australian Government. Accordingly, the current Inquiry is timely and an important step in the right direction. The wider and serious problems facing Australian Agriculture if this country's commercial beekeepers become a relic of the 20th Century warrant special intervention by the Australian Government. Accordingly,

Recommendation 7. The Inquiry should urge the Minister for DAFF to instruct his Department to initiate an urgent study of the research, skills and training requirements to ensure Australia maintains a viable commercial beekeeping

capability, thereby guaranteeing the viability and sustainability of Australian Agriculture for the 21st Century. The findings of the 2005 CIE Study represent a good starting point.

Appendix 1.

The following individuals contributed to the preparation of this submission and support the recommendations contained therein.

Industry

Mr Linton Briggs AM, honey producer and queen bee breeder. Glen Rowan. Former CEO of Federal Council of Australian Apiarist Associations (FCAAA) and former Acting CEO, AHBIC.

Mr Tony Eden, honey producer, Tamworth; trading as *Australian Bush Honey*.

Mrs Jodie Goldsworthy, 4th generation honey producer; and now honey packer, Corowa; trading as *Beechworth Honey Pty Ltd*.

Mr Trevor Monson, honey producer and pollination broker/specialist, Mildura; trading as Monson's Honey.

Mr Warren Taylor, honey producer, exporter of queen bees and package bees, Blayney; trading as *Australian Queen Bee Exporters Pty Ltd*.

Ms Gretchen When, queen bee breeder and AI specialist. Richmond

Researchers

Dr Denis Anderson, Research Scientist, CSIRO Entomology, Canberra

Mr John Rhodes, Apiary officer and honeybee researcher, NSW Dept of Primary Industry, Tamworth.

Dr Doug Somerville, Apiary officer and honeybee researcher, NSW Dept of Primary Industry. Goulburn

Dr Max Whitten, AM FAA FTSE, entomologist/geneticist, former Chairman, Honeybee R and D Council. Maleny; retired Chief, CSIRO Entomology. Contact details: PO Box 865, MALENY, QLD 4552; phone/fax 07 54943175; email: maxw@primusonline.com.au.