

WA HONEY BEE AND POLLINATION INDUSTRY BEEKEEPERS REPORT 2022



Prepared for the
APC BEEKEEPERS PRODUCERS' COMMITTEE
To support the industry Strategic Plan

MAY 2022



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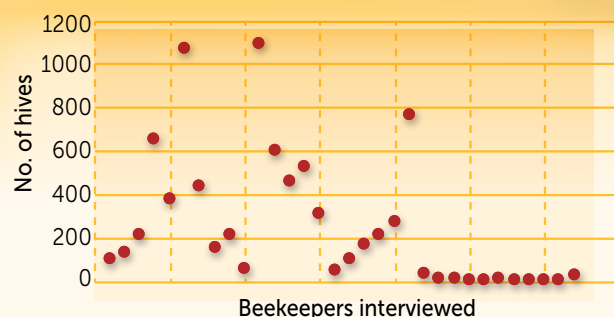
Executive Summary

This report was commissioned by the APC Beekeepers Producers' Committee to assist in the review and design of the next Strategic Plan for 2022-2025 to guide the future direction of the WA bee and honey industry.

The first stage of the project produced a Desktop Review and Analysis of the current global, Australian and Western Australian market situation for the honey bee and pollination industries (**Agknowledge**® July 2021). The report reviewed a wide range of industry reports and web-based information.

The second stage of the project designed and conducted a producer consultation phase to gauge current industry expectations and aspirations for the industry's future in WA. During March 2022 thirty-one beekeepers were consulted to provide their feedback and input to help guide the future direction of the WA honey, bee and pollination industry and to assist the APC Beekeepers Producers' Committee to re-set its strategic direction for the next five years. The beekeepers consulted were representative of both the commercial producers and recreational or hobbyist beekeepers based within Western Australia.

Based on the feedback from respondents engaged in the consultation, the WA honey and bee industry appears to be fragmented in the number of different industry groups, range of different interests, duplication of activities and mixed messaging to government. WA beekeepers are challenged by a lack of apiary sites, the management of resources, the risk of a biosecurity incursion, and competition from imported and adulterated honey. The industry is competitive by nature and both commercial and hobbyist beekeepers appear dismissive of each other's interests.



BEEKEEPERS INTERVIEWED - NO OF HIVES

While WA beekeepers face numerous challenges, there are also many opportunities for the local industry to capitalise on to become a more collaborative industry that can increase the productivity and profitability of the Western Australian industry. This includes the potential for formation of one peak industry body that represents the interests of both commercial and hobbyist beekeepers and provides one voice to government. Other opportunities include more promotion and marketing of honey and bee products; paid pollination of horticultural crops; better resource access and management; and a dedicated queen bee breeding program.

The beekeepers interviewed were both commercial and hobbyist beekeepers: the 21 commercial beekeepers represented more than 10,000 hives and ranged from 96 up to 1,400 hives, while the 10 amateur/hobbyist beekeepers accounted for a total of 141 hives and ranged from 5 up to 50 hives.

Currently an amateur or hobbyist beekeeper is classified as someone with less than 50 hives in the WA industry: the majority of respondents believe this classification should remain, with many pushing for less than 20 hives as they argue that at this level a beekeeper is producing far more honey than they can consume, and therefore it is a saleable product which impacts the price of honey that commercial beekeepers receive.

“Any more than 1 and they start selling honey, take up sites that they shouldn’t be able to use, and that affects our price in selling honey and they are promoting their honey on social media and undercutting the commercial producers. There is no regulation.”¹⁸

More than half of the beekeeper respondents are members of the APC and BICWA, which is mainly by default in their payment of the FFS to APC and also following a change in the BICWA constitution that all beekeepers are now able to become members. They receive information from these groups, however not all respondents were aware of their membership. WAAS also has a good following which included some commercial beekeepers. Other groups represented include WAFF Bees and WABA.

“There are lots of different bodies, only a lot of those bodies are self-centred and don’t communicate. That is one of the big problems we are facing as you get cliquy groups that are made up of all commercial beekeepers and they keep everything close to their chests and don’t try and spread information. The problem is that they keep information and don’t say much and guard their sites and don’t tell people much. What they don’t realise is that amateur beekeepers outnumber them 3 to 1 and amateurs can cause a lot of damage so it is in their best interests to become more engaged with the amateur side and share more information. It is not like farming where people own their own block of land, beekeepers roam the state.”²⁴

There appears to be a lot of confusion about the roles and responsibilities of each of the groups involved in the bee industry within WA, although the majority of beekeepers do have an understanding of the main groups. A number of criticisms were raised that there are too many groups, they are a waste of energy, there is a lot of secrecy within the groups and that they provide a confusing message to government.

“Overall, the biggest problem is communication within industry. That is why BICWA has evolved, all groups are trying to do the same thing and if you have independent groups going to government it is not good, they need to come together and be united as one group.”¹²

Examples of positive benefits that respondents attribute to services provided by industry groups are mainly of focused on networking opportunities, education, provision of information, training and lobbying on behalf of industry.

Beekeepers believe BICWA has positively benefited their operations in terms of lobbying government on a range of issues which include apiary site management, burning, native forest logging, clearing of apiary sites and track access and opening up national park access. Other examples include the educational benefit of the annual conference, and the ability to bring all the groups together under one umbrella to ensure industry has one voice.

“BICWA has been lobbying on burning and logging and opening up of national park access, they also recently developed a regional engagement committee where one beekeeper represents the region as a direct consult with DBCA – one voice through one person. That has a direct positive benefit to our business as we know where to go. They are doing their best to be a leader so you don’t have lots of individuals going to the heads of departments, they can do it as a group which is beneficial for industry and makes industry look more professional.”¹²

The Bee Informed Newsletter developed by the APC was also viewed as beneficial in providing information on industry issues and seasonal updates. WAFF Bees and WABA were also identified in terms of their educational support, networking opportunities and advocating on behalf of industry. According to respondents, WAAS is critical to passing on and sharing information mainly for hobbyist beekeepers who value the group for its social aspect and support network. They also provide insurance cover and invaluable training courses.

“Hobby beekeepers are in a good place at the moment because of WAAS; they are inspirational and run an education program which is fantastic and booked out every time they advertise. I have learnt so much by going to meetings and listening to various speakers which are all to do with making sure you do the right thing with bees and look after the side effects of pesticides and make sure that the bees are the actual focus of everything rather than monetary return.”²⁶

DPIRD's role in biosecurity management has also benefited beekeeping operations in terms of preparing for and preventing exotic incursions in WA. Incidents highlighted include the management and control of red dwarf honey bee incursion, and also concern about deformed wing disease which luckily was a false alarm, but DPIRD investigated promptly and conducted testing.

"One of the best things DPIRD did a couple of seasons ago - I did a cut out from underneath a sea container and put the hive in quarantine and a month later I noticed the wings of the bees were deformed on all emerging brood. My first concern was that it was the first case of deformed wing disease in Australia, a devastating disease to industry. I was devastated that I could be dealing with a potential outbreak. I rang DPIRD and they stepped in and sent some to the lab to investigate and a sample also went to Canberra. The whole process of testing cost in the thousands of dollars but cost me nothing because that is what our hive registration fees and FFS that we pay as beekeepers goes towards – biosecurity. DPIRD were very good and got back to me that it was not a disease issue but rather an environmental issue as the brood got too hot. That is a good example as to why people should be a registered beekeeper (not only is it law) as they are there to help, not be the policeman." 28

Research conducted by the CRC and ChemCentre has also been beneficial with opportunity for premium pricing for Jarrah honey following testing for medicinal properties including the antimicrobial and anti-bacterial activity. Unfortunately, there was also criticism that research reports are yet to be released.

Another indirect activity that significantly benefits commercial producers in particular that was raised by a respondent was the need to be involved in sharing of knowledge, educating and supporting hobbyist beekeepers as this is seen as a great risk mitigation tool that will protect the WA beekeeping industry.

"People ask me why I bother with WAAS when I am going commercial, but in presentations I let them know as a backyard beekeeper you are my best insurance policy because if a disease breaks out anywhere, it is a backyard beekeeper that will first see it as by the time it gets to a commercial apiary it has spread so far and wide it is uncontrollable. They are our first line of defence and that is one of the reasons why I teach the backyard beekeepers. If we can give amateur beekeepers the knowledge and training and ability to spot problems and the confidence to talk to DPIRD and other commercial beekeepers knowing they are going to get a positive rather than a negative interaction." 28

Beekeeper respondents would like to see the management of the WA bee industry improved through one united industry group leading the way that will provide one voice, lobby government, and raise industry funds to facilitate improved industry development and growth.

The majority of respondents would like to see BICWA become the peak industry body that represents beekeepers, engages with industry and that is professionally managed by an employee. A structure similar to Vegetables WA was suggested. It is envisaged that BICWA would be the umbrella group that leads and oversees the other groups. APC, given its statutory obligations, would continue to collect funds through the FFS and fund R&D and biosecurity. It is believed it should not be involved in the political side and should fully support BICWA in its activities and through funding.

"BICWA is the natural lead body and under BICWA there should be other offshoots; get rid of the duplication. Create one main body rather than fragmented so people know where to go to for things, at the moment they are confused as one group tries to outdo the other. BICWA would be lead, APC should form a division of BICWA with a sub-committee within, not a separate entity. WAAS also underneath and DPIRD involved to get things approved in collaboration with BICWA. There should be one voice, one message. We don't need WAFF Bees or WABA." 9

WAAS as the representative of hobbyist beekeepers should come under the BICWA umbrella and oversee the social and education areas, alternatively WAAS continue to represent the hobbyist beekeepers and then there also be a commercial arm, that comes under BICWA. With regard to WABA and WAFF Bees, many respondents believe they should be made redundant whereas others said some provision should be made for them to still come under the BICWA umbrella.

“It is important that hobbyists get a say whenever there are overlapping issues like regulations etc. At the end if they don’t enjoy being a part of industry, they will walk away and won’t see value in paying their registration. Half of them already don’t join because they don’t know about the groups and the requirements. Hobbyists need representation otherwise the contribution from hobbyists will fold.”²⁵

Other structural suggestions include a peak body with representatives from each of these groups, a mixed board that represents all sectors of industry or a skills-based board with industry. There were a couple of suggestions of remodelling of BICWA as respondents are concerned that the current groups have vested interests, strong personalities, and infighting and some believe that won’t change.

“BICWA was recently remodelled but it made it worse rather than better with the constitution and voting it has taken the equity out of it and a certain number of commercial operators have insulated themselves against negative outcomes. If anyone tries to challenge them, they can outvote any decision. There is a clause in the constitution which results in the board’s ability to determine if someone can or can’t continue to be a member, that might be fair enough in some ways but if it is a legitimate fee-paying person? BICWA can’t be responsible for themselves let alone someone else.”²

“The previous BICWA board and panel was more representative as it drew members from each of the lobby groups. Under the new model, although it can be members, they have no entitlement to influence or the ability to bring items to agenda for the individual. The new BICWA constitution and how directors are appointed quickly favours commercial beekeepers and they individually have more voting rights than individual amateurs who you won’t get as many in the room to outvote them. It doesn’t support lobby groups feeding into the model.”²⁰

In terms of the management of the industry, there was criticism that DPIRD should be more active as there are a lot of beekeepers flying under the radar with unregistered hives which is necessary for traceability and to minimise biosecurity risks. It would also allow industry to access extra funds.

Beekeeper respondents believe that BICWA should be the peak body that leads the WA beekeeping industry and be responsible for industry advocacy, industry publications and communication, policy and planning, and resource access and management. Other responsibilities include market development, marketing and promotion, industry education and training, putting R&D ideas forward, and developing and maintaining a QA system.

Respondents also outlined an expectation that DPIRD should have a secondary role in supporting industry in the areas of industry advocacy, policy and planning, industry education and training, biosecurity, communications, marketing and promotion, research and development and resource access and resource management in conjunction with DBCA. WAAS also has a role to play in industry education and training, providing an industry insurance scheme for amateurs and also develop a QA system for hobbyist beekeepers.

With regard to biosecurity, it was viewed that DPIRD should have primary responsibility and that the APC have a secondary role in providing funding in the event of an incursion or outbreak along with providing industry publications and communications. Market forecasting was viewed as a challenge, and therefore the majority of respondents believe it was not applicable to industry and a waste of money.

The majority of beekeeper respondents support the employment of a Bee Industry Executive Officer to take the load off volunteers and to professionalise the industry to help raise its profile.

“We need a full time CEO; we are now an industry worth over \$1 billion to the WA economy and we run off volunteers who are time poor and also have to run their own businesses. If we have a paid full time CEO and Board that directs that CEO, that is the most important thing. It is not effective at the moment, not because we don’t want to be but because there are only so many hours in the day.”¹⁹

Initially respondents would like to see someone employed part time, and for the person in the role to be shared across the various groups (and registered hives) including BICWA, APC and WAAS. The Executive Officer would assist in representing industry interests and advocate at forums and meetings; lobby government; oversee activities and industry development; focus on contacting people; and create momentum for funding opportunities. Concern was raised about finding the right person for the job and that the person may not understand the industry.

“Beekeepers lack representation in different forums, if someone could have gone along to represent the industry when they were planning the route for the Indian Ocean Drive, the tracks wouldn’t have been blocked off with limestone. It is all extra time and money, but it is about all kicking at the same goal.”³

More than 70% of beekeepers consulted support an increase in the Fee for Service contribution via the APC to support industry sustainability and growth. Respondents understand it cannot happen without an increase in the FFS and many are prepared to pay a five-fold increase up to \$5 per hive. Other suggestions were to double the current \$1/hive fee or triple it which would increase the budget and allow for the industry contribution to be used to leverage against other funding grants to make the position sustainable.

“It can’t happen without a Fee for Service increase. It has to go up around about \$5 per hive with potential for flag fall increase of about \$100. It is currently \$20. A five-fold increase on hive fee and a flag fall. That will lift the budget from about \$100,000 roughly now to about the \$500,000 mark which be a good starting point to get it moving. It can always come down.”²

Other ideas to fund industry development include targeting other sectors involved in the industry and those reliant on beekeepers. If the bee industry suffers then other sectors are also impacted financially. These include packers, retailers and the pollination industry, and could include an additional fee or levy, donations, or sponsorship. Contributions from government, both state and federal was also raised in that they should support the industry as it is unique, and clean and green. Funding grants also provide an opportunity with a 10% administration fee available to help fund an Executive Officer.

Funds can also be raised through donations and sponsorship; events; the introduction of a flat fee per voting member of BICWA or through income streams for a designated queen bee breeding program or a percentage of export sales. Other suggestions include a fee on production or an additional fee for licenced bee sites, which are a valuable asset. Funds raised by industry need to be sustainable to attract and retain a professional person in the role for a number of years. Throughout the industry consultation concern was raised many times about the number of unregistered hives which could also provide additional income for industry.

“We are missing significant income with unregistered beekeepers. Industry should track down the unregistered hives and collect their fees because I don’t believe in passengers who are still benefiting but not contributing.”²²



Challenges

The main challenges for the WA bee industry outlined by respondents are adulterated honey and competition from imported honey. A close third is biosecurity and the risk of pests or diseases. Other main challenges include resource access and/or management; understanding the industry's contribution to the WA economy; labour access; and development of the export market. Bee breeding, and in particular queen bee breeding, is also viewed as a big challenge for industry due to supply issues. The issues that growers find the least challenging are carbon footprint (emissions); pollination of crops and horticulture; access to advice, technology and industry information and social licence.

"Resource access: there are not enough sites and they are burning most of what we are trying to access. Access to resources is always a challenge. We have our own DBCA registered sites and private sites, and also borrow from other people. It is about opening up new country and issuing new sites, there are a lot of sites held by people who don't bee keep any more. I am not sure how to deal with it but maybe DBCA should review these sites. Some of these sites people won't use for years, some are marginal and not regular producers; it should be based around people's usage of it and if it hasn't been used for a certain time frame." ⁸

In terms of the next five years, respondents believe the main barrier is resource access with limited access to apiary sites; lots of beekeepers are missing out on sites and the resource is going to waste. Burning of forests contributes to the issue, along with mining and logging companies contributing to the destruction of beekeeping sites. Beekeepers are also denied access to national forests through a moratorium that was put in place due to concerns that the European Bee had an environmental effect on forests.

"Burning: government keeps burning everything and the sites that are available are destroyed as government wants to burn every couple of years therefore the site is no good for 5-6 years after and when it is ready, they are ready to be burnt again. DBCA should engage with industry and not burn as much and listen to the research." ¹⁵

Burning of forests is a huge barrier for industry as respondents believe that prescribed burning is done at the wrong time of the year; there is a lack of communication around burns; there is too much burning and repeat burning which destroys valuable honey production sites. The drying climate and unpredictability and changes in flowering patterns also impact honey production and bee health.

Labour is a common barrier across many industries at the moment. The biosecurity risk is always at the forefront of beekeeper's minds with the threat of incursions and the risks with hobbyists, derelict hives etc. as they can impact production hives and wipe out an entire industry. WA is proud of its disease-free status and clean and green image but there is always a potential risk that they will lose it with any incursion and particularly Varroa mite poses the biggest risk.

“Cheap imports are always a problem, unfortunately industry doesn’t want to raise the issue. Total imports were just shy of 8,000 tonnes of which about 3,000t was from China and then South America. Capilano import honey from China and Brazil and then mix into lower cost honey and on-sell it as an ingredient or as cheap brands of honey. We can’t do anything about it, but make sure we monitor honey to make sure it is real honey and that it won’t affect consumers. Along with the importation of honey there is also the risk of importing chemicals in that honey. It was detected before in honey that was sent from WA (that was originally imported) and that crashed the whole export market to Malaysia, and we can’t sell to Vietnam anymore because of that. Even if imported honey is sold on the shelf here, we run the risk that if something is detected it gives a bad impression for all honey.”³¹

Access to queen bees is also a challenge as demand is high and supply is low, as currently commercial beekeepers have priority access to queens from the Rottneest Breeding program, but hobbyist beekeepers are also crying out for queen bees. There is concern that there is a lack of new genetic material available and disease resistant bees for local breeding programs to ensure the ongoing viability of the industry.

“Queen bees - the barrier is that access to genetics is limited to what we currently have as legislation prevents the import of genetics due to the biosecurity risk. That impacts our ability to export as we are only breeding from bees that are clean and disease free and when they come across their first varroa mite and small hive beetle they don’t stack up.”²⁰

Other barriers respondents identified included imported and adulterated honey, and the supply of cheaper honey on the local market with many hobbyist beekeepers undercutting commercial beekeepers’ prices which they say devalues their honey. Farm gate sales was also raised as an issue as many hives are not registered, beekeepers are not abiding by food labelling laws and there is no traceability for consumers.

“There is a huge number of keepers who don’t have registered hives which infuriates me. They are a potential disease breeding ground. The point with hive registrations is that if there is an outbreak then DPIRD can go to those in the area and alert them and protect those who haven’t got it and the commercial guys. A lot of hobbyists haven’t bothered to register as there is no stick or carrot or enforcement. The biggest issue is that they don’t know what they are doing and then if the hive dies, they leave it out the back. People don’t do them in as they also live locally. DPIRD guys are spread thin across the state, and they don’t have the time or mandate to enforce it. The legislation is there for hives but there is no enforcement. There will be an issue in the future with a disease outbreak in these breeding grounds which will be the problem. DPIRD are under-resourced.”²²

The disconnect between commercial and hobbyist beekeepers is a challenge for the industry as from the industry consultation it is clear that the commercial beekeepers view it as an industry while the hobbyist beekeepers are doing it as a hobby so they are not fully aware of the different industry groups or engaged in the industry aside from their involvement with WAAS which provides a social and educational network.

“Hobbyists are not interested in connecting formally and they don’t see it is an industry - the large majority of hobbyist beekeepers are not aware and are probably not interested in the ‘commercial’ issues being raised. I think the fundamental issue here is that hobbyists simply don’t see themselves as part of an ‘industry’. In discussions with my peers, we estimate that about half of the hobbyists are not registered with DPIRD and the other half (3,800 or so) are. I think it is very difficult to connect hobby producers into an industry when they simply don’t see themselves as belonging. In a similar vein I wonder if people who might grow potatoes in their backyard see themselves as part of the potato industry: hobby beekeepers are probably not much different.”²⁵



Opportunities

Beekeeper respondents are optimistic that there are opportunities to address some of the issues the industry is currently facing including more promotion and marketing of honey and bee products; paid pollination of horticultural crops; better resource access and management; and queen bee breeding; further research; training and education; production of other by-products and the establishment of an irradiation plant in WA.

“The biggest untapped potential is that WA is clean and green and a biodiversity hotspot for honey that is all natural – effectively it could be a state-wide marketing campaign or national. International people are prepared to pay more for honey and that could be linked with raising the price of honey. In the shops it is about \$6/kg and a premium product sells for about \$18/kg at the moment. It’s a clever marketing strategy and also provides an opportunity to target the export market and intrastate markets. DPIRD has traditionally done a lot of ‘buy west, eat best’ campaigns so they seem to be the appropriate body to engage with and collaborate on that.”⁵

Respondents have suggested more industry promotion and education to help increase the price of honey based around medicinal honey and the antibacterial and antimicrobial activity of honey will enable the industry to target the export market. The promotion of WA’s unique clean and green image along with its pure, natural, disease free, antibiotic free and pesticide free honey should be capitalised on and there’s an opportunity to push the story of WA honey’s provenance, similar to the wine industry.

“The story of honey - honey should follow the marketing strategy that wine has where they do a better job of the provenance story of time in the landscape and place. The story of WA honey they don’t do a good job of marketing that and there is huge opportunity. Market research done by CRC of 6 different countries shows that the story of time and place is the most common factor influencing the purchase price of honey. The story has nothing to do with health benefits, you just need to be a good story teller. We don’t do a good job of linking with honey products and that is what wine marketing is based on. Promote how the flavour is influenced by climate, the ethics of beekeepers.”¹⁹

Respondents would like to see more paid pollination and value adding opportunities for beekeepers as it allows them to produce honey and also collect pollen. Demand is increasing with lots of new plantings of avocados in particular and pollination prices have risen from \$60 per hive up to \$280/ hive in the past 10 years. There is opportunity to educate the horticultural industry on the benefits of bees for pollination and their ability to increase yields, however research data is required to back that claim. It was mentioned that there may be an opportunity for BICWA to establish a pollination hub to connect beekeepers to producers.

*"Pollination – the current demand to return on horticultural crops. But there is a massive blip in price for that crop, we have put a lot of faith in avocados, and it concerns me. We don't have other industries willing to pay that sort of money and see value for it. If they don't see financial reward, they will pay less or they will bring in what we are already seeing with almonds over east where more growers are bringing in self-fertile trees to reduce their pollination need. We need to make sure we as an industry are delivering value to the horticultural industry as they don't see value in us. We need to show we are providing a good product, our bees are in good condition to pollinate etc. We are struggling to convince horticulture in an environment with lots of feral bees and other pollinators about the extra value that pollination adds. This is an area where work can be done."*²⁰

With high demand for apiary sites and low availability, beekeepers believe there are a number of opportunities to open up access to sites. It could be a system similar to the Rottnest boat mooring system, or allocation based against production of honey or through a review of DBCA site usage based on 'if you don't use it, you lose it'. A computerised system could be used to show beekeepers what's available and what sites are reserved. It was also raised that BICWA could assist in brokering sites and access on behalf of beekeepers.

*"Increased sharing of sites: with the moorings at Rotto people had several, there is big demand and low supply. You have a primary user and secondary users and 5 or 6 other people are listed and you have a number on the boat. Something like that would be good with the sites. We share sites and are happy to share. If we had 3-4 other people listed who could use our sites, they submit honey samples 3-4 times a year to make sure they haven't got AFB. Our ideal lessee would be disease free and have BQual registration. Users could say we will let you use our site, if we can buy honey off you."*⁴

Bee breeding and in particular with queen bee breeding, respondents believe there is an opportunity for a dedicated queen bee breeder to supply the local market (commercial and hobbyist beekeepers), national and export markets. With WA being so isolated and with its clean, green and disease-free environment, it could capitalise on creating an official certified 'disease free' breeding program.

*"WA is the Noahs Ark of honey bees – we don't have small hive beetle, varroa etc. and we are the only place in the world that doesn't have those so our queens are a lot better – we need to pushing that. Bee breeding programs so we can sell them and export all over the world. The Rottnest breeding program is for beekeepers' own consumption. We need to start a queen bee breeding program."*²⁹

Export opportunities into Asia, the Middle East, Japan, Singapore and America for all bee products were also raised, and particularly around WA's clean and green image and the medicinal values of honey and its health benefits. Other opportunities include the production and marketing of by-products including pollen as a health food, propolis and bee venom for cancer treatment. An irradiation plant was also suggested for risk mitigation to clean diseases / pest ridden hives and to assist with a better breeding program and ultimately healthier bees.

*"We need an irradiation plant in WA – that would be good for a mitigation program to throw everything at it every 2 years. We can only test with kits and then we have to destroy the hives and the only way is to treat with a fire. For peace of mind, we could put a pallet through. It could be another way of mitigating risk for American foulbrood (AFB). It currently costs \$500-600/irradiated pallet and it has to go to Qld and back so with freight costs it is not worth it. We could share with other industries like grains as some countries require irradiation of products for export."*¹⁸

Training and education opportunities raised include using the expertise and knowledge of retired beekeepers to train others, an online training course and production of WA-specific You Tube clips. Given the number of unregistered hives in the industry and the biosecurity risk associated with that, one respondent would like beekeeping equipment suppliers and training organisations to ask for proof of registration prior to providing any equipment, service or training. They could also assist in promoting the benefits of registration.

American Foulbrood is an issue where respondents believe there is an opportunity establish an area where only diseased hives are allowed for research purposes. Another opportunity raised was the use of antibiotics for the treatment of AFB and for the relaxation of regulations, as it can be used everywhere else in the world.

“Disease research – at the moment we have got a lot of big commercial beekeepers who have got AFB and they don’t report it. The only option and way to treat AFB is destruction of hives. If we had a system where we had a good production area of the state taken back by government and DPIRD, where they remove apiary licences for that area and only allow hives on that site that are disease infected for research. If you are a beekeeper with disease, then you can apply to put hives on these sites and work in with DPIRD to monitor and breed disease resistant bees. You can still get production off it but it would provide an incentive for commercial beekeepers who want to access that site and they also have to own they have got diseased bees instead of hiding. While it is hidden, it is there and it is a threat, but if it is out in the open and there is benefit to coming forward, they will.”²⁸

Other opportunities raised include the development of industry standards for bee hive equipment and the materials used; resource reports and forecasts to be developed by DBCA and DPIRD and distributed to beekeepers; a quality assurance program for amateurs to help protect the industry and also the offer of incentives in discounts on supplies, training or hive registration to encourage people to register their hives.

“Build meaningful Australian standards for equipment - bee boxes, we basically have 8” frame and 10” frame sizes, depend which manufacturer you buy from internal and external sizes vary. If we develop Australian and New Zealand standards and say this is what it is going be and if you are a buying a box the standard states the dimensions of box and frame etc. should be this.... It doesn’t matter who you buy it from or where it’s made, there will be some uniformity. In that standard you can also include materials - treatment of the timber standards to comply with so they don’t end up with a treatment that is bad for the environment and bees. In the last 8 years we have also had lots of plastic come into the industry – frames, boxes, Styrofoam hives/boxes (over east fire risk). There is no standard in Australia and it allows for overseas product to come into Australia that historically doesn’t match up with what we have been using in the past.”²⁸

Production figures for the WA honey and bee industry are not currently collected via a central mechanism, and therefore little data is available and what is available is quite often conflicting. Beekeeper respondents believe that production figures could be captured in a number of ways either through packers; a levy; industry survey either self-reporting or compulsory reporting of data; the use of sentinel hives to report production or an estimation of industry data based on a small sample.

The current hive registration process, through DPIRD, was a popular suggestion for the collection of industry data through the current database and for beekeepers to report their figures annually against their hive brand and capture the information in an online portal. Once again there was concern that this may not be totally accurate as a lot of data would be missed with the number of unregistered hives.

Other ideas include the development of an App for self-reporting or an extension of the newly developed DBCA apiary site App. Despite these suggestions, respondents believe the challenge is beekeepers are guarded, secretive and not entirely honest therefore they will be reluctant to share their information and trade secrets.

*"At the moment you won't because there are too many barriers and ramifications for people personally in reporting. Anything that is reported to any government body is basically reported to the tax man. So, say the backyard beekeeper they will sell their honey, that is not processed in a registered food preparation facility as that costs money and they don't declare their income so they don't want to report it as there are ramifications for them. In the commercial field, you have a lot who still sell honey under the table for cash - they sell hives, queens, nucs etc. unreported for cash in what gets termed as the carton economy – it is real and extremely large. It is impossible to capture all data. There is no real mechanism that will accurately capture that."*²⁸

The majority of beekeepers (77%) consulted would readily share their production figures on the basis that they believe the information is critical for industry to develop, allows industry to determine its contribution to the economy and the value of beekeeping, and is useful when advocating to government. The collection of data benefits not only industry, but individual beekeepers as well in terms of providing benchmarking opportunities.

*"Yes, I am happy to share the information, but say if I get 100 tonnes of Jarrah honey a year worth \$40/kg and I am bringing in the money then government may then say it will increase site fees, and that will increase theft and then people know where my hives are. If it is private and confidential that is great, but if it is in the wrong hands it won't benefit the industry and will be detrimental to industry and beekeepers. It's a yes but I want to know who will be holding the information and where it will go."*¹

Production figures are viewed as highly confidential information and therefore for people to be open and honest in sharing production figures, it is believed that industry would need to show benefit of it and guarantee the protection or anonymity of beekeepers to encourage them to work together to secure their own and the industry's future. As quoted by one respondent 'if you can measure it, you can manage it', and likewise. The suggestion was made that the information should be collected by a government department in a secure environment rather than an industry body, as it is too close to industry.



Research

A range of research ideas were raised by respondents which include more research around the properties of honey and its medicinal value; bee breeding and disease resistance; resource management; and more research to address biosecurity issues.

While the CRC has already done a lot of work on the properties of honey, respondents would like further investigation on the medicinal value and health benefits of honey and within the various species, not only for Jarrah honey. Other ideas include testing Marri for low GI, the ability to prove traceability in honey and provenance, research on the exact properties of medicinal honey, and the need to get the new Optical Density Assay test (ODA) that tests the total activity of honey and was developed by the CRC, certified for commercial use.

“Focus on medicinal honey and more clinical trials, there were some done last year with UWA with people who had their tonsils out. Bush medicine could improve more clinical trials outcomes and result in better health with things like acne and also the Fiona Stanley burns unit – serious clinical trials and also skin blemishes for cosmetics.”⁹

There is opportunity for further research into breeding disease/pest resistant bees that will be immune to Varroa, AFB and other incursions that may threaten the bee industry in WA. As respondents said, it is about being proactive rather than reactive and preparing industry through a genetically stronger bee. Other breeding opportunities include research into the temperament of bees and breeding more docile bees.

“Research into genetic influences for hygiene in bees, ability to resist varroa – it’s happening around the world, we should be doing it here. Our bee pool is probably quite different genetically to a lot of northern American and European bees as they have never evolved to fight varroa. We need to continue to do genetic research into how to create bees that are resistant to varroa.”²⁵

A number of research ideas based around the management of resources were also raised which include research into burning frequency and the effect on species diversity and change in flowering patterns (smoke impact); the impact of burning on trees; alternative ways to conduct burn offs instead of burning massive areas, along with comparison of low intensity burns versus high intensity burns.

“Native vegetation - understanding the effect of bee pollination on native vegetation as a surrogate pollinator. You might find keystone species like Marri for example if there is a food shortage for black cockatoos which is primarily from Marri trees then honey bees can help increase food availability for the cockatoos. This can play into maintaining social licence with helping with threatened/endangered species like the black cockatoo.”¹⁹

Respondents also raised research ideas for the biological control for wax moth (a serious pest of unpopulated bee equipment) and the legislation change required and an effective way to control chalk brood effectively and better manage bees. It was also mentioned that industry requires more research into what other exotic diseases and pests there are overseas that could threaten the industry and gather knowledge and prepare the information.

Research ideas around bee health and management include a focus on nutrition and keeping; how to remove bees from honey supers; the impact of pesticides and herbicides on bee health; and the impact of angry wild bees have on bee hives. Other ideas include research into by-products like bee venom, pollen, and propolis including the nutritional benefits and health benefits. Further export market development (pollen and honey) research was raised and further investigation into technology to assist beekeepers to improve yields and better manage their operations through automation.

Pollination research suggested by respondents includes data to back up the claim the true value of bees and that they help increase yields and the best way to approach it with hive placement and density etc. Other research topics include scientific data on the distance between apiary site centres to determine if it could be reduced (3km radius) to open up more room for apiary sites along with more research on the interaction between introduced bees and native bees to help lift the moratorium on access to national parks.

“National Parks – there needs to be more research on the interaction between introduced honey bees and the environment and native bees because to have any hope of lifting the moratorium, any evidence needs to be scientific based evidence.”³¹

Observations from the beekeeper consultation



Some beekeepers find it hard to differentiate between the APC and DPIRD, the FFS and hive registration.

2

1

There is a lot of confusion amongst industry about the roles and responsibilities of the various groups.

3

Hobbyist are not fully aware or don't believe they pay a FFS.

Commercial beekeepers view it as an industry, whereas hobbyist see their involvement as a hobby.

4

5

DPIRD is often viewed as the only government organisation involved, rather than DBCA when it comes to resource management. There is confusion with the two.

6

DBCA is still identified as DPAW.

7

Commercial beekeepers call smaller beekeepers amateurs/recreational beekeepers, whereas many of them call themselves hobbyists.



Areas to consider in the next WA honey industry strategic plan

The areas below were outlined during the consultation process by commercial and hobbyist beekeepers to be considered in developing the future direction of the WA bee and honey industry.

Industry groups

- More promotion and education around the roles and responsibilities of the different industry groups.
- More collaboration between commercial and hobbyist beekeepers.

APC

- Continue to collect the FFS, fund R&D and biosecurity.
- Support BICWA to become the peak industry body with funding to support employment of an Executive Officer to grow the industry.
- Be more accountable for the FFS spending and reporting back to industry.
- Investigate the opportunity to increase the FFS to increase the overall industry budget.

BICWA

- Represent and be the peak industry body for the beekeeping industry, both commercial and hobbyist beekeepers.
- Investigate other options for an industry QA program.
- Further research the opportunity for an industry insurance scheme.

WAAS

- Continue to represent hobbyist beekeepers and provide insurance cover, training, education and support.
- Investigate opportunities for a basic quality assurance program for hobbyists.
- Promote food labelling laws and requirements to members to protect the consumer and ensure traceability.
- Follow up local councils to enforce local beekeeping laws (registered hives) and food labelling laws at local markets and farm gate sales.
- Promote the importance of hive registration, the benefit to industry and the potential impact of unregistered hives on industry.
- Liaise with beekeeping suppliers, training organisations and other stakeholders to promote the importance of hive registration and to ask for proof of registration prior to supplying a service or product.
- Investigate incentives for people to register their beehives through discounts for supplies, training or hive registrations.
- Collaborate with BICWA and DPIRD to develop an online training course for beekeepers and to develop WA specific You Tube clips on important beekeeping practices.

Industry structure

- Ensure there is one united voice to represent and advocate on behalf of industry and that everyone is working towards a common goal.
- Investigate other industry structures including Vegetables WA to see if it could be applied to the industry.
- Develop a structure with BICWA as the peak body, APC as the collector of funds, and WAAS continuing to represent amateurs.
- Investigate a more equitable structure that allows other groups/ sectors to feed into BICWA and that would represent the interests of commercial, semi commercial, and hobbyist beekeepers along with other stakeholders.
- Determine the roles and responsibilities of each group to avoid duplication of activities.
- Investigate the feasibility, budget required and opportunity to employ a Bee Industry Executive Officer to grow the industry, advocate, and oversee its activities.
- Investigate options to raise industry funds through an increase in the FFS, and other options.
- Engage and communicate with all beekeeper groups throughout the process.
- Engage with government to access further funding for industry growth and development.
- Collaborate with WAAS and DPIRD to follow up on unregistered hives to capture more industry funding.
- Ensure hobbyist beekeepers are also represented.

Data collection

- Investigate the various options suggested by respondents and determine the best mechanism to collect production data.
- Liaise with DPIRD to determine if production data could be collected through the hive registration process.
- Determine the production data that industry would like to collect.
- Ensure that data is kept private and confidential.
- Encourage beekeepers to report production data and promote the benefit to industry.
- Investigate the development of an App for self-reporting of data anonymously.

Marketing and Promotion

- Develop an industry-led marketing campaign that focuses on the clean and green image of WA's natural honey to target local, intrastate and export markets.
- Promotion of the antimicrobial and antibacterial properties of honey to help increase the price of honey.
- Promote WA Jarrah honey to the world (as it is better than Manuka).
- Raise awareness of the unique status of WA honey through the story of honey and provenance.
- Collaborate with the state government to promote WA honey and other by-products through state focused promotional campaigns like 'Buy West, Eat Best' and events.

Markets

- Research export market opportunities into Asia, Middle East, Japan, Singapore and America.
- Investigate export opportunities for smaller commercial beekeepers to collaborate and target the export market.
- Target premium markets with Jarrah and Marri honey and promote its value.
- Collaborate with government departments to target export markets and to promote WA honey.
- Investigate potential markets for by-products – pollen, propolis and venom.
- Lobby government on the impact of honey imports – risk and cost to industry.

Resource access / management

- Push for a review of the current apiary site management system and tenure to ensure it will benefit the industry.
- Lobby DBCA to open up more apiary sites for beekeepers.
- Liaise with DBCA to establish a fairer and more equitable system that will allow all commercial beekeepers access to apiary sites.
- Put forward some of the respondents' ideas on the allocation of apiary sites including the opportunity to share sites through the establishment of a program similar to the Rottneest boat moorings.
- Determine if there is an opportunity for BICWA (peak body) to liaise with government departments and private landholders to broker other potential sites on behalf of beekeepers.
- Push for DBCA to review their burning options, frequency and timing of burns and the impact on flowering and honey production.
- Push for scientific based research on the interaction between introduced bees and native bees to help lift the current moratorium on National Park access.

Bee Breeding

- Develop either an industry led or encourage a private Queen Bee breeding program to supply the local market (both commercial and amateurs), national and export market.
- Investigate bee breeding programs for breeding varroa or AFB resistant bees, and more docile bees.
- Investigate the options to import new genetic material for breeding and for disease resistance to ensure the ongoing viability of the industry.

Biosecurity

- Maintain the industry's disease free, and clean and green status.
- Push for DPIRD to be more stringent in enforcing hive registrations to protect the industry from incursions.
- Promote the importance of hive registration, the biosecurity risks to industry and the benefits to industry in being registered.
- Collaborate with the fruit and vegetable industry to determine the feasibility of an irradiation plant based in Western Australia.
- Be proactive to identify other potential diseases/pests that could threaten the industry, and develop the knowledge to manage and control these in the future, and keep industry informed.
- Investigate the biological control of wax moth and the legislation changes required, and the industry benefit.
- Determine the most effective way to control chalk brood and manage bees.
- Eradication and control of small hive beetle in the north of WA.
- Liaise with DPIRD and DBCA to establish a dedicated area for hives with AFB for research purposes: to monitor and breed resistant bees and provide incentive for beekeepers to declare they have AFB.
- Investigate the use of antibiotics to treat AFB and the possibility of relaxed regulations around the use of antibiotics.

Pollination

- Educate and raise awareness of the benefit of bees for pollination in the horticultural industry.
- Identify the value versus the true cost of paid pollination to assist beekeepers to promote the practice and to help horticultural producers to better understand the financial reward.
- Investigate the opportunity for BICWA (or the peak body) to oversee a pollination hub that connects growers with beekeepers.
- Undertake research to determine the yield benefit in bees pollinating horticultural crops and/or collate data to back up the claim.
- Determine the most effective way to pollinate horticultural crops through hive placement and density etc.
- Encourage beekeepers to value add through collection of honey and pollen, while pollinating crops.

Government

DBCA

- Investigate opportunities to open up more apiary sites for beekeepers.
- Continue to manage apiary site access.
- Develop a computer system for apiary sites that shows site availability and reserved sites.
- Review the apiary site access system and tenure to ensure it is fair and equitable and provides all commercial beekeepers with an opportunity to access sites.
- Investigate a range of options on the allocation and use of apiary sites.
- Openly communicate with beekeepers in regard to burning.
- Investigate alternative ways to conduct burn offs instead of burning massive areas – low intensity burns versus high intensity.
- Review burning options, frequency and timing of burns and the impact on flowering and honey production.
- Review the moratorium on National Park access and the interaction between introduced bees and native bees and the impact on the resource.

DPIRD

- Continue to oversee biosecurity and manage incursions.
- Update the antiquated payment system for hive registrations to an online/ automated system.
- More enforcement around unregistered hives and the collection of additional industry funds.
- Conduct hive inspections (random entry powers) to address bee health issues, biosecurity risks and honey testing for residues.
- Update the 'Floral Guide' that was originally published by DPIRD in 1969.
- Determine if production data could be collected through the hive registration process.
- Compile regular reports for beekeepers on flowering and honey flow to enable beekeepers to follow the flowering and to assist with hive placement (DBCA and DPIRD).

Research and Development

- Continue to develop the CRC research into the medicinal value and properties of the different species of honey.
- Push for the certification and commercialisation of the Optical Density Assay (ODA) test, developed by CRC, to test the TA of honey.
- Investigate the development of industry standards for beekeeping equipment and materials used.
- Collaborate with industry and researchers and put forward research suggestions:
 - Interaction between introduced bees and native bees and the impact of introduced bees on national parks – scientific evidence to dispute the claim and help lift the current moratorium on access to National Parks.
 - Scientific data on 3km distance rule between apiary sites – could it be reduced to open up more apiary sites?
 - Understand the effect of bee pollination on native vegetation as a surrogate pollinator, and their ability to increase food availability for threatened species like black cockatoos.
 - What impact do pesticides and herbicides have on bee health?
 - What impact do angry wild bees have on hives?
 - How to remove bees from supers, and the different options?
 - Traceability in honey and ability to prove provenance.
- Identify the exact properties of Jarrah honey to discover the active component to assist in determining the activity, price and market (similar to Manuka).
- Medicinal value/ properties and health benefits of all honey species.
- Clinical trials for honey and other by products to address burns, skin blemishes, wound dressings etc.
- Bioactive properties and the potential to develop wellness products.
- Essential oil opportunities to target the cosmetics industry (similar to Manuka).
- Nutritional and health benefits of propolis, pollen and venom.
- Test Marri for low GI.
- Understanding the crystallise factor when honey flows are slower.
- Controlled burns - burning frequency and timing of burns and the effect on species diversity and impact on flowering patterns (smoke) and honey production.
- Alternative ways to conduct burn offs instead of burning massive areas – low intensity burns versus high intensity.
- Yield benefit in bees pollinating horticultural crops.
- Most effective way to pollinate horticultural crops through hive placement and density etc.

Other

- Promote value adding/ diversification through the production of by-products in pollen, propolis and bee venom and assist beekeepers to develop markets.
- Investigate new technology/ automation options to assist beekeepers to improve production, reduce the workload, and create efficiencies, and promote through events or newsletter articles.
- Research options for an environmentally friendly beekeeping operation example that has limited emissions and carbon footprint.
- Collaborate with WAAS and DPIRD to develop an online training course for beekeepers and to develop WA specific You Tube clips on important beekeeping practices.
- Liaise with beekeeping suppliers, training organisations and other stakeholders to promote the importance of hive registration and to ask for proof of registration prior to supplying a service or product.

Stakeholders Questionnaire

APC Beekeepers Producers Committee questionnaire – Final

Introduction, provide name (*person completing the phone interview*) and explanation, as follows:

- ➔ Agknowledge is an independent consultancy contracted by the APC Beekeepers Committee with representatives from the commercial and hobby beekeepers and honey producers.
- ➔ In reviewing its strategic plan, the industry is seeking to develop an understanding of how it has and can provide maximum value to you as a producer and member, and with the aim to grow the productivity and profitability of the WA Bee and Honey industry.
- ➔ Your name has been supplied to us by the Bee and Honey Industry Group.

Request a short conversation.

1. a. How would you classify your role in the honey and bee industry?

	Beekeeper Commercial	Beekeeper Hobbyist	Industry support	Packer	Retail	Research	Other
# hives							

b. Please provide your opinion on how many hives should be considered recreational/hobby beekeeping?

# hives	<5	<10	<20	<40	<50	<100	Other

2. Please indicate which organisations you belong to, are a member of, or receive information from? *multiple*

APC BPC	BICWA	WAFF Bee	WAAS	WABA	DPIRD	CRC	Agriutures

3. What is your understanding of the roles and responsibilities of each of the groups involved in the bee industry within WA? *Engage in a discussion to identify the most important (top 3) and other mentions.*

4. Can you please describe any examples where your mentioned body has made a positive benefit that you would attribute to services your organisation has provided you?

5. Please rate the level of responsibility each of the industry bodies have in the following areas:

(Rate 1 for primary, and 2 for secondary roles, or N/A)	APC	BICWA	WAAS	DPIRD	Other	N/A
a. Industry advocacy						
b. Being the industry's peak body for WA						
c. Resource access and/or resource management						
d. Policy and planning						
e. Biosecurity (pest and disease surveillance)						
f. Industry publications / communication						
g. Industry education (training)						
h. Market development						
i. Marketing and promotion						
j. Research and Development						
k. Market forecasting						
l. An Industry Insurance scheme						
m. Develop and maintain a QA system						
n. Other suggestions						

6. How would you like to see the management of Western Australian bee industry improved? (ie structure)

7. Currently the industry bodies are managed by industry volunteers with limited time, and therefore to better manage the industry into the future with benefits to benefit all those involved:

- a. Would you support the employment of a 'Bee Industry Executive Officer'?
- b. Currently industry members pay a Fee for Service contribution via the APC; would you be prepared to increase this Fee to support industry sustainability and growth?
- c. Do you have other ideas on how to fund the industry development?

	Yes	No
a		
b		

Stakeholders Questionnaire

APC Beekeepers Producers Committee questionnaire – Final

8. Please rate each of the following challenges for the WA bee industry?

	(Rate 1 as low impact, 5 high)	1	2	3	4	5
a.	Resource access and/or resource management					
b.	Resource access around urban management					
c.	Bee population and / or bee health					
d.	Hive registration, management and performance					
e.	Industry data (reporting of quantitative data)					
f.	Access to advice, technology and industry information					
g.	Impact of climate					
h.	Social licence					
i.	Carbon footprint (emissions)					
j.	Labour access, cost, management					
k.	Training and education					
l.	Biosecurity - pests or diseases risk					
m.	Profitability					
n.	Honey Price					
o.	Pollination of crops and horticulture					
p.	Bee breeding					
q.	Competition from imported honey and other by products					
r.	Adulterated honey					
s.	Supply issues on the local market					
t.	Development of export market					
u.	Promotion and marketing (lack of industry led marketing)					
v.	Industry regulation and Government - engagement					
w.	Industry being able to work collaboratively					
x.	Quality assurance/ chain traceability					
y.	Understanding the industry contribution to WA economy					
z.	Other					

9. What do you believe are the two (2) main opportunities, and two (2) barriers for the WA bee and pollination industry in the next five years?

10. Reporting of production figures - currently there is little data available:

a. How can industry capture this information?

b. Producers only - would you readily share this information? Why/ why not?

Yes	No

11. Can you suggest 2 areas of research that you would like industry to undertake in the near future?

Research topic	Rating
1.	
2.	

12. Do you have any other feedback you would like to contribute to build your industry's strategic plan?

Complete by thanking the participant for their time and ask for any other comments.



Question 1

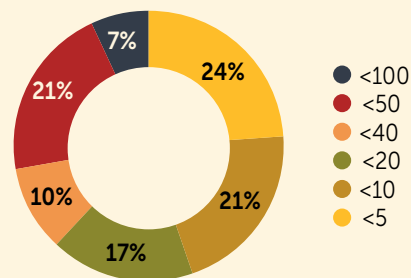
Beekeepers Interviews

Q1a. How would you classify your role in the honey and bee industry?

Thirty-one beekeepers were canvassed for their views and input, including commercial and amateur/ hobbyist beekeepers. This consisted of 21 commercial beekeepers whose hive numbers ranged from 96 up to 1400 and averaged 510 hives each. They represented more than 10,000 hives. Ten amateur/ hobbyist beekeepers were interviewed and they accounted for a total of 141 hives which ranged from 5 up to 50 hives, with an average of 14 hives.

Currently an amateur or hobbyist beekeeper is classified as someone with less than 50 hives in the WA industry, however the respondents believe it should be less than that as a beekeeper is producing far more than they can consume and it becomes a saleable product which impacts the price of honey that other commercial beekeepers receive. While 86% of respondents are supportive of it remaining under 50 hives, more than 57% of those keepers would like it to be classified as less than 20 hives, with 22% of them pushing for less than five hives. Only 12% of respondents would like it to be more than 50 hives as they argue that it is still only a part time job and you can't make a living out of 100 hives.

Q1b. How many hives should be considered recreational / hobby beekeeping?



NO OF HIVES CONSIDERED HOBBY BEEKEEPING



Comments

- Anyone who is making money is not an amateur – when you start making money from your hives then you become a professional. (3)
- You can't consume honey from 5 hives, after 5 you are either giving it away or selling it. So less than 5 hives; at the moment it is 50 hives which is definitely a part timer. (4)
- 10 or less, any more than 2-3 hives you are making enough honey to sell, over 10 hives people are making money out of it. (5)
- It should be 5 or less, if more than 5 hives they are actually selling honey. (7)
- Anything over 10 you are getting into commercial numbers. (9)
- Everyone wants to be a beekeeper, if they have a couple of beehives and if they are selling honey or producing more than they or their family can eat, then they are commercial. (10)
- Less than 100, I doubt some are even registered and they have other jobs (work away on mines). They need to have a substantial amount to make it viable and if you have another job then they are hobbyists. They should all be a member of the APC and should be registered for risk of incursion. (11)
- Less than 50 is a recreational beekeeper, if more than that it is no longer a hobby it becomes an obsession. You do need to have 400 for a viable business to make money and make a living. (12)

Q1 Cont.

Comments Cont.

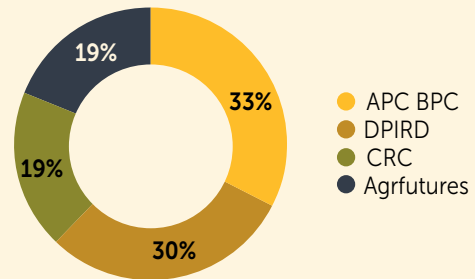
- Less than 100 is a recreational hobby where they are producing a little bit of money, but you can't make a living out of 100 hives. (11)
- It depends on what they are doing, if they are also packing then it would be a full-time job. Trying to put a number on something is hard for hobby beekeeping. If it is a full-time job then they are commercial beekeepers and it is not a hobby. If they are not working full time, it is a hobby. (14)
- Less than 20 but in saying that some have more than that and it is still a part time hobby as such as 95% still have a normal job. If they derive a full income that should be considered commercial and if their ATO return is 100% bees. If not, then they are a hobbyist. (15)
- Less than 20 hives – if it is more than that you start to operate more seriously and produce more than you can produce for yourself. (16)
- Less than 50 – it's when it starts to get higher, it's not a hobby anymore and becomes a commercial operation. (17)
- Any more than 1 and then they start selling honey, take up sites that they shouldn't be able to use, and that affects our price in selling honey and they are promoting their honey on social media and undercutting the commercial producers. There is no regulation. (18)
- 50 or less – with the price of honey these days you can make a decent income off 50 if you are packing. A commercial beekeeper is anyone who sells honey because they are making an income. (19)
- Less than 50 as you have got to have a decent amount of hives and some flexibility. (21)
- Less than 5-10 no more, I have been up over 20 and appreciate if you are good you can get a considerable amount of honey off that – 60-150kg per hive if you move around, use 100kg – nominal. If you are travelling and shifting you can do 1000kg but 10 hives in the backyard and not doing anything 300kg – it is still far more than you can consume yourself and give to friends. Beekeepers are there to make a living and others are eating into people's commercial likelihood. (22)
- Less than 20 – any more and it is difficult to manage, and not so much of a hobby. 10 hives keep me busy on the weekend. (23)
- Below 40 – but it depends where you are, if you live close to the coast like Cervantes where you get regular honey flows 40 hives could sustain an income whereas not so much in other areas where there is not as much honey flow. I don't sell anything, I give it away. (24)
- Less than 40 and probably less than 20 – anymore and you are starting to follow the practices of a commercial beekeeper rather than a hobbyist. (25)
- Under 20 because people can't manage them well above that. (26)
- Up to 5 hives, after that you tend to have more honey and you need to find a place for the honey. If you are going to sell honey there is a whole lot of regulations you need to abide by. I take donations for honey and donate to charity. (27)
- The state government currently defines commercial at 200 plus hives and that's where it should stay. The point where you don't have other sources of income and can make a pure living off bees is about 300 hives. The 200 mark puts it at a majority of income from bees but you still need top up income from a second job. Below 200 bees hives it is a secondary source of income. (28)
- Anything under 10 hives is a hobbyist, between 11- 199 – semi commercial unless pushing them anything over 200 is professional. (20)
- Less than 40 as it is easy to be a recreation, beyond that need to get BQUAL and then you are deemed commercial. (29)
- 10 or less – I can have some at home, and at a friend's – 10 is the number the average guy has time to look after and can afford. Anything above that you are starting to get commercial and produce more than you can consume. (30)
- Anything more than 5 hives, is more than you can consume. (31)



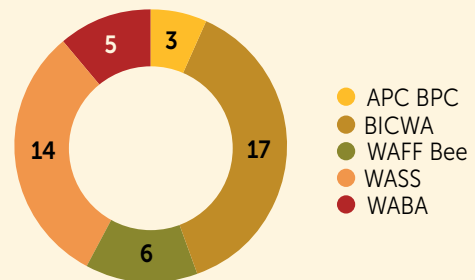
Question 2

Q2. Please indicate which organisations you belong to, are a member of, or receive information from?

More than half of the beekeeper respondents are members of the APC and BICWA which is mainly by default in their payment of the FFS to APC and also following a change in the BICWA constitution all beekeepers are able to become members. They also receive information from those respective groups. However not all respondents were aware of their membership. WAAS also has a good following which also included some commercial beekeepers, not just the 10 hobbyist beekeepers consulted. Other groups also represented include WAFF Bees and WABA. DPIRD, CRC and Agrifutures provide information to about a third of the respondent beekeepers.



BEEKEEPING, HONEY INDUSTRY INFORMATION



BEEKEEPER MEMBERSHIP

Other comments

- WA Farmers has basically folded. (1)
- I don't believe in their duplication and carry on – I thought BICWA would solve all that and I haven't kept up with it all. (3)
- I am happy to join groups, but I am so isolated. (7)
- BICWA just opened up membership, before it was restricted. We get information from BICWA and APC. (8)
- I am not a member and I don't do meetings. I do get Bee Informed. (10)
- WAFF Bees was all about ideas and they didn't go any further, WABA – I have given up as to be a member you need to have input. I would like to be a member of BICWA as there are lots of issues never addressed. I have received nothing, no information. APC - I do get Bee Informed and they are supposed to send on mail but I never receive anything. (12)
- WAFF Bees – I am not renewing my membership because BICWA is taking over there so I will transfer it over. (12)
- BICWA everyone's a member. I was a member, but I am not going to join any until I sort things out. (13)
- BICWA just changed its constitution, so I have just become a member. (15)
- Not a member of any and don't receive any information, I was under the impression I was going to receive information. I only get the bills. (18)
- I have never heard of APC, or WAAS or BICWA. (18)
- Any registered beekeepers automatically become APC members as they pay FFS. BICWA you still have to sign up to be a member, although they have no limitations. (20)
- I have heard nothing from other groups. There are lots of different bodies, only a lot of those bodies are self-centred and don't communicate. That is one of the big problems we are facing you get cliquey groups made up of all commercial beekeepers and they keep everything close to their chest and don't try and spread information. The problem is that they keep information and don't say much and guard their sites and don't tell people much. What they don't realise is that amateur beekeepers outnumber them 3 to 1 and amateurs can cause a lot of damage so it is in their best interests to become more engaged with the amateur side and share more information. It is not like farming where people own their own block of land, beekeepers roam the state. (24)
- BICWA had people talk to us at our meetings, we would have 250 people at our meetings pre-covid. There is lots of enthusiasm for learning about bees and flow hive and women have also come in droves. (26)
- I am surprised there are so many groups, there is a lot of people who have an input into the industry and how they work together must be complicated. (27)



Question 3

Q3. What is your understanding of the roles and responsibilities of each of the groups involved in the bee industry within WA?

There appears to be a lot of confusion over the roles and responsibilities of each of the groups involved in the bee industry within WA. Respondent responses ranged from no understanding or awareness of the individual groups to confusion with so many groups and the differing roles and responsibilities. It appears the majority of beekeepers do have an understanding of the main groups.

Respondents have an understanding that the APC is required by statute and is responsible for collecting the Fee for Service that industry contributes, provides funding for industry research and is focused on biosecurity. The APC also produces the Bee Informed newsletter, and there was some criticism that some of its duties overlap BICWA and there was a perception that it was not very accountable in terms of spending.

BICWA is viewed as being the peak industry body for WA beekeepers by many respondents, or that it should be the leading body that sits above other organisations. It represents industry and communicates with government and is responsible for information flow to industry and the general public about the industry. However, it is viewed as a group more for professional beekeepers than hobbyists.

There is good understanding of WAAS as representative of the hobbyist beekeepers and that it plays an important role in biosecurity and providing educational and training opportunities for beekeepers. They also offer support through insurance cover and provide a social hub and mentoring opportunities through its Bee Buddy groups.

WABA and WAFF Bees also represent the interests of commercial beekeepers, and there was indication that both groups are winding up or were defunct and that BICWA was taking over. A number of criticisms were also raised by respondents that there are too many groups, they are a waste of energy, the secrecy of groups and the confusing messages to government.

DPIRD is seen as the government body responsible for biosecurity and education and training of beekeepers and they oversee the hive registration process. It is more focused on policy, regulation and compliance. DPIRD has the ability to check and inspect hives and honey and respond to any incursion incidents. Concern was raised that it is chronically under-resourced in terms of staff.

Research focused groups that were identified as being involved in the WA honey and bee industry include Agrifutures, the Chem Centre and the CRC.

Groups

APC

- Does biosecurity and funding for research. (1)
- Simply overseeing biosecurity, it's defined by a legislative framework with the functions of biosecurity, education and research. It makes sense that the APC and Beekeepers producers committee is front and centre when it comes to matters involving 'produce' i.e. honey, propolis, wax production, queen rearing, pollen. I believe it should be, and it is not necessarily a role it is fulfilling at the moment. (2)
- Takes money off industry to fund industry given ideas. (3)
- Is pointless but is required by statute. (4)
- The committee that sets the FFS and determines how that money is spent to benefit industry participants and the broader industry. (5)
- Is very focused on biosecurity. (8)
- In pollination and biosecurity which overlaps BICWA. (9)
- Are secret in what they do, you never learn anything from them and they don't disclose where the money goes. They need to get rid of that and get to the root cause of the situation, it's about beekeepers not one cliquey group. (11)
- Biosecurity, training and surveillance and to ensure it is communicated to all members. (12)
- I don't have a good understanding of APC. (14)

Q3 Cont.

APC Cont.

- Exist only for the levy. I have never been involved or heard from them apart from a bill from them. (15)
- Put out a newsletter 'Bee Informed' and determine what the FFS is spent on. (16)
- I don't know too much about them except they represent beekeepers and they work with DPIRD to enhance systems and improve biosecurity. (17)
- Not a clue, they collect FFS. (18)
- Funding distribution. (19)
- Is primarily the levy collector and focusses on biosecurity. (20)
- FFS and some involvement in biosecurity. (22)
- APC, WABA, WAFF Bees no idea. (23)
- Not sure if they do anything different to others. (24)
- I don't have a great understanding other than they collect fees. (25)
- Primarily my knowledge is that they are involved with development of agricultural markets and systems across the board and the BPC is tailored towards the apiaries industry. (28)
- Produce Bee Informed which is very good. (29)
- Main role is to raise levies to fund research and for a possible compensation fund if there is an introduced species and also some government liaison as they have a direct line with the Minister for Agriculture as they come under that portfolio. (31)

WAAS

- Education for hobbyists and meeting groups. (1)
- Have a role in the hobby sector. They are the only one that is clear in what they do and want to do and be involved in. (2)
- Play an important part in biosecurity and the education aspect of new people in industry and provide a social hub. (3)
- Beekeeping for fun. (4)
- Is good at training, educating and providing a meeting place for hobbyists. (5)
- Has Bee Buddy groups and different chapters to allow people to go to a local one and talk to others in the region. And they also have Bee Buddy lists so if you have hives you put your name on it and then hook up with others which is like a support group. (9)
- Hobby beekeepers but they do have some commercial people involved, growth has been great since the advent of flow hives. (9)

- All amateur beekeepers; what they learn is from the professionals, and they have meetings. (11)
- Look after the recreational sector to ensure they create an environment that is approachable and will ensure they're using best practices in looking after hives etc. as it can impact on biosecurity. (12)
- Hobby beekeepers more so. There will always be a place for WAAS. (14)
- Amateur beekeepers. (16)
- Mainly backyard beekeepers up to 10 hives. (17)
- Is made up of amateur beekeepers and provides information, support and is focused on the social side rather than monetary. (20)
- Provide part of our payment, public liability insurance and network for hobbyists beekeepers. (21)
- Members are amateurs as well as professionals. (22)
- They have stepped up to the mark and have a membership base of people with a common interest in keeping bees, both commercial and amateurs. They have a significant role in terms of education and networking and they are the single most important organisation which brings together both parts of industry. (22)
- They facilitate training, Bee Buddy groups and provide general information when it comes to hand for all beekeepers but mostly hobbyists are the ones who attend training and meetings. (23)
- Inform and train hobby beekeepers to be responsible, and provide information. (25)
- Are great, focus on the hobbyists and have meetings where they get a speaker on different topics to educate people. They also have Bee Buddy groups all over the place which are social groups where you learn lots about the industry through talking with others. (24)
- To educate bee hobbyists who could become commercial. They have really got into education and running courses for first time beekeepers and also offer further courses. They also have meetings which are inspirational and well organised and there is an emphasis on education. (26)
- They are mainly made up of hobby beekeepers or ex apiarists. They are also a support group for people starting because they run interactional groups where they have buddy systems that allow people to learn from each other. (27)
- Are there for the hobbyists. (28)
- Primary role is keeping hobbyists informed and provide initial training. (29)
- Is directed at hobbyists and is their voice with regard to talking to other groups. (30)

Q3 Cont.

BICWA

- Mouth piece or voice to government. (1)
- Don't know what they intend to be or responsible for. (2)
- Peak body of WA beekeepers. (3)
- Is now the peak industry body. (4)
- Is the go to for industry engagement and government engagement. It is the key pillar doing all the lobbying with the government departments, Hort Innovation, CRC. It is a game changer having BICWA develop over time; it is the leading entity for the industry. (5)
- The peak body now and is responsible for information flow to industry and the general public about the industry. (8)
- They should be the leading body. (9)
- I get a little bit of information from them but I am not a member. They need to start getting their teeth in the organisation and step up to government. (11)
- To represent all beekeepers on all matters directly or indirectly affecting operations. (12)
- Meant to do the whole state and the rest is WAAS which is amateurs. (13)
- Basically the WA body that sits above other organisations, and is now going to be the lead organisation. (14)
- Is now the main overarching body. (15)
- Is the peak body who should be communicating with government. (16)
- Umbrella overarching entity that is being created to look after all these different associations with the view to having a balanced unbiased view and provide a method to allow people from different associations to be represented. Previously there was no one to represent all sections because they all had different views and needs. BICWA is essentially integral if not the peak body representing all these associations which will help assist in liaising with grants, government issues etc. (17)
- I don't have any idea. (18)
- Representation and lobbying. (19)
- Is the primary industry advocate and lobby group. (20)
- Professional beekeepers. (21)
- Very active in industry and provide a lot of communication. (22)
- WA industry body peak body. (23)
- I am not sure, there is a waste of energy in all these groups. (24)

- They seem to want to be the industry leader/ champion and senior organisation of operators. (25)
- Is very important as it deals with how to look after bees and bee health and science. (26)
- Look more at the development and future of the industry with what are we doing now and where are we moving forward. (28)
- The most important thing is BICWA in my opinion as all bee groups come under one umbrella so government can liaise with one organisation rather than each pitch their own idea as government wasn't sure who to listen to. (29)
- Looks after the industry matters which includes liaison with the government agencies with training, and they also run educational courses through conferences. (31)

DPIRD

- Biosecurity and education of new beekeepers and registration. (1)
- Legislative attachment to biosecurity and that is their predominant sector and some education and training roles. (2)
- Should be running the show in terms of biosecurity management, hive inspections and border security - they should have a charter to support industry and ideas to further the industry. (3)
- Is about compliance. (4)
- Pest control, inspect hives, inspect honey. (7)
- Huge responsibility for monitoring and control of any disease/ infections and they could play a better role. They run responsible beekeeping courses for both commercial and hobbyists. (9)
- Hive registration. I have tried to get someone out to look at someone's derelict gear. It took 2 years to get someone to look at it and that is not good enough. (10)
- They were alright, they did a few good things. They should have apiary inspectors and don't inspect hives without the beekeeper being there. (11)
- Exotic diseases and incursions and hive registration. (13)
- Biosecurity and they do green card training for Dieback. It would be good if they provided more education and networking. They don't do a lot, but good if you need to contact them. (15)
- Biosecurity. (16)
- Biosecurity and hive registration. (18)
- Biosecurity and education. (19)

Q3 Cont.

DPIRD Cont.

- Has responsibilities around regulation and response to incidents. (20)
- Supposed to monitor the beekeeping industry but chronically under-resourced (biosecurity). (21)
- Biosecurity and hive registration not much else. If alarm bells are ringing or there are funny bees or wasps or disease, then you hear from DPIRD. DPIRD has been decimated with staff numbers. (22)
- Regulatory body where you register hives. (23)
- Role in putting out good information regarding the biosecurity and regulations. Do we need that repeated from other bodies? (24)
- Is critical and a great supporter of the industry and they really interact with government and government listens to them. (26)
- Manages the biosecurity risks and keeps us informed about that hopefully. (25)
- Is the main government instrument of agriculture and is involved in policy, regulation, licencing, and biosecurity. (28)
- They look after industry through hive registrations, they manage the biosecurity risks etc. and do a lot of investigating into that. (30)
- Assist the beekeeping industry with the extension work, disease control and funding to help implement programs that BICWA will do. (31)

Research organisations

- CRC their main focus is research and marketing. (2)
- CRC – research. (3)
- CRCs come and go. (4)
- CRC – we send samples of honey when production kicks off to test medical grade honey to analyse for research purposes. (7)
- CRC – research and have up to 12 different PhD projects produced at any one time which is fantastic especially with bee venom and they recently had a national conference online. (9)
- CRC – research. (13)
- CRC is more university development and research. (16)

- CRC is undertaking focussed research on honey, bees and the market. (25)
- CRC undertakes much needed research. (29)
- CRC – is about finished. (31)
- ChemCentre are a drag on progress – need to find an alternative research support body (normal commercial organisations would not put up with their behaviour). (4)

Agrifutures

- Federal grant disher outer. (4)
- Research. (16)
- Investigate research projects and what is required. (31)

WA Farmers Bees

- Is obsolete these days, the membership was too high which put everyone off and the way the Executive ran the show without asking for feedback from constituents. (3)
- Is now defunct. (4)
- Used to be the main advocate for beekeepers in WA primarily and they were focused on large scale commercial beekeepers. (5)
- Advocacy. (8)
- Have a high turnover and can't get traction with them. (9)
- Getting wound up. (15)
- Predominantly commercial beekeepers. (17)
- They talk amongst each other and make sure the other is happy. (24)
- The analogy of a union of commercial beekeepers involved with developing things for its members. (28)
- WABA and WAFF are duplicates of each other in representing commercial beekeepers and I don't think there is a need for them now that BICWA has taken it all over. (14)
- WAFF and WABA are basically looking after their own commercial members. (25)
- APC, WABA, WAFF Bees no idea. (23)

Q3 Cont.

WABA

- Is a result of people pissed off with WA Farmers who duplicated it, although they were good at organising field days and had the knack. I am not sure if they are still going. (3)
- About to be defunct. (4)
- Are traditionally more of a semi-commercial organisation for people trying to transition from hobbyist to commercial. (5)
- WABA and WAFF are duplicates of each other in representing commercial beekeepers and I don't think there is a need for them now that BICWA has taken it all over. (14)
- Treated as a commercial beekeeper group that supports members, it is not as powerful as it used to be, only 30 members. (15)
- Slightly larger amount of hives up to 100 and they are slightly more involved in terms of what they produce. (17)
- Are still in discussions – I am not sure what the future holds. (15)
- WABA represents semi-commercial beekeepers. (28)

Other

- At the moment it is hard to get anyone to do anything. (4)
- I have no idea about any of the groups, other than DPIRD who has assisted me at times with sites. (6)
- I am not really involved in any groups or a member because I am so isolated. (7)
- I have nothing to do with meetings. I used to go to meetings but the same stuff is brought up every time and nothing is done. The beekeeping industry is not big enough for anyone to take notice and the industry is not worth squat, it is not a big enough organisation or industry. (10)
- The pay system is the most antiquated system. I do usually pay but haven't paid fees this year because why should it be so hard to pay money. There is not even someone you can ring up. I have no issue with the fees, it is the system with so much stuffing around. It should be an automated system – it is not complex. (13)
- I wouldn't have clue. (10)
- I have asked for clarification on money and where that is spent but I have never been told. (10)
- They should have one group not split organisations. If you address government with a multitude of different organisations they won't listen to you, it has got to be one group and one only and all beekeepers have to be a member. (11)

- Overall, the biggest problem is communication within industry. That is why BICWA has evolved, all groups are trying to do the same thing and if you have independent groups going to government it is not good, they need to come together and be united as one group. (12)
- I tend to keep away from involvement in groups, I can't be bothered with the politics. I want to do my thing and get the job done. (18)
- That is where the confusion comes in, there are lots of groups. Industry advocacy is something most of the groups are involved in. (23)
- How engaged is our amateur audience is in what is considered industry? When it comes to vote, priorities are very much focused on the commercial end of town. (20)
- Baggage of WAFF and WABA – only left to those in circles who saw benefit. (20)
- I think the fundamental issue here is that hobbyists simply don't see themselves as part of an 'industry'. In discussions with my peers, we estimate that about half of the hobbyists are not registered with DPIRD and the other half (3,800 or so) are. A very small minority of registered beekeepers, who are also 'hobbyists' would be able to differentiate between DPIRD and the APC, presuming they are one and the same. Only about a third of registered beekeepers belong to WAAS. To me this indicates that the majority of hobbyists are not interested in connecting formally with organisations associated with their hobby. The various 'bee' social media groups seem to be the way that a big group of them stay connected, but their exchange of information through these channels is largely focussed on immediate problem solving. I think it is very difficult to connect hobby producers into an industry when they simply don't see themselves as belonging. In a similar vein I wonder if people who might grow potatoes in their backyard see themselves as part of the potato industry. Hobby beekeepers are probably not much different. (25)
- I didn't realise there were so many groups (I had to Google them) or that we had a need for so many, I wouldn't think so but they all have their own focus areas and the others are more commercial. (30)



Question 4

Q4. Can you please describe any examples where your mentioned body has made a positive benefit that you would attribute to services your organisation has provided you?

Beekeepers believe BICWA has positively benefitted their operations in terms of lobbying government on a range of issues which include apiary site management, burning, native forest logging, clearing of apiary sites and track access and opening up national park access. These are just some of the examples raised where BICWA liaised with DPIRD, DBCA and DWER on behalf of industry. Other examples of positive benefit include the educational benefit of the annual conference, provision of information and finally the ability to bring all the groups together under one umbrella to ensure industry has one voice.

The Bee Informed Newsletter, developed by the APC was also viewed as benefiting beekeeping operations in providing information on industry issues and seasonal updates. WAFF Bees and WABA were also identified in terms of their educational support, networking opportunities and advocating on behalf of industry.

According to respondents, WAAS is critical to sharing information mainly for hobbyist beekeepers who value the group for its social aspect and support network. They focus on education and provide invaluable training courses, and they also host monthly meetings, Bee Buddy groups, and guest speakers and practical demonstrations that cover issues like biosecurity, animal welfare, hive keeping etc. The Smoke Signals newsletter is also well received and is still viewed as an interesting read for commercial beekeepers.

DPIRD's role in biosecurity has also benefited beekeeping operations in terms of preparing for and preventing any exotic incursions in WA. This includes Biosecurity Officers, preparedness exercises and sentinel hive programs and eyes around the Ports, along with communication of biosecurity alerts to beekeepers. Particular incidents highlighted include the management and control of red dwarf honey bee incursion in a shipping container, and also deformed wing disease which luckily was a false alarm but DPIRD investigated promptly and conducted testing. Other beneficial activities undertaken by DPIRD include research into watermelon pollination and training courses for beekeepers.

Research conducted by CRC and the ChemCentre has also benefitted WA beekeeping operations with an increase in the price of honey following testing of honey for medicinal properties including the antimicrobial and antibacterial activity. Unfortunately, there was also criticism that research reports are yet to be released.

Another interesting positive benefit for the beekeeping industry as a whole, and for commercial producers in particular, that was raised by a respondent was the need for involvement in sharing of knowledge, educating and supporting hobbyist beekeepers. This is believed to be the best insurance policy in order to avoid any disease or pest outbreaks, as hobbyists are the first line of defence.



Comments

BICWA

- Getting traction on apiary sites lobbying and prescribed burning impact. (1)
- Starting to make some progress but it has to get some focus – the most important things to a beekeeping business are price, biosecurity and resource access. (4)
- Pushed hard for development and had input through collaboration with DBCA for enhanced apiary site management through bee portal. (5)
- Pushed hard on DWER and DBCA for granting of apiary permits to be tied to clearing permits to make the site useable and allow us to roll back scrub. Through BICWA's insistence the system is now in place where they grant exemptions for clearing permits for beekeepers which has made it less likely to run foul of regulation. (5)
- Burning and logging and opening up of national park access, they also recently developed a regional engagement committee where one beekeeper represents the region as a direct consult with DBCA – one voice through one person. That has a direct positive benefit to our business as we know where to go. They are doing their best to be a leader so you don't have lots of individuals going to heads of departments and can do it as a group which is beneficial for industry and makes industry look more professional. (12)
- Been in talks with DBCA about sites to get a better understanding of what is allowed and not allowed on sites i.e. clearing and tracks, and access. (13)
- Heavily driving this role in ending of native forest logging and continued work on resource management. (19)
- The BICWA conference – great educational opportunity. (21)
- Do send out information every now and again that allows me to follow what is happening. (23)
- Assists with their liaison with DBCA and DPIRD in lobbying both departments. DBCA is really becoming very sympathetic to the bee industry and developing new platforms for apiary site management and ease of apiary site transfers and being able to lease apiary sites to other beekeepers. (31)
- Had an annual conference where they had speakers come along which was educational. (31)
- Has been of positive benefit bringing all of the 4 little groups together as one as it helps everyone as they are not all doing the same job. (31)

APC

- Have a newsletter and education is of benefit to beekeepers combined with BICWA. (1)
- Approval of fipronil for exotic incursion. (3)
- Are very important. (8)
- Bee Informed Newsletter produced by APC fund - that is good but in the last few years it has become an average publication as there is not a lot of content, it could be more interesting. It used to have newsy articles and interviews with beekeepers. It does report on research but could have more news and online, so it is cheaper to produce. (12)
- Bee Informed newsletter is useful information. (16)
- Bee Informed newsletter has a lot of information on what's going on in industry and how bees are going from season to season. (27)

WABA

- A few years back that was the main one, they used to provide good education support by way of field days and subject experts bringing expert knowledge to the state which had good outcomes and allowed beekeepers to learn a lot, that has a positive impact on business. (2)
- Positive role, allowing me to connect socially with more semi-commercial guys when up and coming and they facilitated lending a site and more informal mentoring. (5)
- Do social things, monthly meetings and provide networking opportunities which allows for learning from others and also utilising some of their government sites they loan, I have struggled to find suitable spots which is common for a lot of people. (15)

WAFF Bees

- Do a lot of advocacy but not seeing results, not recently as it has practically become redundant. (8)
- Has helped me legally and offered legal representation and they also seem to have more handle on media releases to do with industry. (17)

WAAS

- Smoke Signals newsletter – communication and education through the newsletter. You don't have to be a member and while it is done at a recreational level it is still interesting reading for commercial beekeepers. (12)
- Very schmick and slick organisation that does a monthly newsletter which contains useful information. (15)

Q4 Cont.

WAAS Cont.

- I go to meetings for WAAS every month and learn lots and network with other hobbyist beekeepers. (21)
- Does a lot of educational training and has apiaries, guest speakers and demonstrations and cover animal welfare, hive keeping etc. There is also the social aspect where you get to mix with people with common interests and have mentors. (22)
- Training and expertise involved in organisation is very important – monthly meetings they have are critical to passing on knowledge from experienced beekeepers. WAAS was my first port of call when I started, and they provided invaluable training as it is very important to talk to people about the practical aspects and that is where I learnt most from. (23)
- Learning and networking, the other ones quite frankly I don't see much benefit in. (24)
- Training and information are very helpful and the connection with other beekeepers. They provide training but also create a connection with other beekeepers at monthly meetings and bee buddy groups where you get to talk and listen and exchange ideas and help each. (25)
- Hobby beekeepers are in a good place at the moment because of WAAS; they are inspirational and run an education program which is fantastic and booked out every time they advertise. They also hold meetings which are divided into experienced and new beekeepers so they can target people specifically. I have learnt so much by going to meetings and listening to various speakers from experienced beekeepers which are all to do with making sure you do the right thing with bees and look after the side effects of pesticides and make sure that the bees are the actual focus of everything rather than monetary return. (26)
- Through WAAS I have done a beekeeping course and I learnt more from that over a weekend than I have in the two years that I have been doing it. (27)
- Has through the training they provide. They also produce information like the 'responsible beekeeping booklet' which was put together to help when dealing with councils. They provide us with insurance cover. The training is the overwhelming benefit through learning different methods and other processes and it has given me the confidence in keeping bees. Localised Bee Buddy Groups are also a great support group. (30)

DPIRD

- Biosecurity Officer through DPIRD – Federal level. (3)
- Some biosecurity preparedness exercises to allow for the preparation for incursion by exotic pests. (5)
- Control of sites. (6)
- Have a great team and do research in the field – we have worked with them on hives and with watermelon pollination and learnt a lot by working with them, they took pollen, honey and honeycomb samples. (7)
- Sentinel hive programs to address quarantine issue – eyes around the ports to see if any exotic incursions. (8)
- Been great they offer courses for training staff and provide information about biosecurity alerts. (9)
- Back in the day the Ag Dept would send out Sam Chambers to do floral estimates in the bush and they would send out a notification to say there is good flow / crop etc. and that allowed us as beekeepers to determine where to move our hives to. That disappeared with changes to the Department. They also used to do some great research into queen bee breeding and pollen. (11)
- Training at DPIRD. (14)
- Supplying a green card for dieback approval course. It would have been expensive to do it if we had to ourselves. (15)
- They did a good job with the management and control of the red dwarf honey bee incursion we had. We had a swarm in a shipping container and supposedly it hasn't spread. (19)
- I have also had some help from DPIRD with biosecurity courses about pests and diseases of bees. (25)
- One of the best things DPIRD did a couple of seasons ago - I did a cut out from underneath a sea container and put the hive in quarantine and a month later I noticed the wings of the bees were deformed on all emerging brood. My first concern was that it was the first case of deformed wing disease in Australia, a devastating disease to industry. I was devastated that I could be dealing with a potential outbreak. I rang DPIRD and they stepped in and sent some to the lab to investigate and a sample also went to Canberra. The whole process of testing cost in the thousands of dollars but cost me nothing because that is what our hive registration fees and FFS, that we pay as beekeepers, goes towards – biosecurity. DPIRD were very good and got back to me that it was not a disease issues but rather an environmental issue as the brood got too hot. That is a good example as to why people should be a registered beekeeper (not only is it law) as they are there to help, not be the policeman. (28)

Q4 Cont.

DBCA

- DBCA - training through DBCA (green card training) in managing risks of dieback. (3)

Research

- ChemCentre and WA Honey Research Group research – the price of Jarrah honey went up from \$10 to \$30/kg. (3)
- Doing some interesting stuff but the CRC and Chem Centre fight and slow down progress. (4)
- Testing of honey for medicinal purposes, they are great to network with people. (7)
- We have had a lot of support from the CRC in testing the nectar of different species. Liz has a Doctorate in Trees and understands the methods and what we should be doing. That helped us clarify the value of species as it has higher antimicrobial properties than Manuka (in the trial stage) and allowed us to move to a commercial stage. (9)
- Interesting research which could be beneficial in the future i.e. marri on flowering, drone photography to determine how good flowering will be and models of where flowering is best. Scales – testing different scales and monitoring CO2 inside hives which could lead to smart electronic lids that read gases in the hive and tell you certain things. (13)
- Research on antimicrobial activity of honey. (14)
- Has tied into work we did on resource protection and continues to as well, it is a shame they are closing. (19)
- The medicinal properties of WA honey as it helps with premium pricing and if you have jarrah honey a beekeeper can charge more for it, with proper advertising consumers will pay that. (29)
- Charting the flora of WA in terms of what is good, good nectar etc. as it helps with decisions of where to put hives. (29)

Other positive benefits

- It is mostly to do with networking. (14)
- Conferences organised by WABA, WAFF, BICWA and APC. (16)
- The most useful thing is networking as you get to know others and what they are doing and opportunities for productivity improvements. (16)
- Lobbying on behalf of industry is very important. It is a combination of groups on access to forests and preserving native forest is critical, ability to export etc. (16)

- People ask me why I bother with WAAS when I am going commercial, but in presentations I let them know as a backyard beekeeper you are my best insurance policy because if a disease breaks out anywhere, it is a backyard beekeeper that will first see it as by the time it gets to a commercial apiary it has spread so far and wide it is uncontrollable. They are our first line of defence and that is one of the reasons why I teach the backyard beekeepers. If we can give amateur beekeepers the knowledge and training and ability to spot problems and the confidence to talk to DPIRD and other commercial beekeepers knowing they are going to get a positive rather than a negative interaction. (28)

Other comments

- It is hard to say CRC are a waste of time, the research done didn't benefit commercial beekeepers I don't believe. (1)
- CRC – we are still waiting to see reports, they consistently mention they are coming out but we are yet to see anything of real benefit to industry. (15)
- Unfortunately, there is nothing else I can think of, for 2 years there has been a state of flux for the whole industry and that is how we have got to where we have got. (2)
- APC is not as good at communication and very antiquated as there is nothing online. Over east they do have an online system where you can pay online. Here the fees are written on paper and you have to put your details on paper and send it in with your credit card details or a cheque. I am not sure why it hasn't changed. (12)
- I can't identify anything that WAFF or WABA has done that is of significant benefit. (4)
- Otherwise not really, not that we see directly. (8)
- Agrifutures – lots of talk and hype but don't do much. (9)
- Otherwise, there is nothing else that has benefited us in recent times. (11)
- Not really. (18)
- None have really had any impact on me as a beekeeper. I was aware of these groups but had limited knowledge of what they did or the services provided or things they had done for industry. I primarily operate on private land so haven't got into it too much. (20)

Question 5

Q5. Please rate the level of responsibility each of the industry bodies should have in the following areas:

Overall beekeeper respondents believe that BICWA should be the main industry body that is responsible for industry advocacy, being the industry's peak body, responsible for industry publications/ communication, policy and planning, market development and marketing and promotion. With regards to resource access and/ or resource management, BICWA should have primary responsibility for it along with putting forward ideas for industry research and development.

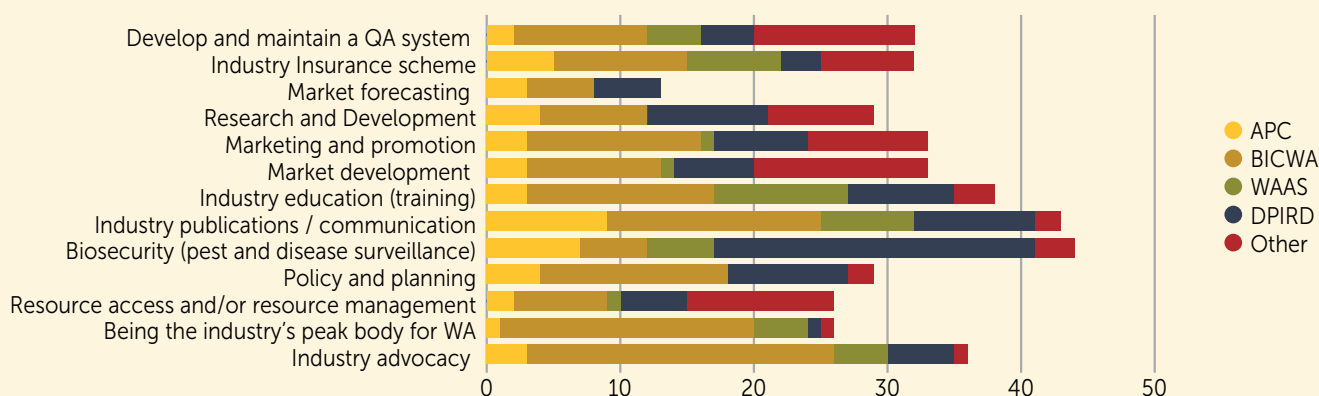
Industry education and training is a role that respondents believe that BICWA should be responsible for with support from WAAS and DPIRD. An industry insurance scheme was also deemed to be BICWA's role again with WAAS supporting hobbyists with insurance. The development and maintenance of a QA system was also attributed to BICWA, with BQUAL in a secondary role and mention was made that WAAS should also develop a system for hobbyists that is more affordable.

It was also outlined that DPIRD should have a secondary role in supporting industry in the areas of industry advocacy, policy and planning, biosecurity, communications, marketing and promotion, research and development and resource access and or/ resource management in conjunction with DBCA.

With regard to biosecurity, it was viewed that DPIRD should have primary responsibility and that the APC has a secondary role in providing funding in the event of an incursion/outbreak along with providing industry publications/ communications.

Individual beekeepers should also have some responsibility for market development and their own marketing and promotion of honey and bee products. Market forecasting was viewed as a challenge, and therefore the majority of respondents believe it was not applicable to industry and a waste of money.

There were a number of beekeepers who were unable to answer this question as they were not aware of the different groups, their roles and responsibilities or they had had nothing to do with them. The majority of these were hobbyist beekeepers which tells a story in itself that they are focused on their own interests.



DEGREE OF IMPORANCE OF RESPECTIVE ACTIVITIES

Q5 Cont.

QA

- WAAS – maybe develop QA system for hobbyists but then again it is probably not commercially viable at \$700/audit. (1)
- QA – CRC will work on that but haven't seen anything about it, that is another story I keep getting told. (15)
- QA – should be one for amateurs because if something went wrong it would wreck the commercial industry. It should be promoted more and developed for amateurs. In other ag industries, if a neighbour does something wrong you aren't really affected so much whereas in the bee industry it is more important. There is a role for WAAS to fill that void and promote it and develop it. (24)
- QA system – as a hobbyist it is not viable and if you are not a commercial beekeeper it is far too cumbersome. (25)

Resource access/ management

- I think it should be function of the FPC as a lot of what we produce is a product of the forest, not just timber. There are no others that are able to have an unbiased role in that sector, it is such a valuable and important part of the industry and it is now subject to almost fraudulent activity. It needs to be separated out now from DBCA. A policy change in the late 90s left us with the legacy of now. There are examples of where an operator hasn't got one beehive but holds 700 apiary sites. I presume they lease them. There's only 4200 sites and it is limiting for the rest of the industry. (2)
- There should be a separate part in BICWA that deals with that. There is a lot they are going to do in the next month with burning. Industry needs to stop spring burning. (11)

Market development

- It is not going to benefit beekeepers, it does in the long term but BICWA should be promoting the industry and the honey packers. (1)
- There needs to be scope limits and the scope limits for BICWA should be apiary farm gate. Market development should be up to individual producers, DPIRD is trying to help a bit. (4)
- Market development - it depends on which market – floral or medicinal or export of queens. We don't have varroa mite yet and have got the perfect set up in Australia for sentinel hives. If a ship comes in with foreign bees, the bees kill them before they come on land. Last year DPIRD set out 5000 queen bees at \$1000 the healthiest bees can only fly 5km so that is why Rottneest is a perfect breeding site. (9)
- BICWA has a role to play in opening markets up. (12)

- Marketing – there should be some across the board marketing of honey but at the end of the day if I am selling honey myself, I am in competition with the other guy. People are reluctant to put money into it, it is all good if it is free but I might not agree with your strategy. (14)
- BICWA should provide industry with a framework for marketing then each individual can tweak it as they see fit. (15)
- Market information – I argue they should be developing markets not necessary marketing as that is a commercial arrangement. (19)
- Marketing should be done by industry. (24)

Marketing and promotion

- Marketing and promotion – DPRD otherwise individuals. It could help increase the price of honey; the CRC should have been doing. In CRC's defence, the industry is poor at coming up with ideas. Researchers are quick to come up with ideas, as they need a paper. Industry is not driving ideas. (4)
- Marketing and promotion – reluctance from industry to build a brand WA, everyone is jealous of everyone's marketing. (5)
- Marketing – need professionals but BICWA could be advised by consultant. (9)

Market Forecasting

- Market forecasting is a very challenging one and that is why no one has taken it on. The main packing houses you take the price. It is not like the wheat and sheep industry where there is metrics that show production and forecast. It is outside beekeeper's hands. (5)
- Market forecasting – I don't see any point in spending money on it or someone wasting a lot of time on it. (14)

Industry Advocacy

- If you have more than one group that is doing industry advocacy, it becomes politically charged – you need to have one group and one voice for industry. Government was getting fed up with it as it was messy before and they will be relieved to have a single peak body. (5)
- APC holds too many secrets, they have got to get rid of the secrecy if they want to take on advocacy. They should be dedicated to beekeepers and the industry. (11)
- DPIRD has a role there to support industry not to lead. (20)

Q5 Cont.

Research

- A lot of money has gone into CRC over the last 5 years for research. There has been zero outcome and I have significant concerns about a bottomless pit of research funding without outcomes. BICWA can support research and hook them up with industry participants and provide ideas. Ideally it would be good if BICWA have their own research arm in the future but funding is the biggest challenge. And they are definitely not in a position to be able to fund it for 5 years. (5)
- R&D – BICWA has a role to provide an environment of support and direction for research. (20)

Biosecurity

- If there is a disease outbreak and beekeepers need to use money if they get the disease. Then the APC can pay for it. We need an irradiation centre here for everyone to use. Otherwise APC pay for transport to the east and back for keepers to access the radiation centre. (11)

Training

- Training – there is a good private course that is run by Foothills Fresh Family Trust, it is an intermediate course at \$149pp for a Queen rearing course basic. (21)
- Training – I don't expect a lobby group to run training but they have an obligation to support or create the environment for training. (20)

Insurance Scheme

- We had an insurance scheme years ago. (8)
- There should be an industry insurance scheme. (11)
- Industry insurance scheme would be beneficial for industry. Government could provide another alternative other than a commercial entity. It would be greatly beneficial. We only have one choice at the moment and that is Elders and they see fit as to what they want as they have the monopoly. (15)
- Insurance – WAAS covers hobbyist beekeepers with their insurance. (21)

Group comments

- If APC wants ideas to fund, why don't they fund first a gap audit for commercial beekeepers who want to sell honey, it would help everyone to lift the quality level and benefit industry. We can help people with that. (8)
- BICWA is the only one I have understanding of, I don't fully understand what APC does. (13)
- I find it strange when you go to meetings, things come up and then ask 'who is responsible to write a letter?' It is all foreign to me, I believe you need to take responsibility for your own business. I sell all honey myself so I do my marketing. (14)
- A lot of us see DPIRD and APC as the same. (25)
- APC has a different role and that is collecting and spending money. (16)
- The only one I am aware of is DPIRD who does biosecurity, all the others mean bugger all to me. (18)
- I don't know much about the others, only that WAAS and DPIRD have a dual role to promote advocacy to government and industry. (24)
- I believe it is in the best interests of commercial beekeepers to be involved with WAAS. (24)
- APC and BICWA are two different groups. APC is fairly focused on commercial beekeeping and they seem to get government funding easier than other organisations. BICWA represents the interests of other organisations like WAFF Bees and WABA. (29)

Other comments

- I can't comment, nothing to do with them. (10)
- I am not fully aware of the groups and roles. (26)
- I don't really know what groups do in full and I am not sure how they work with the hierarchy so I can't really comment. (27)
- I am unaware of the groups and their responsibilities, I have only been involved for a little while and have attended a couple of meetings a month with WAAS. (30)



Question 6

Q6. How would you like to see the management of the Western Australian bee industry improved?

Beekeeper respondents would like to see the management of the WA bee industry improved through one united industry group leading the way. Currently they believe industry is fragmented and that it is stagnated and stale. Comments include there is too much duplication; too many groups and too many voices; mixed messaging to government; along with too many vested interests in groups.

The message is that there should be one united group to lead the industry that will provide one voice and assist with lobbying government, along with raising more industry funds to facilitate improved industry development, growth and have the ability to employ a part time or full-time person to assist industry.

The majority of respondents would like to see BICWA become the peak industry body that represents beekeepers, engages with industry and that is professionally managed by an employee. A structure similar to Vegetables WA was suggested. It is envisaged that BICWA would be the umbrella group that leads and oversees the other groups. APC, given its statutory obligations, will continue to collect funds through the FFS and fund R&D and biosecurity. It is believed it should not be involved in the political side and should fully support BICWA in its activities and through funding.

WAAS as the representative of hobbyist beekeepers, who make up the single biggest group, should not be underrated. One suggestion was that WAAS should come under the BICWA umbrella and oversee the social and education areas. Alternatively, WAAS continues to represent the hobbyist beekeepers and then there also be a commercial arm, that comes under BICWA.

With regard to WABA and WAFF Bees, many respondents believe they should be made redundant whereas others said some provision should be made for them to still come under the BICWA umbrella.

Other structure suggestions include a peak body with representatives from each of these groups to provide feedback and express concerns and present an overall united voice to government. Other similar models include a mixed board that represents all sectors of industry (not loaded with government or commercials) or a skills-based board along with industry representatives. There were a couple of suggestions of establishing a new group that is a remodelling of BICWA, or a new overarching body that allows for government and industry to work hand in hand and is representative of two groups that fall underneath – commercial and hobbyist beekeepers, with everyone working towards a common overriding goal. It is believed that a new body will remove self-interest and responsibility for existing bodies.

An interesting comment from a hobbyist beekeeper was that the structure should be left up to commercials as hobbyist's don't connect with the industry part. There was also a word of warning that it is in the best interests of commercial beekeepers to be involved with the hobbyist beekeepers and WAAS, as they stand to lose more than the amateur stands to gain.

Concerns were raised by many respondents that the current groups have vested interests, strong personalities and infighting and some believe that it won't change. As raised by some respondents the recent BICWA remodelling has made it worse and favours commercial beekeepers and doesn't support a model where other groups can feed into the structure.

In terms of the management of the industry, there was criticism that DPIRD should be more active as there are a lot of beekeepers flying under the radar with unregistered hives which is necessary for traceability and to prevent biosecurity risks. It would also allow industry to access extra funds. Comment was also made that the CRC and ChemCentre are holding back industry progress.

Q6 Cont.

Comments

- Structure – BICWA as the lead group.
- Have BICWA as the façade and all groups behind one front door and put opinion that they are united. It will get miles with government as it is confusing with too many voices, and no direction. It has to be a united voice; it doesn't matter if you have groups behind that but they need to be equal sitting at the table and put forward industry's opinion as united. It doesn't matter if they are squabbling behind. APC collects money and funds R&D and biosecurity. Not the political side of industry. BICWA should be the peak body and should represent everyone. WAAS they are underrated, and they have a big part to play as foot soldiers, they should be included and make them feel wanted as they are doing well with the education side and diseases. (3)
- There is no money to do it, industry has to put their hand in their pockets. I would like to see a professionally managed BICWA with at least a 0.6 FTE CEO. Structure – the APC is useless but it is statutorily required. BICWA as the peak industry body should sit at the top and get rid of APC but how do you do that as there is a conflict of interest. WAAS – they are a major club; we won't change them as they focus on beekeeping for fun. It will come in under BICWA – it could be a social and educational college of BICWA i.e. training and they like their own identity. WAFF Bees and WABA should go and I think they are dwindling. WABA could be educational and another part of BICWA although they failed to get queen breeding sessions off the ground. Otherwise BICWA as a strong peak industry body run by a confident CEO with secretarial support. CRC will wind up; they finish in June. The Chem Centre can continue providing research services, although we are not obliged to stick with them – we could use UWA or Sydney Uni. It depends on what research priorities BICWA comes up with and who is appropriate to do it with. The trouble with university legal departments is that there are massive documents as to who owns the IP. If BICWA had enough money, when projects come up we could get someone who does a Masters or PHD part time doing research projects. (4)
- We need a higher FFS to facilitate improved industry development, if we are serious anyone who is a commercial beekeeper should be paying more per hive as it is not an enormous contribution. That increase on an industry wide basis will have a big difference for BICWA. The funds go to APC, what we really need is for APC to fully support BICWA. There is so much potential but so much historical bickering it is hard to get organised. Structure – WAFF Bees is about to roll up as their purpose is mute now BICWA is doing industry engagement. WABA – may potentially go down that route as well. I see BICWA as to the go to and everything is done there. There is a real positive energy around BICWA from hobbyists to large scale commercial keepers. WAAS need to maintain its independence in my view as what they do, they do well and train beekeepers. They are very biosecurity conscious which protects the whole industry. BICWA has no desire to be involved in that space other than supporting WAAS actions. In my view APC doesn't have a role, they should solely be a body to appropriately distribute funds collected by FFS and for advocacy on biosecurity. There should be more recognition and more money come into industry and be distributed to the entity performing enormous industry development. Potentially pro bono at the moment. (5)
- Get BICWA up and running and taking membership, that then makes WAFF Bees redundant. Unify things more and get BICWA to lead. WAAS remain as it provides more than just a representative body from which a lot of information flows. From commercial point of view make it tidier and perhaps have a sub-committee. APC is working, leave it alone. (8)
- BICWA is the natural lead body and under BICWA there should be other offshoots, get rid of the duplication. Create one main body rather than fragmented so people know where to go to for things; at the moment they are confused as one group tries to outdo the other. BICWA would be lead, APC should form a division of BICWA with a sub-committee within, not a separate entity. WAAS also underneath and DPIRD involved to get things approved in collaboration with BICWA. There should be one voice, one message. We don't need WAFF Bees or WABA. (9)
- It should be one united group, BICWA be the main body, APC follow along and do what BICWA says. WAAS come under BICWA. (11)

Q6 Cont.

Comments Cont.

- I would like to see FFS increase per hive so industry can pay for a full time or part time CEO. With extra funds, they can leverage those funds and apply for grants and other funding. BICWA should oversee biosecurity, training, education, communication, resource development management as the peak body on behalf of beekeepers but funded through the APC who is funded by beekeepers. WAAS should remain the recreational body and still have their own charter. They play a major role in biosecurity and bring on prospective commercial beekeepers. All the groups are linked but all have a different focus. WAFF Bees should be more an associated member of BICWA so they can use their facilities and their knowledge in agriculture but I don't see them playing such a major role as they have in the past. WABA is a splinter group because they weren't happy but I don't see them as a continuing body. Volunteers are stretched way too thin. (12)
- I haven't put much time into this, but industry should be more united instead of so many groups, BICWA the peak industry body possibly, and other groups come under that umbrella. We don't need WAFF and WABA and have APC still run under DPIRD and industry representative. WAAS should come under BICWA as it is better to be united but still have their own input into things because there are two different models on what is important for each other - commercial vs hobby beekeepers and the larger voice needs to be balanced. (13)
- BICWA be the lead organisation, there is no need for other groups like WABA and WAFF. APC – I don't know as I haven't been involved in that side of it, maybe it is the part that handles finances and BICWA look after the rest of it. WAAS should come in under BICWA. I don't think we need all these different independent bodies because I see it is a very small industry and a lot about lobbying government. If you have three different mobs lobby government on the same issue it doesn't work, it has got to be one voice and united because we are so small. (14)
- I would like to see a paid CEO/manager to develop the industry and a board whom I believe will be more responsible. BICWA be the lead organisation. There is no one else I can think of. WAFF Bees is getting wound down is my understanding. APC will continue to collect the FFS and be on the side. WAAS and WABA stay and represent the hobbyists and commercial groups. (15)
- We are heading down the right track with BICWA as the peak body and other groups reporting back in to BICWA, others by definition are underneath – WAAS, WABA and WAFF. It would be nice if WABA (takes people from amateur to professional) and WAFF (tends to have larger beekeepers) got together. At the moment there is room for all to be involved. So BICWA then APC and other groups. It is silly duplicating. (16)
- We need a full time CEO – we are now an industry worth over \$1 billion to the WA economy and we run off volunteers who are time poor and also have to run their own businesses. If we have a paid full time CEO and Board that directs that CEO is the most important thing. It is not effective at the moment, not because we don't want to be but there are only so many hours in the day. The structure now is the best way forward, under the new BICWA constitution everyone is a member of BICWA. A board is elected and that board provides instructions to the CEO (with input from industry) and they can drive the goals at the request of the industry. WAAS is good at the grass roots level so it would be a shame to lose them in any shape or form so I see them continue as they do but maybe become an Alliance Member. All registered beekeepers are members of BICWA so it encapsulates all WAAS membership base. WAAS can nominate someone for the BICWA board. All groups won't necessarily be represented as it is not a requirement because then you can argue that DPIRD, APC, WAFF Bees and WABA should have a spot as well. Everyone has the opportunity if they want to take it up. Everyone can have a say; 1 hive 1 vote which weighs input appropriately. I see APC and WAAS continuing. DPIRD always be there, WABA and WAFF will ultimately fall off. (19)

Q6 Cont.

Comments Cont.

- I believe BICWA can provide a much better united voice and is the body to lead industry. APC hasn't done much – they receive money and levies, occasionally they have learnt how to spend it but I don't have much faith in them leading industry. WAAS is focused on the amateurs and only ever will be. There is too much politics between other groups. WA government has no interest in leading industry. BCIWA is stepping up. Under the old BICWA model it was working, politics got in the way of some of it. The previous BICWA board and panel was more representative as it drew members from each of the lobby groups. Under the new model, although it can be members, they have no entitlement to influence or the ability to bring items to agenda for the individual. The new BICWA constitution and how directors are appointed, quickly favours commercial beekeepers and gives them individually more voting rights than individual amateurs who you won't get as many in the room to outvote them. It doesn't support lobby groups feeding into the model. Depending on how and where directors are drawn from will influence how they represent broader industry. APC is the only one who has capacity to collect FFS and how they apply that is limited to their focus on biosecurity. I would like to see them be more active and delivering more funding programs and training than they have in the past. (20)
- I don't want to see hobbyists be put out by excessive regulation and be pushed out of the picture like dairy farmers have been (someone can't have a small herd of cows and produce milk). We need to make a little bit of money and like to sell honey around the place. WAAS still need to be in the picture to provide education and insurance for hobbyists. Commercials are a different kettle of fish. I don't think there should be one body to represent industry. Some of the groups I haven't heard of. BICWA maybe should be the umbrella group and then have WAAS and a commercial group. (21)
- They need to pull together on a few things like research i.e. genetics or disease resistance and come under one umbrella. WAAS is the single biggest group that has a bigger database and has a role in education. You won't get one voice but you need one to be more effective and people will drift in that direction. If they are any good, then they become the peak body. WAAS is the peak body even though amateur and all voluntary. There are a lot of professional people involved in WAAS. BICWA could be the peak body. WAAS is a combination of amateur and professional so has cross membership and is travelling well as it is and it is more prominent because of the increase in beekeepers with the introduction of the flow hive. (22)
- It's pretty disjointed at the moment with so many bodies involved. The problem is that we want to be a government thing with more red tape. If somebody like BICWA could have an overseeing role and be the peak industry body, and then under that have a hobbyist group and commercial. I am not familiar with the APC. (23)
- It appears there needs to be one group and that looks like BICWA who needs to be involved as the overarching body so that the structure, policies, publications and education – all feed into one and feed back to all through one organisation. WAAS will still be there to focus on education and still represent hobbyists. The structure will cause an issue – if there are two beekeepers in a room they will have opposing views. DPIRD is critical as it's the main body industry relies on and represents farmers. All these other groups all have a role to play, if they can all be brought together and understand there needs to be an overarching body it may reduce the amount of unnecessary duplication. Like any organisation - communication is the key it can prevent unnecessary blockages in the system when things go wrong. I haven't really got a good understanding APC so I am not sure where they fit in. (26)
- The structure has all changed. WAAS represents the amateur beekeepers and doesn't have much input into commercial beekeeping. We always encourage them to participate. WABA and WAFF are no longer. BICWA is the group that represents beekeepers, there are no others. The bee industry has to get over the impression that there are lots of little groups. What industry has said is that BICWA will undertake the functions for the APC (like Veges West) and would like the APC to help fund it. APC is the government instrumentality that reports direct to government and that is setup so industry can raise money in case of an incursion in WA through the levy, they are also responsible for extension, education and research which is funded through the APC levy. We need to increase that levy to fund the employment of someone to oversee industry activities. WAAS is its own group but they do have the opportunity to pay to be an associate member of BICWA – their primary function is to train and educate amateurs who are also levy fee payers. They are also eligible to be elected to the board and to be members of BICWA. (31)
- The structure is not too bad and is going the right way – WAFF will disband. APC, BICWA, and WAAAS all have a role, and DPIRD and CRC have a place with research. There is no need for change. (1)

Q6 Cont.

Comments Cont.

- There should be a peak industry body and one representative from each of those groups so that everyone can hear everyone else's concerns. There is no management, both government and industry bodies. (10)
- I would like to see a single body essentially overarching who is responsible for this area because from there it can be shared down to different factions of the bee industry, BICWA has a large role to play along with WAAS, WAFF Bees and WABA (no sure of their membership). APC they also have to be part of it and all industry bodies have some connection. How things are nitted out: one representative on the overarching committee which presents a united voice to government. (17)
- There does need to be a peak industry body to do it that includes a cross section of the whole lot. A lot of other groups are either all professional or academics, you want a small mix of 7-10 that represents all parts of industry and can't be loaded to be government or professionals. You need to select the right one and be prepared to cooperate and have a board that represents all sections of the bee industry and they meet regularly and have meaningful discussions and promote and publish bits of knowledge. I can't see the need for all the current groups. (24)
- As a hobbyist, I don't have any problems with the way things are going. It is a fun hobby to have and I enjoy the company of other people and easily find people who want to buy my excess honey. Commercial guys really need to talk about how industry can be improved as hobbyists don't connect with the industry part. Potentially BICWA could be at the top and WAAS supporting them, rather than a hierarchy. I see BICWA in the middle of a circle and it moves out. Include the APC but don't know how APC fits into the model. With WAAS representation there could be a couple of models based on hive numbers but I would think WAAS in the end would have 25-30% of senior leaders/ directors because they represent such a large group of hobby beekeepers. The board should comprise half of people directly involved in the industry and then up to half not specifically in industry but who have specific skills they can bring. It is important that hobbyists get a say whenever there is overlapping issues like regulations etc. At the end if they don't enjoy being a part of the industry, they walk away and don't see value in paying their registration. Half of them already don't join because they don't know about the groups and the requirements. Hobbyists need representation otherwise the contribution from hobbyists will fold. (25)
- There needs to be one body overall that is dictating stuff. I don't really know what groups do and I am not sure how they work with the hierarchy so I can't really comment. (27)
- Government should be more involved or get more funding into BICWA – at the moment BICWA is a voluntary job, and it should be paid as it will benefit industry in being able to lobby on a daily basis to make government aware of the importance of beekeepers and biosecurity issues. APC and BICWA are two different groups. APC is fairly focused on commercial beekeeping and they seem to get government funding easier than other organisations. BICWA represents the interests of other organisations like WAFF Bees and WABA. WAAS is also a member of BICWA so comes under them and then APC is over to the side. (29)
- Employ an Executive Officer based at the APC offices to oversee works needed by APC and organise and coordinate those works. Reason is that the Commission already provides admin services for the committees and at the moment they sub contract work out to BICWA which means they would pay for it twice and pay for services already provided. Industry advocacy and industry lobbying is hard but it needs to be done, that avenue will be reduced significantly if we get this process right, we won't be done away with it totally but any government lobbying will come down once we have a well organised, structured industry. BICWA is trying to do that. I see a new group that does advocacy and government lobbying which could be a remodelling of BICWA. WAAS will still oversee hobbyists. (2)
- It should be an overarching body that would work hand in hand with DPIRD, DPIRD stay as the government regulator of industry. The new body brings in under one organisation everything from 1 hive hobbyists through to 9000 hive commercial people. We need to get rid of the other bodies; APC, BICWA, WAAS and WBA all disappear so basically we have a two body system with DPIRD as the government instrument and the new body as a single NGO working hand in hand with the department. The new body will have different segments; one that deals with under 200 hive hobbyists that will run Bee Buddy Groups, education etc., and then another committee for commercial keepers. These sections are continuously talking to each other and working with a common overriding goal. It is about stepping out clear guidelines and plans for research and bee breeding programs. (28)

Q6 Cont.

Other comments

- They need to get more information to the grass roots people not involved in the politics through emails and other communication methods and send the information out straight away; don't wait every few months for a newsletter. (1)
- DPIRD need to get off their arse and police it as there are a lot flying under the radar. The single biggest benefit to WA industry is to get everyone registered for traceability, it is not about control – it's for when it is needed and by default industry will have access to extra funds. (22)
- I believe it is in the best interests of commercial beekeepers to be involved with WAAS as commercial beekeepers stand to lose more than the amateur stands to gain. (24)
- The problem with BICWA is that there is very much vested interest and we are never going to get away from infighting and problems associated with that; it will continue like it has done in the past. BICWA was recently remodelled but it made it worse rather than better with the constitution and voting it has taken the equity out of it and a certain amount of commercial operators have insulated themselves against negative outcomes. If anyone tries to challenge them they can outvote any decision. There is a clause in the constitution which results in the board's ability to determine if someone can or can't continue to be a member; that might be fair enough in some ways but what if it is a legitimate fee paying person? BICWA can't be responsible for themselves let alone someone else. (2)
- The goal was to unite industry. People aren't going to get on as there are a lot of strong personalities in beekeepers and that won't change. I can't see why they can't get on to make that work. (3)
- Both APC and Chem Centre drag on industry progress. (4)
- In the past too many people have been approaching government and government departments and there has been mixed messaging so it has not driven direction. One body that is representative of industry would be good. (19)
- There needs to be a new body set up for beekeepers; at the moment we have a system that has narrow self-interest on personal lines which is entrenched within the bodies we have that has become very inflexible regarding anything (if you're not a 3rd generation beekeeper then you are not going to be looked at or listened to, they don't care). The industry has become stagnated and stale around the establishment. The only way to rectify that, that I can see in my experience across industry and around the world, is to remove a lot of the responsibilities and self-interest from the existing bodies and create a new body that oversees industry as a single point. At the moment we have too many fragmented interest groups peddling very narrow interests that are personal interests. (28)
- I don't have any idea and don't know any different, I would like to be more involved in the future. (6)
- I don't have any ideas as I'm not connected enough with other beekeepers as I'm so remote. (7)
- I haven't thought about it much but a lot of beekeepers big note themselves which I have no time for that so I stay away. It is confusing as there are so many groups. The only way it will happen is if every single beekeeper has the same objective. Everyone has their own plans and are out for themselves, if not they lose income. It is a competitive industry – we are never going to get every single person talking and achieving an outcome, it is not like grain farming where everyone is on their own land; they are all using the same land. (18)
- I don't have a good understanding of the groups and the roles and responsibilities. Only WAAS. (30)

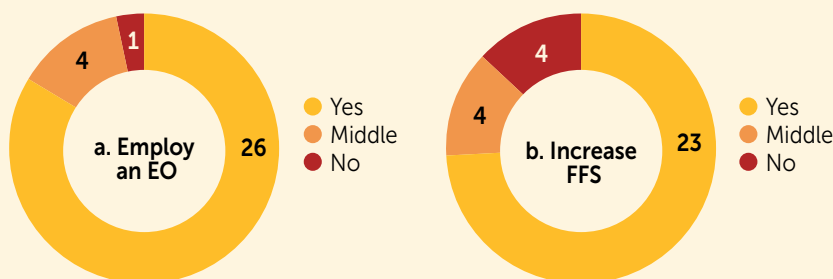
Question 7

Q7. Currently the industry bodies are managed by industry volunteers with limited time, and therefore to better manage the industry into the future with benefits to benefit all those involved:

The majority of beekeeper respondents (84%) support the employment of a Bee Industry Executive Officer. Only 3% were against it, with a further 13% who could be swayed to support it under different circumstances. There is certainly recognition that the volunteers who currently oversee the various groups put in a lot of hours, are time poor, receive no remuneration and still have their own businesses to run. It was mentioned that too many people have already been burnt out. Therefore, it is necessary to take the load off volunteers and to professionalise the industry in order to raise its profile, through the employment of an Executive Officer. Initially respondents would like to see someone employed part time, and for the person in the role to be shared across the various groups (and registered hives) including BICWA, APC and WAAS. The Executive Officer would assist in representing industry interests and advocate at forums/ meetings; lobby government; oversee the activities and industry development; focus on contacting people; and create momentum for funding opportunities. Concern was raised about finding the right person for the job and that the person may not understand the industry.

More than 70% of beekeepers consulted support an increase in the Fee for Service contribution via the APC to support industry sustainability and growth through the employment of an Executive Officer. Respondents understand it cannot happen without an increase in the FFS and many are prepared to pay a fivefold increase up to \$5 per hive. Other suggestions were to double the current \$1/hive fee or triple it. This will help to increase the budget and allow for industry contribution which can be used to leverage against other funding grants to make the position sustainable. As long as it is financially viable and that beekeepers see value in the employment of an Executive Officer, then they will be prepared to pay and accept an increase in the fee. As outlined by one respondent, the FFS is for research and development, and to protect the industry. 13% of respondents sit on the fence as they are unsure and require more information and more transparency as to how money is being spent. Another 13% do not support an increase in the FFS as they believe it won't solve the problems, and there is no evidence of where the funds are currently being spent and APC needs to be more accountable.

Other ideas as to how to fund industry development, through the employment of an Executive Officer to oversee the activities, include targeting other sectors involved in the industry and those who are reliant on beekeepers. If the bee industry suffers then other sectors are also impacted financially.



BETTER MANAGE THE INDUSTRY INTO THE FUTURE

Q7 Cont.

These include packers, retailers, and the pollination industry and could include an additional fee/ levy, donations, or sponsorship. Concern was raised that some beekeepers are also packers and therefore they may be hit twice with an increase in fees.

Contributions from government, both state and federal was also raised in that they should support the industry as it is unique, and clean and green. Funding grants also provide an opportunity with a 10% administration fee available to help fund an Executive Officer, it is believed that the right person will be able to generate funds for their position, and leverage industry raised funds to be able to access other funding grants.

Funds can also be raised through donations and sponsorship, and the organisation of fundraising events, seminars, conferences and guest speakers – however these funds are not sustainable, and these events require a lot of preparation. The introduction of a flat fee per voting member of BICWA was also suggested,

along with BICWA creating export channels and collecting a percentage of sales. The development of an industry run queen breeding program, overseen by BICWA and run as a separate entity was also raised.

Throughout the industry consultation, concern was raised many times about the number of unregistered beekeepers with unregistered hives. Respondents believe that industry is missing significant income from this and could access more funding through tracking down unregistered hives as they pose a huge risk to industry and these people are benefiting, and not contributing.

Other suggestions include a fee on production, an additional fee for licenced bee sites as raised by one respondent they are a growing asset going up in value, and the opportunity for sale of industry data. Funds raised by industry need to be sustainable in order to attract and retain a professional person in the role for a number of years.

a. Would you support the employment of a 'Bee Industry Executive Officer'?

Yes

- Yes, part time not a full-time job. APC is fine and has a paid secretary who works on an as needs basis. It could be a combined role with an EO for APC and BICWA and even WAAS. If it is funded through APC funds then they could do the lot. (1)
- Industry has been lobbying for that for 20 years, and for everyone to pay an extra \$1 per hive to employ someone full time.
- Beekeepers lack representation in different forums, if someone could have gone along to represent the industry when they were planning the route for the Indian Ocean Drive, the tracks wouldn't have been blocked off with limestone. It is all extra time and money but it is about all kicking at the same goal. (3)
- Yes; BICWA directors are time poor. A highly competent CEO has been identified, we need to grab him and pay him; therefore BICWA needs to find funds – and they need to be sustainable. (4)
- BICWA has been in talks with a number of people about getting an EO in the hope of securing grants. It is essential, as volunteers on the committee put in thousands of hours of work for no remuneration. If there could be someone who can focus on contacting people and they can create momentum for funding opportunities and hopefully continue. Full time would be great but it is unrealistic, part time is the best we can hope for. (5)
- Yes. (6)
- It will go that way, yes if they consider they have reached a stage now where they need to employ someone to keep the industry going. (7)
- Yes, some of these roles are filled by the same people and we need to professionalise it a bit and take the load off. A dedicated paid person is the way to go and it will keep it nice and tidy. (8)
- Yes, it's a professional industry let's turn it into one instead of it being run by volunteer beekeepers who are also busy trying to run their own businesses. (9)
- Yes, providing the wages are not too high. The person has got to be dedicated to the industry and there is no too hard basket. (11)
- Yes, take the stress and pressure off the volunteers. (12)
- Yes, it depends on what the roles will involve. I am not against it. (14)

Q7 Cont.

Yes Cont.

- Yes, there should be someone to do lobbying and industry development. (15)
- Yes, we need someone part time to fulltime in a remunerated position to oversee activities. (17)
- Yes, we need a full time CEO – we are now an industry worth over \$1 billion to the WA economy and we run off volunteers who are time poor and also have to run their own businesses. If we have a paid full time CEO and Board that directs that CEO is the most important thing. It is not effective at the moment, not because we don't want to be but there are only so many hours in the day. Without my involvement my business would be screwed if I wasn't lobbying on resource protection. They could do day to day meetings and input as needed. Advocate at forums. No resource attached to it, it bewilders me. (19)
- Yes, from my knowledge working with volunteers nothing sustains or happens unless you have a good EO and potentially others to make things happen. We have burnt out way too many people. (20)
- Yes, someone very good who can advocate on behalf of industry. (21)
- Yes – these people are trying to run a business so there should be an EO which is shared across all groups and registered hives. (22)
- Yes, the fact that people are interested in beekeeping so we need a strong understanding of what bees do and we need a better focus in pulling it all together. (23)
- Yes. I think this comes out of licence fees for hives. (24)
- Yes, as there has to be someone who actually knits everything together and can direct the organisation and its activities. (26)
- That's a prime thing that could be done; yes, it is necessary to make sure they are all on the same page and doing the right thing by bees. They also need the knowledge and to be accessible. (27)

- Yes as industry needs someone to upgrade its profile and to be lobbying ministers/ MPs and industry bodies. It would be a targeted response rather than at the moment there are lots of different people / groups with different responses. (29)
- Yes, it's all voluntary people and they are limited with the time they can devote and the issues they can get involved in. Even if it is only a paid admin position, it certainly helps but it needs to be a paid position. It always falls on to a few people who are keen to be involved. (30)

No

- No, the first thing they will do is put their feet up because they get paid a wage, government isn't going to pay, it will have to be beekeepers who pay. As a smaller beekeeper would I get a say in who's doing it? If it is someone with lots of clout, they will make decisions to suit them. If it is someone independent, then it will be someone who doesn't understand the problems we have got and then they could easily get swayed on an issue as there is a lot of money in big commercial producers. (18)

Depends

- Therein lies the problem again of getting the right person who has everyone's best interests at heart. If I said No its because I can't see what difference one person will make, Yes someone to try to do something but who pays for it and who will stick their neck out and do a job like that? It would need to be a trial to see what they could bring to the table. I still can't see what someone can do to make the bee industry better. (10)
- Under the current structure, no. If a new structure, then it needs to have a full-time professional management team. It would be big enough with enough responsibility to require that. (28)

Q7 Cont.

b. Currently industry members pay a Fee for Service contribution via the APC; would you be prepared to increase this Fee to support industry sustainability and growth?

Yes

- Yes, to benefit all FFS payers. If they need money it has to go up. (1)
- Yes, it can't happen without a Fee for Service increase. It has to go up around about \$5 per hive with potential for a flag fall increase of about \$100. It is currently \$20. A five-fold increase on hive fee and a flag fall. That will lift the budget from about \$100,000 roughly now to about the \$500,000 mark which be a good starting point to get it moving. It can always come down. (2)
- Yes through the APC. If people think they don't have to pay where is the sense in that, if they are not paying it someone else will. In order to get better representation in forums and someone representing industry it will benefit industry. We do get shafted a lot on issues like bushfires and burning regimes and access. (3)
- Yes, currently it is \$1 hive. (4)
- I am happy to pay \$5 a hive. \$1.40 atm per hive. (5)
- It depends how much it will be increased by, if it's a modest increase to employ someone – I don't have a problem. (7)
- Yes, it depends on how much. If it triples most people would be able to handle that. (8)
- Yes, it is minimal at the moment, so a 4-5 increase \$5 per hive. (9)
- Yes, to a certain extent but not every year and not 4-5 times that is too much. Perhaps double the FFS over the next two years. (11)
- Yes, increase FFS to make it worthwhile to about \$5 /hive. It makes sense to have a gradual increase and then with the knowledge and education, it will go higher. As beekeepers see the benefit of paying more money and what they get from it. (12)
- A small amount, not too crazy, for me it affects the bottom line. I would accept a 50% increase, any more than that then no. (15)
- Yes, even if doubled to \$2/hive that would be ok. Anything more depends on what they would be doing. (17)
- Yes, if it is to fund an EO I would be happy for whatever is needed to make it financially viable. If you have got 40,000 registered hives in the state, initially a doubling is reasonable. If you can't afford to pay \$2 a hive, you probably shouldn't be a commercial beekeeper. (19)
- Within reason, yes but I am not sure what scope. I would be prepared to pay for it if I saw value and understand that the employment of an EO will create value. (20)
- Yes to an increase, you can easily double it and up to \$5 hive. It's there for research and development and to protect the industry. (22)
- Yes \$5 hive is a reasonable number but it depends on your circumstances. I don't pay a FFS. I would be happy to contribute a little bit more say up to \$5 hive and to contribute through DPIRD. Say if you have under 20 hives then you pay \$100. (23)
- It can be paid for by FFS. At the moment it is \$1.20 hive. Anyone who is a hobbyist won't get upset at \$2.50-3 per hive. As long as they see the big guys also paying their share. (25)
- I pay \$76.50 for registering hives and a couple of dollars per hive. (\$50 registration fee and \$2 per hive). Any increase would initially have to be small and then somehow get the government to contribute it as well to start off. All other agricultural industries have an organisation and have to fund it from producers i.e. cattle etc. so we need to join the real world. (26)
- Yes, it wouldn't worry me if \$5-10/hive but I have only got 5. (27)
- There needs to be a 50/50 partnership with government and industry. Industry needs to increase its FFS say to \$1.50 per hive (currently \$1.10) and if you can get all those people who should be registered (and are not) you could get an extra \$2000. (29)
- Yes, definitely as I believe it needs to be a paid position. \$1 a hive is not enough and to be paying \$10 a hive wouldn't turn me off, it is law you have to register your hive. (30)
- Yes, we pay \$1.10 FFS but I would be happy for that to increase to \$3.00 per hive. That would get us close to funding a part time CEO and once we get funding we can leverage with other grants. (31)

Q7 Cont.

Undecided

- I am not sure, if I knew what happened in other agricultural industries. If they want more support, I would require more information. I sit on the fence at the moment. (13)
- I would but I have only got 100 hives and it is not fair that what I can afford, others may not be able to. I am not against paying more money, but I don't want to come up with the amount that others are expected to pay. (14)
- I am on the fence, I realise we need to pay to employ someone; I do think it is a huge weight to put on people, as it is almost a full time job. If you can find the right person at the right cost. In principal, yes but in practice, I am not sure. I can see arguments for and against therefore would require more information on what they would do and the benefit. (16)
- I don't pay a FFS. I don't want them to force the hobbyists out. We have a lot of pensioners in the club, and that would be a big impost on them to pay a fee. We already pay a WAAS membership and DPIRD - single \$50 pp year. For me personally a fee increase is not a problem as I work. (21)
- The structure we have I think we can do better – you have the National Honey Levy take that idea on – with a new overriding body that could be expanded to support the management of the industry. And that could be through either honey production or hive registration. Hive registration even now that should change from 1 January to the financial year, which would be a more logical time. Under the current system I don't support any increase, but I do if you talk a different system of charge for service. The means with which people are charged needs to be changed and the breakdown of how money is used needs to change and be transparent. Something similar in WA, this has broader ramification for more than just WA as we don't have a national cohesive system for the honey industry across WA. We have a heap of state-based systems and no national system. How we much pay – depends on how the system is set up to charge either per hive or by production? What is the amount body need to be effective? Don't charge \$1 hive if it only makes up 20% of the required budget. (28)

No

- No, I don't see what we are getting for it at the moment, so no - no increase. (6)
- No because I can't see evidence of where the money is going at the moment. I asked for clarification where it is going several times and have never been told what it's for. Why would you want it to increase when who knows where it's going? There is no reporting on where funds are distributed, APC should be more answerable to FFS members and accountable where funds are spent. If I can see the money is used properly and for something good then I have got no problem at all but if it has been wasted on stuff that doesn't matter and is stupid, then I have no support for it. (10)
- No, it is not going to solve the problems. (18)

c. Do you have other ideas on how to fund the industry development?

Target other sectors / industries

- Honey levy - packers cent a kilo honey, packers put forward. Collect half a cent, it used to work for ABIC. Packers have to help fund BICWA as well. Beekeepers 1/2 cent and packers 1/2 cent a kilo. ABIC used to have \$320,000 back in its day. APC can fund projects BICWA do and get other funds to fund an EO. They can also apply for funding grants and get 10% admin. (1)
- Get some other bodies to push money in there too, on the amount of honey you produce you should be prepared to put 2% of that to industry for industry growth and development. 2% of a year's earnings and also be able to claim tax on that as well. (11)
- Donations based and maybe need to do a better job of lobbying agricultural sectors that are reliant on the industry for pollination and getting them to put their skin in the game so potentially money gained from the avocado industry. If our industry suffers, they will suffer as well. Packers pay a honey levy at the moment; I am not sure if the distribution is appropriated and could look at an increase in levy and then they distribute. Government distributes it so I am not sure of the legislation behind it. (19)
- Packers have a huge involvement - some packers make good money from beekeepers – there has to be a levy associated with that as well. There is a fee collected by LRS for how much honey packed, there has to be something else there to help fund this as a lot of people in the industry are not directly beekeepers but are making a living from it. I think BICWA has to do something with this and the volumes of honey packed. (17)

Q7 Cont.

Target other sectors / industries Cont.

- Commercial beekeepers have a part to play as they make the biggest amount of money out of this. We have a lot of farmers who rely on pollination services maybe they should chip in money too. (23)
- Industry can add value to WA so government should also be able to provide some assistance and perhaps honey packers/retailers can also contribute in a small way. At the moment packers don't pay anything as most of them don't have hives. You need to find a way to get money out of packers. (25)

Sponsorship / Events

- Sponsorship, that's not as sustainable but it could be. Use someone like the Chairman Brendan Fewster who used to play for the Eagles to talk to people and raise funds that way. Other ideas – fundraising activities i.e. conferences are semi sustainable but they require more man hours rather than raising FFS. (4)
- Sponsorship from larger organisations i.e. Hive and Wellness and Honey for Life - bigger packers contributing and equipment suppliers. A little bit each helps. We buy equipment from these guys. Otherwise fundraising events, auctions, social events, conference, field days etc. (15)
- WAAS or someone could hold seminars and charge at the door and make it high enough to make profits to fund industry and also have some regional meetings. (24)

Increase fees

- If they want to shape industry perhaps pay \$80 per voting member of BICWA (what pay for WABA member at the moment), therefore FFS is less. But given now there is no fixed fee. The bigger keepers still pay the most. There are some 3000 beekeepers in the industry, many whom won't care to roll up and have their say. I believe it has been identified that industry needs about \$300,000 as a budget for an Executive Officer and activities, car etc. Money is also required to send to AHBIC, at the moment it has a ridiculous funding model where they request friends of AHBIC to donate. It is always worrying about where funding is coming from. If they want a professional CEO, you don't want them thinking about getting another job because the money is running out, there needs to be a 5-year plan to attract and retain someone. (4)

Grants

- Research grants and use the admin component is the most realistic means. (5)
- No currently, funding grants. (13)
- Go for grants. (14)
- Ideally the right person for the job will be able to generate the funds for it as they will see the gaps in industry and be able apply for funding grants. (12)
- DPIRD they have money and we could also get some through the Regional Development Commissions. We are hoping the CEO can hopefully be self-funding in chasing funding for their position and that we can leverage industry raised funds to be able to get other grants. Similar to what Veges West is doing. (31)

Government funding

- Government funding – state and Federal as the national uniqueness of industry/ honey and WA government should back that up because of the cleanliness and biosecurity as WA is the most fortunate place for the expansion of bees and that has not been taken full advantage of the opportunity. We need a well-structured organisation to grab it and drive it. Industry should grow more active honeys and create new export channels. BICWA could take a % on sales, with my business 10% of honey goes to drive the body and create export markets. (9)
- There should be a government subsidy because industry is so important and important for the fruit and vegetable industry and R&D through the universities. (21)
- There needs to be a 50/50 partnership with government and industry. Industry needs to increase its FFS say to \$1.50 per hive (currently \$1.10) and if you can get all those people who should be registered (and are not) you could get an extra \$2000. (29)

Q7 Cont.

Target unregistered beekeepers

- It should all be wrapped into one fee with a transparent break down, we are missing significant income with unregistered beekeepers. Industry should track down the unregistered hives and collect their fees because I don't believe in passengers who are still benefiting but not contributing. (22)
- Getting unregistered hobbyist beekeepers to register their hives. (25)
- There's a lot of people not registered and not paying the fee. I think if there is an increase, you need to go for these people who are not registered. They are easy to spot, and you would find out about 50% of people are not registered and that is a risk to industry. (26)

Other ideas

- Beekeepers get the benefit out of it but data is a big thing and worth a lot of money down the track. Industry needs to store it and charge people for it. In other industries now people pay for data and universities get it free. Intellectual Property – make sure BICWA is represented and share in that fund itself instead of people putting their hand in their pocket and paying for it. People who want information – composition of honey, IP CRC, I am not sure where that ends up. (3)
- Ideas as to how to fund industry development – take advantage of opportunities created as a result of research under the CRC e.g. if just used BICWA as existing entity, if they were able to licence and use ideas under licence say that invented a disease sniffing machine that detects diseases through smell – if BICWA was to hire a fleet of machines out for quarterly surveillance. That's one idea - utilising the research funded from the CRC, taking great innovation and commercialising it and becoming the licenced agent for that – hire it out or sell it. If it is done through a not for profit – it creates an avenue for funding other research. BICWA could borrow money for seed, recoup that as the only licenced manufacturer and have a barrier there to insulate it from the commercial sector and have patented technology. (2)

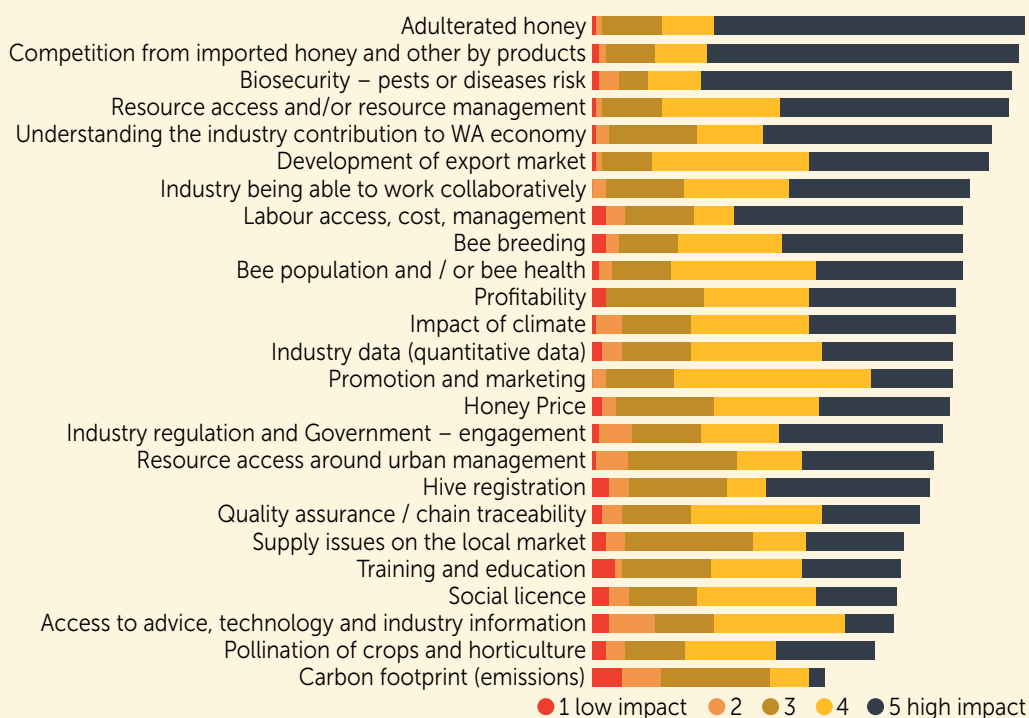
- The AHBIC model of being funded by "Friends" is totally flawed. We can raise some funds through events and other fundraising activities but to be truly sustainable it has to come from industry on a mandatory basis and this means that the \$/hive fee needs to go up. It would be very helpful if any major industry reviews started raising this issue. (4)
- A breeding program where people buy genetics and you sell a good line of stock from genetics from the Rotto breeding program. We need to breed up more queens, perhaps it could be a separate entity for BICWA and help improve the lineage for everyone and BICWA could oversee that program. (15)
- An additional fee to licenced bee sites because it seems to me that sites are a growing asset for whoever owns them, they are going up in value. Some packers own these sites as well as commercial beekeepers, no hobbyists. I think there should be, as well as a normal government fee for sites, something like \$50 or \$100/year on top of that that goes back to industry. They are worth thousands of dollars and is a means of increasing the wealth of the owner. (25)
- Maybe a fee on production. The only way to do that is with the number of hives. (30)
- The most obvious is the FFS and other options include sponsorship. (8)
- I don't think industry is big enough or got the revenue to do something like that. The beekeepers in WA are at the bottom of the pile. (10)



Q8. Please rate each of the following challenges for the WA bee industry.

The top two challenges for the WA bee industry, as outlined by respondents, are adulterated honey and competition from imported honey and other by products. A close third is biosecurity and the risk of pests or diseases impacting the state's clean and green image. Other main challenges include resource access

and/or management; understanding the industry's contribution to the WA economy; labour access; and development of the export market. Bee breeding, and in particular queen bee breeding is also viewed as a big challenge for industry due to supply issues. The issues that growers find the least challenging are carbon footprint (emissions); pollination of crops and horticulture; access to advice, technology and industry information and social licence.



RATED CHALLENGES FOR WA BEE INDUSTRY

Other industry challenges

- Queen bee availability – 5. (1)
- Queen bees – I am fed up with buying stuff that is not up to scratch so I have started breeding my own. 5 (11)
- Inflation and affordability of WA honey – will drive retailer to imports. 3 (20)

Hive registration

- There is a lot of underquoting and to be honest, that is not fair. (3)
- A lot of hives are not registered. (19)

- Hive registrations – APC fund collection has a major issue to get people to register; as many beekeepers are unregistered as there are registered ones. (20)
- Hive registration is an issue as hobbyists over time will drift away. (25)

Technology

- There is a huge space there. (19)
- Technology – there is not a good platform to look before you buy or not a lot of well-rounded packages that you can pursue before purchase. (20)

Q8 Cont.

Marketing / Markets

- We do a lot ourselves but would pay for it. The Wescofee promotion a while ago saw everyone in the industry benefit from it. (3)
- It would be great to see industry-led marketing and a CEO push promotion and public presence. (19)
- Local market – smaller producers cut you out of the market with their lower price with 20-30 hives. (11)
- A lot of commercials don't focus on the domestic market, more wholesale. (20)
- Export market – as a beekeeper I have never got enough product to keep up continuity for export markets. (11)
- Export market – the requirements are ridiculous for other countries and small operators can't put quality assurance systems in place to target them, as it is not viable. (15)
- Export will increase carbon foot print, I'm not a believer in that. (19)
- Export is difficult, we need a government body to do that – other industries government looks for markets overseas not the individual producer. (21)
- Marketing – better education around promotion and marketing would help enhance industry. (27)

Pollination

- There is a huge opportunity to do avocado pollination. I think there are also other industries that could benefit that aren't recognising the benefit if they had paid pollination like apple, pears, canola shows there is potential for a 15 % yield increase. (5)
- Pollination – there is current demand for horticultural crops but a massive blip in price for that crop. We have put a lot of faith in avocados, and it concerns me. We don't have other industries willing to pay that sort of money and that see value for it. If they don't see financial reward they will pay less or won't bring it in – we are already seeing that with almonds over east where more growers are bringing in self-fertile trees to reduce pollination need. (20)

Industry regulation and government engagement

- DPIRD are not in a hurry to help say when there is honey flow in Pemberton and you want them to look at sites, they say the local person can't look at it for 2 weeks and then you miss the boat. (3)
- Industry regulation and government engagement – the problem is there is no policing of regulations, DPIRD randomly inspects hives. There are a number of dodgy operators and the biggest risk is AFB. There are some keepers who illegally feed antibiotics to mask infection and as long as they do that AFB remains residual in hives and they can transmit it. As a beekeeper we can report it until we are black and blue in the face, but they won't do anything about it. DPIRD conduct honey tests for residue. There are no powers of random entry and there should be. (5)
- BICWA is well engaged with government bodies, but if they can get change through is another question. Industry is not getting the resolutions they would like to be getting. (20)

Industry contribution

- There are very few economic studies done, John has done some and was the first publication of its kind where he tried to put a value on the pollination industry. (5)
- People are protective of production data and don't like to share. We do need a set of industry figures and production stats. (5)

Social licence

- There are lots of steps you can take with reducing emissions and being organically certified which gives you a point of difference to establish premium markets. (3)
- It is pretty good at the moment but it can change quickly. (19)
- Social licence – I am concerned about restrictions and over regulation. (21)

Industry collaboration

- It is competitive within industry, there are some team players and some sneaky buggers too who don't want to share things say when trees are flowering. (3)
- Collaboration – hobby beekeepers will get around that, if there is none. (25)

Q8 Cont.

Honey price

- There is opportunity to target quality niche markets to get a premium price and use Capillano as a last resort. (3)
- Honey price – depends how they sell their honey either local market or whole sale etc. (20)

Bee breeding

- Access to queens is not good; we don't have a dedicated queen breeder in WA, there are lots on the fringe. They have good access to genetics but the availability of stock for beekeepers to buy is low. (20)
- Queen breeding – we rely on commercial people to breed queens but they are set up to deliver to commercial beekeepers, so it is an issue for hobbyists. (25)

Profitability

- Profitability is getting harder with the rising price of fuel, and with pollination people don't want to pay us enough. (11)
- Profitability – it is an expense as most hobbies are but I am not doing it for the financial gain but as a hobbyist. (30)
- Profitability doesn't worry hobbyists much. (27)

Resource access

- Resource access/ management – with controlled burns, there is no communication with landowners with apiarists on behalf of DBCA and it all gets burnt. (9)

- Resource access – WA has a very good system with its apiary site system, it is not difficult to access, the only issue we have is that some resources like national parks have been excluded from beekeeping for scientific reasons which we disagree with. (31)

Other

- QA – the big commercial producers do it well, no-one else does – you can count on one hand the number of BQUAL certified keepers. (20)
- A lot of these are not relevant to the average hobbyist as they don't see themselves as part of an industry. Also there's half of the hobbyists not registered with DPIRD. (25)
- Resource access around urban management – with councils everyone is different, some accept you with open arms whereas my local council is not encouraging. (30)
- Data – I keep reports on my hives – it is not clear cut on what information I should retain and how I report. I collect the dates I look at them, observations about frames etc., bee population, and production. (30)
- Carbon footprint – there is a lot of plastic products on the market now. (30)
- Data – officially it is not reported, but unofficially the grapevine works well. Data would be nice; the government used to get us to fill in every year for the honey production levy and send into government. I don't know why it stopped. There is also the Ag Census but I am not sure if beekeepers are in it. It would be good to be able to capture data to use to lobby, that would be good. (31)





Question 9

Q9. What do you believe are the two main opportunities, and two barriers for the WA bee and pollination industry in the next five years?

The main opportunities for the WA bee and pollination industry in the next five years, as identified by beekeepers include more promotion and marketing of honey and bee products; paid pollination of horticultural crops; better resource access and management; and queen bee breeding. Other opportunities outlined include further research; training and education; production of other by-products and the establishment of an irradiation plant in WA.

Respondents have suggested more industry promotion and education to help increase the price of honey based around medicinal honey and the antibacterial and antimicrobial properties which will also enable industry to target the export market. The promotion of WA's unique clean and green image along with its pure, natural, disease free, antibiotic free and pesticide free honey should also be capitalised on in an educational marketing campaign. There is an opportunity to push the story of honey and provenance, similar to the wine industry's marketing strategy. As raised by a couple of respondents, the Kiwis have created a great marketing campaign around Manuka honey, and there is opportunity for WA to do something similar as Jarrah is far better in terms of its medicinal properties than Manuka.

With regard to pollination, respondents would like to see more paid pollination and value adding opportunities for beekeepers as it allows them to still have the ability to produce honey and also collect pollination income. It was also mentioned that pollination provides an opportunity for those who can't access high value honey sites to have a supplementary income. Demand is increasing with lots of new plantings of avocados in particular and pollination prices have risen from \$60 per hive up to \$280/ hive in the last 10 years.

There is also opportunity to educate the horticultural industry on the benefits of bees for pollination and their ability to increase yields, however data and research is required to back that claim. The true costs associated with bee hives also needs to be promoted to raise awareness and to help justify the cost per hive as the horticultural industry doesn't see financial reward and are not prepared to pay much, therefore the beekeeping industry needs to ensure they deliver value. It was also mentioned that there may be an opportunity for BICWA to establish a pollination hub or list to connect beekeepers to producers.

With high demand for apiary sites and low availability, beekeepers are concerned that DBCA sites are not getting used, or haven't been used in years, and the resource is going to waste therefore they identified some opportunities around resource access. These include increased sharing of DBCA sites to allow for borrowing of sites similar to the Rottnest boat mooring program where there is a primary user and secondary users licenced to use the mooring. Another suggestion was that DBCA should conduct a review of site usage and that it should be based on 'if you don't use it, you lose it' or the allocation of sites could be against production of honey. The opportunity is in the availability of more sites and also opening up access to sites for other beekeepers. A computerised system could be used to show beekeepers what's available and what sites are reserved. It was also raised that BICWA could assist in brokering sites and access on behalf of beekeepers.



Q9 Cont.

Bee breeding and in particular queen bee breeding demand exceeds supply currently and therefore respondents believe there is an opportunity for a dedicated queen bee breeder to supply the local, national and export market. With WA being so isolated and with its clean, green and disease-free environment, it could capitalise on creating a certification program to enable it to be officially certified 'disease free' breeding program. Currently commercial beekeepers have priority access to Queens from the Rottneest Breeding program but hobbyist beekeepers are also crying out for Queen Bees, hence there is opportunity for them to have better access as they will pay more, but buy less.

Export opportunities into Asia, the Middle East, Japan, Singapore and America for all bee products was also raised, and particularly around WA's clean and green image and the medicinal values of honey and its health benefits. Respondents also mentioned that imports of honey should be stopped as it has an impact on the local market with supply and also undercuts the prices of WA honey, and it is also of poorer quality which can influence the acceptance of local honey should consumers have a poor experience.

Other opportunities include the production and marketing of by-products including pollen as a health food, propolis and bee venom for cancer treatment. An irradiation plant was also suggested for risk mitigation to clean up diseases / pest ridden hives and to assist with a better breeding program and ultimately healthier bees. Currently there is no plant in Western Australia and beekeepers have to either send their hives over east which is cost prohibitive or destroy their hives. An irradiation plant could be shared across a range of industries including fruit and vegetables and could also assist in targeting export markets, as it is an export requirement in some countries.

Training and education opportunities raised include using the expertise and knowledge of retired beekeepers to train, an online training course and production of WA specific You Tube clips. Given the number of unregistered hives in the industry and also the biosecurity risk associated with that, one respondent would like beekeeping equipment suppliers and training organisations to ask for proof of registration prior to providing any equipment, service or training. They could also assist in promoting the benefits of registration.



Q9 Cont.

American Foulbrood is an issue in WA and apparently a lot is unreported due to the stigma associated with it. While it is a hidden threat to industry, there is an opportunity to bring it out in the open and establish an area where only diseased hives are allowed for research purposes. It provides beekeepers with AFB in their hives an incentive, as they would be able to apply for sites and work with DPIRD to monitor and breed disease resistance bees, and still get production. Another opportunity raised was the use of antibiotics for the treatment of AFB and for the relaxation of regulations as it can be used everywhere else in the world.

Other opportunities include the development of industry standards for bee hive equipment and the materials used; resource reports/ forecasts to be developed by DBCA and DPIRD and distributed to beekeepers; a quality assurance program for amateurs to help protect the industry and the offer of incentives in discounts on supplies, training or hive registration to encourage people to register their hives.

The main barriers as identified by respondents for the WA bee and pollination industry in the next five years include resource access; biosecurity risks; burning of resources; climate; and labour.

Resource access is based around limited access to apiary sites; lots of beekeepers missing out on sites and the resource going to waste. Burning of forests also contributes to the issue along with mining and logging companies contributing to the destruction of beekeeping sites, and not offering any compensation or fees being waived. Beekeepers are also denied access to national forests through a moratorium that was put in place due to concerns that the European Bee had an environmental effect on forests.

Burning of forests is also a huge barrier for industry as respondents believe that prescribed burning is done at the wrong time of the year; there is lack of communication around burns; there is too much burning and repeat burning which in turn destroys valuable honey production sites. The drying climate and unpredictability and changes in flowering patterns also impacts on honey production and bee health.

The biosecurity risk is always at the forefront of beekeeper's minds with the threat of incursions and the risks with hobbyists, derelict hives, etc. as they can impact hives and wipe out an entire industry. WA is proud of its disease-free status and clean and green image but there is always a potential risk that they will lose it with any incursion and particularly Varroa mite posing the biggest risk.

Labour is a common barrier across many industries and for the beekeeping sector it is about access to skilled labour, competent staff, competing with higher paying industries like mining and the requirement to pay overtime as they have to work after dark moving hives. According to one respondent, it is also not an attractive industry for employees as they are required to wear a suit all day and get stung.

Unregistered hives are also a barrier for the industry in terms of being a potential disease breeding ground and risk to the industry. While respondents understand DPIRD is under resourced, they said there is no stick or carrot or enforcement of registration.

Another barrier is imported and adulterated honey which poses a disease risk, and there is risk of chemical contamination, and it competes with WA honey on the supermarket shelf. Respondents say the cheap imports suppress the prices beekeepers receive as it is mixed with lower cost honey and sold at a lower price. The quality of the honey is also of a lower standard, less flavour and tastes different, in comparison to WA's pure honey, which impacts on consumer's perceptions of honey. The supply of cheaper honey on the local market is also a barrier with many hobbyist beekeepers undercutting commercial beekeepers' prices and therefore they believe it devalues their honey. Farm gate sales was also raised as a barrier as many hives are either not registered, beekeepers are not abiding by food labelling laws and there is no traceability for consumers.

Opportunities

Pollination

- There is an opportunity for more paid pollination for beekeepers. (1)
- Value adding – in relation to pollination, when you pollinate you still produce honey so you can value add. It comes in many forms – a lot of beekeepers producing bulk honey don't add more value. There are more opportunities that have opened up in that space. (2)
- Pollination provides an opportunity for market entrance for people who don't have jarrah sites and high value honey sites as it provides supplementary income where you focus on pollination work. It's a huge opportunity as it could be the difference between viability and getting market entrance with a workable income. BICWA could provide a pollination hub – in the past they didn't want to put money in and the government has said they didn't want a bar of it (DPIRD). (5)
- Pollination is going to be on the rise as there is bigger demand for that. There is opportunity for increased hives, honey production and healthy hives, pollen traps – collect pollen 2-3 years. I see it will be required more, I am not sure of demand at the moment and if it is already filled with beekeepers. (6)
- Growth in pollination demand - with an expected increase in demand in the future with horticultural developments there will realistically be demand for more bees for pollination. (7)
- Pollination of horticultural crops - we do avocados and there is a huge amount of new plantings and not enough beehives to service what's there. Over east they have pollination brokers and that is what is needed here. (8)
- Pollination of agricultural crops. The demand is there, it's a case of putting it out there and connecting growers to beekeepers. There used to be a list of who was interested in pollinating. Over east they have pollination brokers – but that's like feeding cats, I don't think that is the way to go. It is better to go direct to the grower. (16)
- Education of growers on the benefits of bees for pollination and to help increase yields – they are directly linked and is one of the challenges we face as we need data to back the claim. The other challenge is price per hive that needs to be charged with avocados (as they are competing with the most valuable being jarrah opportunity cost to beekeepers) and then the challenge linked to that is declining resource access through climate change, logging and burning. There are not enough bees to fulfill pollination demand if we lose areas to sustain our bees. The best example is that the bush to the beekeeper is what the paddock is to a cattle farmer – you need it to feed your stock, if there is no feed you can't keep your stock alive. (19)
- Pollination – the current demand to return on horticultural crops. But there is a massive blip in price for that crop, we have put a lot of faith in avocados, and it concerns me. We don't have other industries willing to pay that sort of money and see value for it. If they don't see financial reward, they will pay less or they will bring in what we are already seeing with almonds over east where more growers are bringing in self-fertile trees to reduce their pollination need. We need to make sure we as an industry are delivering value to the horticultural industry as they don't see value in us. We need to show we are providing a good product, our bees are in good condition to pollinate etc. We are struggling to convince horticulture in an environment with lots of feral bees and other pollinators about the extra value that pollination adds. This is an area where work can be done. (20)
- Pollination is a growth industry in a lot of places, in the US it is huge. There is huge potential in the long term for more beekeepers to get involved. But it has to be done well as there is danger in moving bees around the place and if you get a disease it can easily spread. (27)
- Farmers have to appreciate the financial benefits of good pollination, it is not a matter of putting a hive there, it needs to be at a particular time and in a particular place. We need to promote to horticultural producers the benefits and true costs associated with bee hives. Time and effort goes into it, and farmers don't appreciate true cost and are not prepared to pay. It will come but we need to raise awareness. (29)

Q9 Cont.

Pollination Cont.

- A big mover and shaker is pollination of crops – we have seen the price go from \$60 up to \$280 per hive in the last 10 or so years. There is more demand because there are more avocados and other crops going in. We don't have a pollination industry here but that is not to say that WA can't take advantage of it. If it looks like they have a bad season in the east, we could send some bees over but they wouldn't come back. Every year producers are screaming out for pollination and that is why they are paying good prices now. Industries are almonds, avocados and there are also some apple and cherry orchards too. (31)

Markets

- Export – there should be export opportunities for our products like in Asia for all bee products. They are generally amenable to all bee products rather than just the idea of honey on your toast. (2)
- Export market development – research market opportunities. (14)
- Targeting export markets, I think the Middle East, Japan and SE Asia and America. It goes hand in hand with industry as a whole but more so around the pharmaceutical / antimicrobial properties of honey and health properties. We need an industry led campaign that focuses on the value of honey. Work in unison with other Departments, primarily onus on BICWA and in consultation with other entities – exporters and big honey producers and cooperative. (17)
- Stop imports, they are not necessary. If you stop them straight away then the local beekeepers have an outlet and we have our own local supply. The only reason is that they get it cheaper off China and can undercut the local honey but the quality is not there, and they can get a better margin. There is no benchmark to stop price gauging. (22)
- Develop exports into Asian markets like Singapore. We can do a premium market with Jarrah and Marri (which are equal of Manuka) but the quality of our honey and its clean and green image is undersold. We can also push the qualities of our honey in terms of TA for medicinal value through some industry run promotion. (22)

Promotion / Marketing

- Medicinal honey which could increase the price, if not double the price of honey. (1)
- Anti microbial activity in honey; that will put money into beekeeper's pockets. There will be more beekeepers and more beekeepers to pollinate food crops. Jarrah and Manuka are higher premium mono floral markets. We have unique honeys with antimicrobial activity, and we are not pushing it hard enough yet but there is opportunity. We need more testing. CRC was involved in that. (3)
- Promotion of WA honeys (why are they special) – apparently Chem Centre has been going for 5 years on why honey is special and what special ingredients make honey medicinal – they were meant to do it and haven't done it. When we go to market in Europe, we want to be able to state medicinal and bioactive properties like what manuka did. (4)
- The biggest untapped potential is that WA is a clean and green and biodiversity hotspot for honey that is all natural – effectively it could be a state wide marketing campaign or national. International people are prepared to pay more for honey and that could be linked with raising the price of honey. In the shops it is about \$6/kg and a premium product sells for about \$18/kg at the moment. It's a clever marketing strategy and also provides an opportunity to target the export market and intrastate markets. DPIRD has traditionally done a lot of 'buy west, eat best' campaigns – so they seem to be the appropriate body to engage with and collaborate on that. (5)
- Selling the honey at higher prices – marketing of jarrah honey and other honeys and marketing a premium product. (6)
- Education on the quality of pure unadulterated WA honey and promotion. Marketing hasn't caught up with how good our honey is. It is disease free, beautiful honey confirmed by tourists buying honey, it is far superior. (7)
- Marketing – look at what the Kiwis did with Manuka honey, they do it so well, Stephen Davies was heading down that path before he passed away, and now all that research and push has fallen away. We need an industry led promotion and marketing campaign - focus on Jarrah and Eucalypt honey and its antimicrobial and antibacterial properties. CRC has done the research - get it out there. (8)

Q9 Cont.

Promotion / Marketing Cont.

- Capitalise on the uniqueness of honey and biosecurity we have in WA as we are far superior to anywhere else in world. Get personalities involved to get the word out about the importance of bees to the human population, use personalities and tap into the uniqueness of Australia and the extra biosecurity in WA. Approach people like Angelina Jolie and Morgan Freeman (820 acres ranch and planted bee friendly flowers and has 60 hives works full time himself) and name them a patron of BICWA to get the general public to sit up, take notice and make them keen to learn more to get them in the fold and promote WA honey and the lack of disease. (9)
- There should be a different marketing campaign on the importance of honey bees. Woolworths did a good activation last year in Newcastle with fresh food where they took a photo from ceiling and took out every product that was pollinated by a bee. When they removed them, it looked like the toilet paper shelf as 35% of all food is related to bee production. We wouldn't survive without it and the importance of bees to human race is so important, people don't get it and think it is a hobby thing. (9)
- We produce high value medicinal honey and we need to promote that through education and research and focus on the export market mainly in Asian countries as they happily put their hand in their pockets to look after the elderly and don't mind paying lots of money. (9)
- We are all trying to produce the best quality product in the world and don't have to use pesticides in hives or antibiotics and the honey we produce in WA is the best in the world as it is a natural product. It is about educating people that candy honey is not off – you can warm it up to get it back to normal. We need to keep the price up there by promoting a good product. There always has to be a cheaper valued product because people are price driven. Who's responsible? Look at other products meat or fruit or veges – who promotes those to the community – I don't know if its government, it's people like packers wanting to sell their product. Everyone should drive it not to be cheap and to promote and advertise, packers are only just making enough to run their business so they wouldn't do it – everyone's costs are going up. I don't know how you do it without costing lots of money to people who won't be happy. (10)
- We have the best honey in the world, WA is clean and green and we have no antibiotics in honey – we need to market that and promote it. Industry needs to promote so businesses can follow through. (12)
- Increasing awareness of the TA properties of honey world-wide, we should have a marketing campaign like the Kiwis do with Manuka. I am not sure whose responsibility it should be, maybe business and industry. (13)
- The story of honey – honey should follow the marketing strategy of what wine has where they do a better job of the provenance story of time in the landscape and place. They don't do a good job of marketing the story of honey and there is huge opportunity. Market research done by CRC of 6 different countries shows that the story of time and place is the most common factor influencing the purchase price of honey. The story has nothing to do with health benefits, you just need to be a good story teller. We don't do a good job of linking with honey products and that is what is wine based off. Promote how the flavour is influenced by climate, the ethics of beekeepers. (19)
- We have the best honey and best bees in the world and still at the moment one of the best environments – it is about capitalising and marketing on that uniqueness and qualities and having a promotional campaign based around that. (27)
- Marketing WA honey especially the jarrah honey and its medicinal values. The Kiwis are brilliant at marketing manuka. Jarrah is better but no one knows that. We need a marketing campaign that is industry led for the public to know that jarrah is far better than manuka. (29)
- Promote the purity of the honey from WA and bee products in general – the fact that WA is pest free and a lot of that is through the government efforts but it requires more promotion and will also result in better returns on the product for commercial producers as a premium product. (30)

Q9 Cont.

Resource access

- Increased sharing of sites – like the moorings at Rotto there is big demand and low supply. You have a primary user and secondary users and 5 or 6 other people are listed and you have a number on the boat. Something like that would be good with the sites. We share sites and are happy to share. If we had 3-4 other people listed who could use our sites, they submit honey samples 3-4 times a year to make sure they haven't got AFB. Our ideal lessee would be disease free and have BQual registration. Users could say we will let you use our site, if we can buy honey off you. (4)
- Borrowing sites – there is potential to foster a sense in industry that if a site is not being used, then allow someone else to share that. (5)
- Review current DBCA sites - some of these sites people won't use for years, some are marginal and not regular producers – it should be based around people's usage of it and if it hasn't been used for a certain amount of time frame. (8)
- Try and work together and not undercut each other – share unutilised resources in DBCA sites. There should be a rule if you don't use it, you lose it. Some keepers have 100 sites and haven't used them for years and they are happy to pay for it but block it out and won't let others use it. I have offered them to pay, but they decline it. There needs to be another way for DBCA to deal with it to allow beekeepers to share the sites. (15)
- A way to make sure DBCA sites get utilised, so they are not going to waste. There is no point having a site sitting that could be producing something that it's not and have a beekeeper not producing something either so they need to be connected together. We need some sort of system for site sharing. Presently we email DBCA, they email the beekeepers and then they come back to me and say yes or no. I know someone who lives close to a bee site and they contacted DBCA to find out who owned the site because there were bees there and a fire coming, and the beekeeper who owned the bees didn't want them to make contact. The resource is being wasted. I have made some good friends in the industry but there are some who are very cloak and dagger. We do compete with each other in some ways. (14)
- Site access - improve site availability and access. We need to improve site availability and access and have a computerised system as to what's available and what is reserved. It is quite archaic the system but if you could go online and book a site and see what is available. At the moment we don't have access, we can borrow sites if we want to and if they are available but mostly we find private sites. (16)
- Site access for bee hives - I see the ability to access the right environment for beehives is quite hard, I approached Water Corp to see if I could put hives on their properties for dams – they wanted \$1000 to process the application, that's a lot of honey to sell. I understand they want to protect catchment areas but there was very little opportunity for discussing alternatives. There needs to be a less onerous attitude to manage this. Could they hand the management over to an industry organisation to broker sites on behalf of hobbyists? I also spoke to a local town council about their open land and they said they only look after native bees and poison European bees. (23)
- There is a huge waste of forest resources because so many apiary sites are flowering but there are no commercial hives. You could get information about real production of honey. The guys like CRC and UWA identify flowerings and how valuable they are – it might get to a point where if someone's production is not up to standard why should they have access to 100 sites? It might help to manage allocation of sites against production of honey – and open it up for new people to get into the industry. (25)



Q9 Cont.

Biosecurity

- I would like to see more emphasis on biosecurity – there are too many cowboys out there and we need more regulations and more enforcement of regulations by DPIRD. If you go to buy bee equipment, you should be required to show you are registered. There are a lot of beekeepers that are not registered. I run training courses and always ask for evidence of registration otherwise I won't accept them. There should be more encouragement and promotion of the benefits of being registered. It doesn't cost much, if there is a biosecurity breach the owners are informed immediately by DPIRD if they are baiting etc. so they can protect their bees. (29)
- AFB is endemic in the WA environment, it has been here since 1860 and yet many beekeepers who start out and also established beekeepers hives can get full of AFB and then they give up and burn their hives. The regulations around that should be relaxed like sheep lice, then industry beekeepers can manage it which way they see is most economical. Everywhere else in the world they use antibiotics and look after it that way. Of course AFB will never go away, it has been here for so long – I can't work out why we are still having to deal with this. It is the biggest contributor to beekeepers baling out of the industry as they find it too hard and because of the stigma associated with it people don't want to talk about it. The only way to address is at the moment is to either send hives over east for irradiation or burn the hives and pack up your bags. We should be able to show a sample, get a script for antibiotics and use them like they do in the eastern states for European foul brood. (31)

Bee breeding

- Supply of queens and nucs to the wider bee keeping industry and amateurs / hobbyists – untapped market. We breed our own for ourselves and have sold in the past, we have never had any problem selling. There is an opportunity for breeding as demand exceeds supply. The issue is how to organise queen multipliers and do bulk queen raising. Better Bees is not gearing up to do it themselves so it would take another private business. (8)
- Produce bees to sell for export including queen bees – we have no major disease problems and we are clean and green. Beekeepers that are suffering from lack of resource can find a way of breeding bees for export. (12)
- We have a big opportunity in the healthiness of our bees and being isolated with queen bees and packaged bees and being able to target the export market and nationally. We should be promoting that and breeding bees. (13)
- Queen bee breeding – could be an opportunity for a dedicated queen breeder. I am surprised no one has jumped in this space. There is opportunity for supplying both local and export markets. The availability of stock for beekeepers to buy is low. Hence there is massive demand locally and an opportunity for broader markets too. (20)
- It is difficult to buy queen bees. My suggestion is why doesn't WAAS drive that initiative to bulk buy queens 50 at a time and get members to sign up but nothing has happened. That would benefit members out of training and discussion forums as there should be more of a commercial focus to assist people with accessing queen bees. (23)
- Better access to queens for hobby beekeepers. At the moment the system is set up to supply commercial beekeepers with queens and what is left over becomes available to hobbyists. I think there is an opportunity for someone to focus on hobbyists who will quite frankly pay more money than commercial guys but buy less. (25)

Q9 Cont.

Bee breeding Cont.

- There is potential for a certified disease-free breeding program for export – there is no certification program for that currently. We need a breeding program across the state with transparency and to set goals and certification. (28)
- WA is the Noahs Ark of honey bees – we don't have small hive beetle, varroa etc. and we are the only place in the world that doesn't have those so our queens are a lot better – we need to be pushing that. Bee breeding programs could be encouraged so we can sell them and export all over the world. The Rottneest breeding program is for beekeepers' own consumption. We need to start a queen bee breeding program. (29)

Research

- Further research on honey and the antibacterial properties in healing wounds where man made medicine can't. Pharmaceuticals don't want people to know that honey will cure all sorts of things as there is too much money involved. Big business will do what they want when they want and will squash anybody, WA beekeepers will get discredited and squashed by those making too much money from antibiotics. (10)
- The development of premium specialist products – Jarrah turned into high value product with its properties and we could do the same for Red Gum and other honeys we have. (16)
- Trials – opportunity for clinical trials and for hobbyists to be also be involved. (21)
- Disease research – at the moment we have got a lot of big commercial beekeepers who have got AFB and they don't report it and have ghost hives that are not registered. If there is an inspection of an apiary they are given enough notice to move hives. The only option and way to treat AFB is destruction of hives. If we had a system where we had a good production area of the state taken back by government and DPIRD where they remove apiary licences for that area and only allow hives on that site that are disease infected for research. If you are beekeeper with disease then you can apply to put hives on these sites and work in with DPIRD to monitor and breed disease resistant bees. You can still get production off but it would provide an incentive for commercial beekeepers who want to access that site and they also have to own they have got diseased bees instead of hiding. While it is hidden, it is there and it is a threat, but if it is out in the open and there is benefit to coming forward, they will. (28)

- Medical – the high activities of honey need to be developed into pharmaceutical and medicinal products similar to Manuka. In WA we are so far behind New Zealand as they have been making active creams etc. for the last 5-10 years, we still haven't got it out of a bottle. Being able to compete with Manuka would be great and result in higher prices. (31)

Training and Education

- Training – use retired beekeepers to assist with the fundamentals like queen bee raising (e.g. Heather's Honey course). (7)
- More training and education – there's an opportunity for WAAS or somebody to run a lot more modularised training, possibly online to make people aware of doing things more responsibly. E.g. people who buy flow hives and don't do training are unaware of swarming and neighbours carry the can for that so there is a need for more training to say how to stop bees from swarming. They will look at You Tube at what they do in America but that is not relevant in WA. (25)
- Education – opportunity to educate the people who will be future beekeepers (people who transition to commercial) on things like understanding bee health and processes and different ideas on what to do say with a stack of frames full of bee honey. (26)
- People ask me why I bother with WAAS when I am going commercial, but in presentations I let them know as a backyard beekeeper you are my best insurance policy because if a disease breaks out anywhere, it is a backyard beekeeper that will first see it as by the time it gets to a commercial apiary it has spread so far and wide it is uncontrollable. They are our first line of defence and that is one of the reasons why I teach the backyard beekeepers. We can give amateur beekeepers the knowledge and training and ability to spot problems and the confidence to talk to DPIRD and other commercial beekeepers knowing they are going to get a positive rather than a negative interaction. (28)

Q9 Cont.

Irradiation plant

- Irradiation centre – we need one to clean hives in WA. If we get into bee breeding and get combs, we will need to get boxes and combs treated to get a better breeding program without disease. Some guys currently send stuff over east. It could also be used for fruit and other industries as well so there is an opportunity to collaborate with other industries. It would make a great difference and alleviate a lot of problems as a lot of diseases you wouldn't even notice. It will result in healthier bees and hives. (12)
- We need an irradiation plant in WA – that would be good for a mitigation program to throw everything at it every 2 years. We can only test with kits and then we have to destroy the hives and the only way is to treat with a fire. For peace of mind we could put a pallet through. It could be another way of mitigating risk for American foulbrood (AFB). It costs \$500-600 pallet and it has got to go to Qld and back so with freight costs it is not worth it. We could share the facility with other industries like grains and certain products as some countries require irradiation of product for export. (18)

By products

- Pollen – as a health food, there is only one pollen wholesaler in WA and I don't think they can get enough. WA beekeepers are one of a strange few who collect volumes of pollen and can collect a lot of it on certain floral resources. Primarily pollen as a health food and for other purposes like after irradiation being fed back to bees. The barrier is that we don't have an irradiation plant in WA. (20)
- Pollen and propolis – there's growing realisation of the benefits of pollen and propolis so we need to focus on proper harvesting and marketing. (29)
- To produce more by products like propolis and bee venom. There is a huge market if you can produce it especially with new research in treating cancer. At the moment it is very time consuming but there are markets available. (31)

Other

- DPIRD inspects hives for hive beetle; there's hive beetle and disease problems in the Ord. Lot of opportunity to manage this better. (7)
- Drought proof farms - diversification into bees. I also believe there are opportunities where we could drought proof WA family farms say if they put in 30-40ha (not a lot of trees) of trees and once established, they get a return on it and in years of drought they still get a return from

honey. The amount of trees equates to \$150-200,000 a year in Year 5 and 6. It could make a big difference and help with a drought situation. (9)

- More industry collaboration – beekeepers are very secretive people and don't want to share, they're very competitive. (15)
- Industry standards - we don't have something as simple as a standard for the size of bee boxes or frames. There is no Australian standard for bee hive equipment. You can bring in anything you want, and we end up with lots. (28)
- Climate change and resource reports – there is an opportunity to increase yield and identify shortfalls by helping beekeepers determine where they need to be and what works and what won't with climate change. A lot of beekeepers work by themselves, not many network – it is about having more information in terms of where honey is produced - forecasts with flowering periods etc. for different parts of forests and different areas. DBCA and DPIRD could facilitate the information – they have information that can be helpful. Perhaps have a bulletin that can be sent to all commercial beekeepers (who account for a large proportion of exports). Don't worry so much about the person with one hive. (17)
- Change burn patterns - the way they burn large chunks of sand with controlled burns. Back in the 60s they used to do strip burns - 1km wide strip for 5kms once a year and then next year do the next km wide strip and so on. Instead of burning 10 x 10km in bush in one go, have a buffer for fire and also to allow the animals to get out of the burn area. Last year at Nannup there was a burn 20km x 20km wide and thousands of animals would have burnt. They are burning too much and too often and impacting sites every time we want to use them. (18)
- At the moment we have got to have registered kitchens to pack honey for retail, which is fine anyone can get that it is not hard. Someone with 10-20 hives can still pack lots of honey but there is no regulation to stop hobbyists in packing and selling to the public. The opportunity is possibly regulation around that as they impinge on professional beekeeper's income. If they have 10-20 hives and are selling a few thousand dollars of honey a year then they are cutting prices. (18)
- Support industry and support people who are doing honey – WAAS has it together and they provide insurance for hobbyists which is a good thing because people are getting litigious and can sue anyone. (21)

Q9 Cont.

Other Cont.

- Opportunity to get more young people involved in beekeeping - I wanted to start a scheme where hives are subsidised for someone to look after. I approached a couple of schools and the first thing they bought up was insurance and liability based around anaphylaxis and we gave up as it was too hard. (23)
- Technology adoption for beekeeping – weighing hives, humidity, rainfall, weather events etc. that you can read remotely on your phone. Say if there was a fire in Denmark and the fire was blowing towards your hives, then you can look at winds blowing and speed and organise to get their quickly and get them out. There is a lot of technology available including 1000L tanks with water drippers which now have sensors on them. You don't have to check the tank physically to see the water level. It is becoming more technologically advanced, then there is video surveillance. All of these technologies can help reduce labour requirements and help beekeepers to become more efficient. (24)
- Growth in industry – in the number of beekeepers and the number of bees and growth in production of honey, yields. (24)
- An understanding of the honey industry – to do that we need to rethink all the different bodies and work out how to harness their knowledge. If we had the right body producing the right information and making sure the information is shared and guidance through communications it would keep everyone on the same page. (24)
- QA – should be one for amateurs cause if something went wrong it would wreck the commercial industry. It should be promoted more and developed for amateurs. In other ag industries, if a neighbour does something wrong you aren't really affected so much whereas in the bee industry it is more important. (24)
- One of the issues APC and DPIRD need to address is why is it that hobbyists don't register? I don't think it's the annual fee, it's simply because they don't know or it is a little bit too hard. The idea of becoming registered and spending \$60 to get a brand – maybe is too hard. It's not the fee that is the biggest issue – it is not knowing about things or being too hard. How do you police this? Hobbyists do bee keeping behind closed fences and quite often keep secretive because they don't want neighbours to ring the ranger. Registering puts the spotlight on you. We need to make it more comfortable to register and provide some value. It is worth pursuing for DPIRD and APC. Maybe something like the first time you pay only \$30 plus \$1.20 hive or perhaps offer a discounted hive brand or discount with a supplier or \$25 off their first training program. Then if people see value, then the next year they will pay it. As soon as they sign up, then they also get the last quarterly newsletter from APC. (25)
- Hive registration is a missed opportunity but to encourage people to register for the good of the industry. In Britain and Canada they have high registrations and know and can predict what will happen in the industry instead of ad hoc. It is about making people aware of the need to be aware and to register. It's about encouragement to register for the good of the industry. (26)
- Opportunity - Build meaningful Australian standards for equipment - bee boxes, we basically have 8" and 10" frame sizes, depends on which manufacturer you buy from internal and external sizes vary. There are 4 pieces of wood but there is no standard depths etc. – the reason is vested interest. If we develop Australian and NZ standards and say this is what it is going be and if you are a buying a box the standard states the dimensions of a box and frame etc. should be this. It doesn't matter who you buy it from or where it's made, there will be some uniformity. In that standard you can also include materials - treatment of the timber standards to comply with so they don't end up with a treatment that is bad for the environment and bees. There could be an environmental catastrophe in the future and we need to change. In the last 8 years we have had lots of plastic come into the industry – frames, boxes, Styrofoam hives/ boxes (over east fire risk). There is no standard in Australia and it allows for this overseas product to come into Australia that historically doesn't match up with what we have been using in the past. (28)
- Interest in industry – there are a lot of bee associated groups around and a big increase in people involved which is a positive for industry. When I first went to a WAAS meeting, I was expecting to see a few old blokes sitting around the table having a cuppa but was very surprised to see 260 people there of all ages. WAAS now has lots more members and that is a positive for industry with all of the interest. (30)



Q9 Cont.

Barriers

Resource access

- Too many beekeepers are getting in without sites, so they are putting hives in paddocks next to sites. There are lots of hives around and that is the biggest barrier to growth. (1)
- Resource utilisation and access – DBCA and government policy based around access to apiary sites. (2)
- Site access and site sharing – I know at the moment honey is dripping out of trees at Dandaragan as that is tied up and is a resource going to waste. Some guys won't share sites they are not using. (5)
- Resource access – there are not enough sites and they are burning most of what we are trying to access. Access to resources is always a challenge. We have our own DBCA registered sites and private sites and also borrow from other people. It is about opening up new country and issuing new sites, there are a lot of sites held by people who don't bee keep any more – I am not sure how to deal with it but maybe DBCA should review these sites. Some of these sites people won't use for years, some are marginal and not regular producers – it should be based around people's usage of it and if it hasn't been used for certain amount of time. (8)
- The trouble is that some sites you turn up to and there are 10-15 beehives (hobbyists) and you are not sure whose they are and they also put their hives close to commercial hives. Commercial beekeepers are holding the sites and need spare sites as sometime their sites are burnt out. We need options. People are doing what they want. The government can't police it driving around all the time. You could ring them up and dob them in. They are ignorant and don't know. It is the same as the crayfishing industry where the main fisherman are doing it for a job and then you have recreational users. (10)
- Beekeepers in WA are at the bottom of the pile. If you go to the jarrah forest at Karnup, there is one site devastated with no trees and others are drilling holes and smashing trees down whereas if I knocked a tree down it would cost me money. I contacted DBCA to see if they would waive the site fee but they said no talk to Alcoa as they are sharing the site. They are destroying the joint and DBCA is not being fair. Beekeepers are not worth anything to them or the time of day. (10)
- Access to DBCA sites. (11)
- There is too much mining and silviculture / logging – they don't realise the value of beekeeping and the need to spend more time looking after the bush and not chopping it down. (11)

Q9 Cont.

Resource access Cont.

- Access to forests – beekeepers can help with pollination and also benefit in producing honey and have healthier bees as there is less risk of chemicals etc. for beekeepers with these sites as opposed to private sites. There is more work involved and management issues if we don't have access to natural state forests. (12)
- Access to forests – government is spending less and the tracks in are also getting harder to access. (13)
- Site access – it is hard to access good sites because they are tied up. The corporates are also getting involved as well, which is not a good idea because if you get on board with them and use their sites, you are obliged to sell your honey to them. It limits access to those sites. It is vertically integrated with what they are doing and not good for an open market. (16)
- Lack of resources – based around DBCA sites and the impact of climate change. (17)
- Resource access now and into the future and securing that access. The quality of the resource is based on what we have access to. The quality of the final product is reflected by the quality of the bush, the healthier and the older the tree - the more honey it produces. (19)
- The ability for new beekeepers to get access to resource primarily DBCA sites and private sites. Crown sites – I think there is an increase in cost and regulation for start-up which is very challenging for any new business to build and be viable. (20)
- Denied access to national parks - about 20 years ago lobby groups said the European Bee had an environmental effect on forests, so they put a moratorium on anyone with bee sites and those sites have been cancelled not to be reissued. About 20 years ago the Tasmania beekeepers had the same issue and they were very fortunate that a retired scientist presented a paper to government to show bees were beneficial to forests. Unfortunately, that won't happen here and there is a huge resource that can't be utilised, when that resource is there – they should let people in. (31)

Burning

- Burning practices – prescribed burning is done at the wrong time of year and in too big an area. We are talking to DBCA and they are changing slowly. (1)
- Fires – burn offs and bush fires, it is about working with DPIRD and outlining the main times of concern, there is also an issue with when they are burning off – they say they will burn and won't end up doing it. (6)
- Burning is a cost to the state. There is a lack of communication on the issue and they are burning the wrong time of the year in spring and killing jarrah and starving it to death when beekeepers could be utilising it. (11)
- The current burning regime by DBCA and logging by FPC - if we don't have resource to access there will be no bees, we need them to understand. They talk about lives and properties and defending people's homes but they need to have a balance. There is too much burning and too much repeat burning of sites they have burnt in the past that they are not happy so they burn again creating more ground weeds, and then they make the fire worse when there is a wild fire. They need to have different methods of burns. I am not opposed to burning but for them to look at cooler burns and how Aboriginals used to burn and change the ways they burn. WA has a 100,000ha burn quota and we are the only state in Australia where they are paid to burn that much – they won't cut back purely on burns allocated. To us as an industry it makes no sense - we will be living in a desert soon. (12)
- Burning – government keeps burning everything and the sites that are available are destroyed as government wants to burn every couple of years therefore the site is no good for 5-6 years after and when it is ready, they are ready to be burnt again. DBCA should engage with industry and not burn as much and listen to the research. (15)
- Burning of sites – I know a beekeeper whose site was burnt last year and then he checked it again this year and apparently it wasn't burnt well enough so they are burning it again this year. It costs \$110 site each year, we don't get that back the only time we get a credit is when there is a bush fire. I have a number of sites and that's a lot of money if we can't use it. Last year I had 13-14 sites that I couldn't use because of burning and that cost me \$1500 a year. It's a massive challenge because if we are paying for sites we expect to be able to use them. (18)
- Burning of jarrah forests – there is too much. (29)

Q9 Cont.

Labour

- Employees – access to skilled labour. (1)
- Labour – always a hassle to access. (3)
- Access to competent staff is a barrier to growth and competing with the wages paid by the mining industry. It is hard to get good beekeepers, in the past I used to employ semiskilled or unskilled people and train them up but now they can work 2 weeks on 1 off. (4)
- Profitability – if we focus on employees legislation at the moment the Awards are a barrier for beekeeping employing a legitimate workforce because of the nature of beekeeping operations we have to pay overtime and excess wages because of the operation characteristics. We work during the day and then move bees overnight and return to home. It is costly for employers – there are a few people in industry who have been successful employers but the majority are single operators. (2)
- Labour and access to skilled workers – it is not a lot of fun dressed in a hot suit all day and getting stung. It is an issue across the board in being able to access specialised or skilled labour. (22)

Climate

- Climate is the hardest one, it is warming up and it is killing trees. There is less rain, hotter temperatures. (3)
- Climate change – drying climate and becoming more unpredictable. Last year we produced 7 tonnes of honey which is 20% of normal production as rainfall was so poor. We had to feed bees for most of the year. Things are unpredictable and take a long time for flora to adapt and create normality. (5)
- Lack of resources – based around DBCA sites and the impact of climate change. (17)
- Variable seasons – this year Marri fell out of the trees and last year we had no harvest. Beekeepers are struggling to keep it alive 12 months ago and this year it is magnificent. (22)
- Climate change and a number of fires have wiped out big bee operations. (23)
- Climate change. (27)

Biosecurity

- Disease – we need to keep it out of the industry: varroa mite is the biggest threat facing our highly productive industry. We are the most productive beekeepers in the world, and we will lose that status if we get varroa. (4)
- Pest and diseases – threat of an incursion and hobbyists with the risk of disease from derelict hives that people have left in the bush. (10)
- Risk of incursion – there is a big risk with varroa mite as that is our selling point in that we are free of varroa. (13)
- Risk of incursion with varroa mite/ diseases. (14)
- Risk of disease/ incursion – as it can impact on our hives and wipe out the whole honey industry. (21)
- Potential barrier – breakdown in communication within the whole sector should an incursion of an exotic pest arrive. I don't think we have a good system to manage that, and it could be a big issue. (25)
- Biosecurity is a real key issue because we have lots of open trade borders through ports. We keep seeing borer and stink bugs coming through, if those are happening then we could get bee pests coming in too or feral bees. (23)
- Disease – there is always the risk of an incursion of disease which could destroy the whole industry. (24)
- Risk of varroa mite and small hive beetle – we need to prepare for them. (29)
- Risk of introduced pests and diseases and being able to maintain our disease-free status. (30)
- AFB is endemic in the WA environment, it has been here since 1860 and yet many beekeepers who start out and also established beekeeper's hives can get full of AFB and then they give up and burn their hives. The regulations around that should be relaxed like sheep lice, then industry beekeepers can manage it which way they see is most economical. Everywhere else in the world they use antibiotics and look after it that way. AFB will never go away; it has been here for so long – I can't work out why we are still having to deal with this. It is the biggest contributor to beekeepers bailing out of the industry as they find it too hard and because of the stigma associated with it people don't want to talk about it. The only way to address is at the moment is to either send hives over east for irradiation or burn the hives and pack up your bags. We should be able to show a sample, get a script for antibiotics and use them like they do in the eastern states for European foul brood. (31)

Q9 Cont.

Profitability

- Risk of reduction in honey prices if we get a disease in the industry our prices would be reduced and we would be no different to the rest of the world who are treating with chemicals to control disease/ pests which taints the honey. WA's biggest opportunity is the pureness of honey and its quality – organic honey. (6)
- Cost of production- is a challenge with honey price, labour and input costs. (8)
- Cost of production – it is becoming more difficult to make it profitable because of the increase in transport costs, fuel costs, insurance costs and labour costs and labour is impossible to get. (17)
- Fuel cost and rising input prices – fuel has doubled in the last two years and honey prices are less now than 2 years ago. (18)

Promotion

- Getting people to understand, not only is honey a wonderful product when pure but it also has amazing health benefits which are more powerful than originally thought. Like Manuka our honey is medical grade honey which has amazing results. It has cured ulcers on feet that wouldn't heal with medicine. There is a blockage in promotion. (7)
- Funding for educating people about honey is a barrier and could be overcome, but there is not enough money. The way industry is promoted over the years, it has been promoted as a cottage industry not a professional industry. New Zealand has set a benchmark price for their Manuka honey and there is a massive price difference with our top range honey. With proper industry management, benchmarking pricing can lead to an increase. We can do it with petrol and set the price, why can't we do it with honey? (9)

Imported / Adulterated Honey

- Adulterated honey coming in and imported honey – we don't want imported honey coming in because of the risk of disease and competition with local industry which is really a cottage industry. (21)
- Imported and adulterated honey – Chinese groups are trying to buy out our industry and monopolise on getting our wholesale honey. It is suppressing the wholesale price and they are taking our good quality product back to China and sometimes diluting it and selling it back to us. Imported honey annoys me. Some monopoly groups are suppressing honey prices and it forces people to go underground to sell honey – I see lots selling at markets. I know some are not

registered or controlled. A lot of Asian people get into it at local markets. It is a worry as there needs to be some sort of overall control, I have never had anyone check my hives out or me. And this is the first time someone has asked me about beekeeping. These people are not abiding by the food labelling requirements or registering their hives. (27)

- Cheap imports are always a problem, unfortunately industry doesn't want to raise the issue. Total imports were just shy of 8000 tonnes of which about 3000t was from China and then also South America. Capilano import honey from China and Brazil and then mix into lower cost honey and then on sell it as an ingredient or as cheap brands of honey. We can't do anything about it, but make sure we monitor honey to make sure it is real honey and that it won't affect consumers. Along with the importation of honey there is also the risk of importing chemicals in that honey. It was detected before in honey that was sent from WA (that was originally imported) and that crashed the whole export market to Malaysia and we can't sell to Vietnam anymore because of that. Even if imported honey is sold on the shelf here, we run the risk that if something is detected it gives a bad impression for all honey. (31)

Honey markets / pricing

- Farm gate sales need to stop as it is a recipe for disease. There are moves to have it registered and get rid of the cottage industry. There needs to be traceability for consumers, I would like to see a QR code on every jar and a provenance story. (9)
- It is hard enough to sell honey as when you go into Aldi there is adulterated honey at \$6/kg which is not real honey - how do you compete with that? It shouldn't be allowed to come into WA at all. There are beekeepers with lots of honey sitting in their shed. Capilano also bring in sugar syrup and mix it with honey. It is landed in Australia at \$1.68/kg and mixed with Australian honey and then sold for \$10/kg. I know other keepers with 10-20 hives and they produce a palletcon of honey at \$5-6/kg which is destroying the industry. They are virtually giving it away. How do you tackle it? More regulation? There is always someone who doesn't care about the system and do their own thing. How do you police it and get through to these people who are devaluing our product. It is kicking me in the face and what I am doing is not worth anything. (pallecon 1460 kg / honey is 1.45 of water). (10)

Q9 Cont.

Honey markets / pricing Cont.

- Imported honey – stop bringing it in. Our prices go down and we can't substitute cheap crap that has less flavour. Australia has unbelievable honey and we need to keep the quality high and ensure we have a quality product for consumers. People need to realise Australian honey is so much better. (18)

Unregistered beekeepers

- I would like to see DPIRD enforce hive registration. There is a huge number of keepers who don't have registered hives which infuriates me. They are a potential disease breeding ground. The point with hive registrations, if there is an outbreak then DPIRD can go to those in the area and alert them and protect those who haven't got it and the commercial guys. A lot of hobbyists haven't bothered to register as there is no stick or carrot or enforcement. The biggest issue is that they don't know what they are doing and then if the hive dies, they leave it out the back. People don't do them in as they also live locally. DPIRD guys are spread thin across the state and they don't have the time or mandate to enforce it. The legislation is there for hives but there is no enforcement. There will be an issue in the future with a disease outbreak in these breeding grounds which will be the problem. DPIRD are under resourced. (22)
- Too many people have their own idea that they don't need to register and don't understand that in being registered that the future of industry can be managed and plans and policies put in place so things can happen in a positive way for the industry. (26)
- Some people are evasive. When I get involved with other people who buddy with me, say if I get a swarm of bees, I will build them up for someone and then give them information and hive registration forms. There are thousands of them evading this, and they are the biggest danger we have got as we have the best bees in the world as far as being disease free. The danger is people introducing disease into hives and they are not even aware. It worries me that we are in a prime position with bees and we need to make sure we keep that, the more people we have not regulated, the more chance an outbreak of disease will get out of hand. (27)
- I hear there are a lot that are unregistered; it is not prohibitive as it doesn't cost a lot of money, and it is legal requirement. (30)

Packing sector

- Competition in the packing industry – we already have a big company that sells honey and in some ways someone starting up to compete with them doesn't help the industry. They come and go. If they want to be successful and stable, the only way to get into the market on a big scale is to undercut others. It doesn't help anyone when they are trying to make money out of the product when one is already cheap enough. I see companies that come and they have honey on both ends of the scale from the dearest honey and also the cheapest – I can't make sense of it. The product all has the same name so why would someone buy expensive honey when they sell it cheaper down the road. (14)
- Access to markets is a challenge, whether we go to the limited number of honey packers or if we can export ourselves. If I wanted to export myself there are lots of hoops to jump through. We could perhaps do it as a co-operative. Quality assurance is another cost for smaller producers with very little benefit. (16)

Industry Structure

- The overall corporate structure of the industry, the way it is now there are too many groups and government is confused on who to deal with. (9)
- Lack of regulation and transparency – there too many vested self-interest groups and there is a lack of transparency across the industry on what people are doing. It comes back to the development of a new body. At the moment the standards of practice don't have to be followed because if you don't there are no ramifications. There needs to be ramifications and transparency in the industry needs to be up with that. We have to get rid of self-interests. The guidelines, rules, codes of conduct need to be meaningful then there needs to be standards that are enforceable if people do not comply. (28)
- Infighting amongst groups – commercial and hobbyists haven't come together. WAAS and WABA and WAFF Bees don't get along. A new group structure will go some way to overcome that. (28)

Q9 Cont.

Other

- There does need to be some sort of regulation as industry grows, as knowledge increases and people get in for the wrong reason. I think government and research people will take a more active role including in the Kimberley. I see danger signs coming up. Unless there is some sort of regulation put in with backyarders etc. who don't have registered hives. I don't want to do them in as they are in my town. (7)
- The talk of beekeepers having to deal with Aboriginal groups about access to the bush we access now, that will be a challenge with all sorts of demands. (10)
- Urban sprawl – the land is getting taken up by developments and they are bulldozing for housing close to Perth and we can't have bees there. (15)
- Hobbyists are not interested in connecting formally and don't see it is an industry - the large majority of hobbyist beekeepers are not aware and are probably not interested in the 'commercial' issues being raised. I think the fundamental issue here is that hobbyists simply don't see themselves as part of an 'industry'. In discussions with my peers, we estimate that about half of the hobbyists are not registered with DPIRD and the other half (3,800 or so) are. A very small minority of registered beekeepers, who are also 'hobbyists' would be able to differentiate between DPIRD and the APC, presuming they are one and the same. Only about a third of registered beekeepers belong to WAAS. To me this indicates that the majority of hobbyists are not interested in connecting formally with organisations associated with their hobby. The various 'bee' social media groups seem to be the way that a big group of them stays connected, but their exchange of information through these channels is largely focussed on immediate problem solving. I think it is very difficult to connect hobby producers into an industry when they simply don't see themselves as belonging. In a similar vein I wonder if people who might grow potatoes in their backyard see themselves as part of the potato industry. Hobby beekeepers are probably not much different. (25)
- It worries me about beekeepers as I see it from the sidelines. Overall, within the industry there is not enough young people. I am not sure how people are getting transitioned into commercial keepers but we have lost a lot of people in the industry. (27)
- Growing new people in the role – there are a lot of old guys with a lot of knowledge, and we need to capitalise on that before they move on. (27)
- No irradiation plant in WA. The government has looked into it a number of times, not just for bees and biosecurity but for a range of fruit and vegetables and for a mini plant it doesn't stack up without government support, of which there is none. (20)
- Queen bees - the barrier is access to genetics: it is limited to what we currently have as legislation prevents the import of genetics and biosecurity risk. That impacts our ability to export when only breeding from bees that are clean and free and when they come across their first varroa and small hive beetle they don't stack up. (20)
- Labelling – you drive around and see honey for sale, local honey is written on the label and half the time in washed jars. The labelling laws are very clear - they are not onerous, they are there to protect beekeepers and people who are buying food. Labelling comes back to shires enforcing it. (22)
- Government interference, there is too much unwarranted regulation in everything. The government makes new rules but never drop old ones. People are concerned about what they can do and where they can do it i.e. honey production and jarrah dieback and others will put a limitation of the number of hives. Government makes laws that don't work because people don't understand it and they make it as difficult as possible. (24)
- As hobbyist there are not a lot of barriers, we can get through them. (25)
- Fragile bees - WA is fairly unique in the world as far as disease or lack of disease within bees but it also means because we shut the borders for so long we are creating a fragile bee through in-breeding. For example hives get sent from WA to America for pollination don't last long when they are hit by Varroa mite it wipes them out as we have no resistance. (28)
- Export markets won't take off because it costs too much to freight which will kill anything. (10)



Question 10

Q10. Reporting of production figures – currently there is little data available.

Respondents believe that production figures could be captured in a number of ways either through packers; a levy; industry survey; self-reporting of data; compulsory reporting; through the hive registration process or an estimation of industry data.

It was suggested that packers/ exporters/ wholesalers could notify industry on their honey purchases and the different types of honey, however not all beekeepers sell their honey on. The national honey levy (4.6c/kg) that is collected by the AHBIC provides another option, but it is limited to those that produce over 1500kg. While it would give some indication, it wouldn't capture production below that.

Surveys of beekeepers, either self-reporting or mandatory, was also raised as a way to collect data. Organisations like Agrifutures and ABARES also conduct their own industry surveys. Other ideas include the development of an App for self-reporting or an extension of the newly developed DBCA apiary site App. Production could also be estimated on a sample of a small number of hobbyists and commercial beekeepers.

The use of sentinel hives, similar to those used to detect biosecurity incursions, was also suggested that each beekeeper could have one hive which is weighed and measured, and data is captured and reported and then averaged out across hives. It was mentioned that hive production is very dependent on the Queen.

The current hive registration process, through DPIRD, was a popular suggestion for the collection of industry data through the current database and for beekeepers to report their figures annually against their hive brand and to capture the information in an online portal. Once again there was concern that this may not be totally accurate as a lot of data would be missed with the number of unregistered hives.

Despite these suggestions, respondents believe the challenge is that beekeepers may be guarded, secretive and not entirely honest and may be reluctant to share their information and trade secrets. Concern was raised that production information is private and that there may be ramifications for people personally in reporting it, particularly in the case to government bodies and the ATO, as many beekeepers deal with cash sales.

The majority of beekeepers (77%) consulted would readily share their production figures whereas 17% would not and a further 6% said they may share their information in the right circumstance.

Respondents understand that production information is critical for industry to develop, allows industry to determine its contribution to the economy and the value of beekeeping, and is useful when advocating to government. The collection of data benefits not only industry, but individual beekeepers in terms of providing benchmarking opportunities and the ability to get an understanding on where their production is, in comparison to other beekeepers and to gain an understanding of how to increase productivity.

With production figures viewed as personal and highly confidential information, respondents would like the information to be kept anonymous and confidential as they believe there will be a greater participation rate as a result. Given the competitive nature of the industry, beekeeper respondents expressed concern that the information could result in site competition or theft if the information wasn't kept anonymous as beekeepers are protective of their own patch.

The suggestion was made that the information should be collected by a government department in a secure environment rather than an industry body, as it is too close to industry. Concern was raised that the information could be detrimental to industry if it got into the wrong hands.

Q10 Cont.

For people to be open and honest in sharing production figures, industry would need to show benefit somehow and guarantee the protection or anonymity of beekeepers to encourage them to work together to secure their own and the industry's future. As quoted by one respondent 'if you can measure it, you can manage it'.

For the 17% of respondents who said they wouldn't share their production figures, they said it is personal/ confidential information; that data is the new gold and has value; and that they wouldn't share with industry or a government agent. The barriers appear to be mainly around who collects the information and how it will be used.

a. How can industry capture this information?

Packers

- Through the packers is the only way to do it. Any individual can be packing their own honey so it can be hard to get a real feel on how much honey is produced. (1)
- It's a tough one, perhaps through polling beekeepers directly. Another way is to get the packers to notify how much honey they purchase on the local market but you wouldn't capture everything. You would have better traction with packers than beekeepers. There is no industry mechanism. (5)
- Get exporters or wholesalers to report their kilos. (6)
- Some data could be captured with what is sold to wholesalers if they are willing to share. That could be linked to the type of honey and beekeepers, not a site. Maybe by post code or area or floral source. If they are willing to share the information or not is another story. It comes down to what is considered private information and barriers regarding who collects it and how it can be used. (20)

Levy

- 80% of production will come from 20% of beekeepers - ask them how many tonnes they did or BICWA could ask them and then use a multiplier to estimate total industry production. Previously industry/ABARES used to ring to get industry production figures and would ring individuals - that is easier than state bodies. There will be no recording, without action, if you do record - what will you do with it? Take from A to B and demonstrate growth - measure the performance of a number of beekeepers (10 biggest) and monitor that for the next 10 years. Most beekeepers at the apiary gate spit out an IPC (cubic metre of honey) no-one records that. That could be a way and there is also a national levy where beekeepers pay a 4.6 cents per kg levy on honey every time they sell over a certain amount. That could provide an opportunity to determine how many kg of honey are sold above a certain level. (4)

- Levy may be able to track it, but it would have to be voluntary levy. It can't be compulsory because government won't do it, but you need to trust people. (1)
- The National Honey Levy through ABIC is 4.6 cents a kilogram and is split into a few areas - 2.7 cents emergency plant test response, 0.3 cents national residue service (test honey), 0.1 cent Plant Health Australia for national biosecurity and 1.5 cents research and development. It is payable for those who produce more than 1500kg. The average hive produces 200kg a year. If a beekeeper sells to a packer, the packer or whoever puts the product in the container then pays that fee. So you wouldn't be able to find out how much was produced unless people packed it themselves. It would be an honour system. DPIRD may be able to get the figures. (12)
- Honey Industry Levy - AHBIC - you don't have access to information below a certain threshold but it could make up a considerable portion of production. (17)
- The levies service records - they know how much each packer or person sells that pays the levy (national). It only captures anything over 1500kg so that would allow for about 2/3rds of honey sales but it would give a good indication of the state of the play for that year. (31)

Survey

- You could survey it, I don't know how honest people are. There used to be a stat form to fill out every year for the Commonwealth government - how much honey, pollen etc. through ABARE. Perhaps a levy? People aren't going to be honest I wouldn't think. (3)
- National Survey done through Agrifutures every second year. (16)

Q10 Cont.

Survey Cont.

- Most beekeepers would be able to provide figures, but I don't know if you will get it. There are no capture methods as to how much honey is produced from an apiary site for that year. Only the number of beekeepers is recorded. It would have to be done by a survey and hope people answer it. How many hives, how much they produce per hive. The ABS sends out forms to businesses and I have done one before and maybe also Agrifutures do too. The problem is that when APC upped the fee once, suddenly everyone's hive numbers dropped. Who will go out and count the number of hives, it is so much of an honour system to get results and people are guarded with their figures. (12)

Self reporting

- I don't know, the only real way is through self-reporting. Or if someone like say Capilano took delivery of the state's production it would be easy but lots sell privately. You could get beekeepers to self report. (8)
- Ask people – it is difficult because people are reluctant to give away trade secrets. (16)
- There are a lot of beekeepers who don't like to say how much they produce as they are giving away trade secrets. It would have to be an anonymous submission of data of what is produced and where. If you have a good percentage of participation by commercial beekeepers that is way to capture data. (17)
- Apps and Programs could be developed to capture data but getting people to use them is the challenge. (20)
- Ask producers for information – they could have some hives that are sentinel hives and every beekeeper have one hive that they weigh and measure from and then you average it out. We have a few hives that are weighed and send reports in. Some hives do better than others depending on the queen. (21)
- Only by people being open and honest. I can't tell you how many kilograms I produce. I don't know how to do it as there are too many beekeepers and the local market is such a significant market. Commercial beekeepers aren't doing that and market under their own label or to a packer. You can't capture data. (22)
- BICWA could send out an anonymous survey to all beepers in WA to self-report. (31)

Compulsory reporting

- Make it compulsory reporting as we need an understanding of what a producer produces; we can capture some information from the honey levy but if they are not packing over 1500kg a year then it is missed data. It doesn't capture production per hive. We do a hive based FFS through APC maybe there is a place to build that in. It can't be built in BQUAL easily but not all beekeepers are certified. How do you make it compulsory? It would be good to know kg per hive and also what vegetation resource it came from so you can say Jarrah forest is worth so much to the bee industry and Marri harvest is worth this much. And we could work out the different economic contributions between the different varieties. (19)

Estimate production

- Production figures in the case of hobbyists would be primarily honey, they might produce a little wax or pollen but it is so small it is not worth counting. In terms of honey production, you can almost do estimates based on a small sample of hobbyists. Inevitably most are less productive than commercial guys so you can infer an average 60kg of honey a year based on a sample of 50 people and infer that and then get a good idea. In terms of the commercial guys, they know exactly how much they produce but whether they want to tell anyone is another thing. Most sell to packers or on the side. Between producers and packers they must have a fair idea of production but sharing of information is another issue. (25)
- At the moment you won't because there are too many barriers and ramifications for people personally in reporting. Anything that is reported to any government body is basically reported to the tax man. So the backyard beekeeper will sell their honey, that is not processed in a registered food preparation facility as that costs money and they don't declare their income so they don't want to report it as there are ramifications for them. In the commercial field, you have a lot still selling honey under the table for cash - they sell hives, queens, nucs etc. unreported for cash in what gets termed as the carton economy – it is real and extremely large. It is impossible to capture all data. There is no real mechanism that will accurately capture that. All we can do is apply modelling on a scientific basis the best we can and adjust models according to information changes. It will never be 100%. On the commercial side for export and major honey production, the modelling and reporting we currently have is the best we will get. (28)

Q10 Cont.

Hive registration form

- You would have to do two sides - one with the producers and make reporting mandatory to supply data. It could be done with registrations through DPIRD and get producers to declare volumes and any increase, say like 20% increase this year. You could also make retailers that sell honey produce mandatory data on sales figures and then compare that too. (9)
- On the hive registration form you fill out they could also ask for production figures and what the season was like. (11)
- I don't know how to collect unregulated data, maybe DPIRD with the enforced hive registration can send out a questionnaire each year - how much did they harvest? Until they enforce hive registration (a lot of people are unregistered) then you are only half way to get that data of what is produced and half way to honesty on what is produced, and that is people who are not scared of the tax department. (22)
- If you have a hive brand, you could report your harvest against your brand on an annual basis and capture the information in an online portal. (23)
- In other states there is mandatory reporting of hive movements to the government so it wouldn't be hard to add in production for hives into that. But if beekeepers have BQual then they don't need to provide their details to government as the information is reported through BQual. You could get DPIRD to do that and ask for the records/ information. (13)
- There has got to be some way, you can expect or require some production figures when you licence hives as to how much they are producing, where they're producing etc. For small amateur beekeepers not selling honey, it doesn't have much impact. Anyone selling honey like commercial beekeepers it could be done anonymously or privately. ABARES gets reports on wheat tonnages and kg wool shorn but individuals are not exposed. (24)
- Professional beekeepers keep records but it depends on their honesty and what they put forward. For a hobbyist you can ask people to provide the information and when you register your hives then you also report your yields etc. for the last 12 months. (30)

Other

- If there was a database set up. (7)
- It is important for people to keep records and to share and to be made aware of information for the good of the industry. Like with the anti-vaxers they don't understand it is for the good of the community, not yourself. If you encourage people to keep records like the beekeeper booklet that comes out every year in Queensland (produced by the Australian and New Zealand National Beekeeping Magazine). You could put out documents for people to keep records that show the types of honey they produce and then they can tell how much honey produced. I haven't seen one like this in WA. (26)
- I am not sure how well it is captured now. The issue is how guarded are people about disclosing how much they produce and from where as they appear to be protective about it. Maybe you need to show people the benefit of it somehow and they might be more forthcoming. (27)
- The government used to get us to fill a form every year for the honey production levy and send into government. I don't know why it stopped. There is also the Ag Census but I am not sure if beekeepers are in it. (31)

Don't know

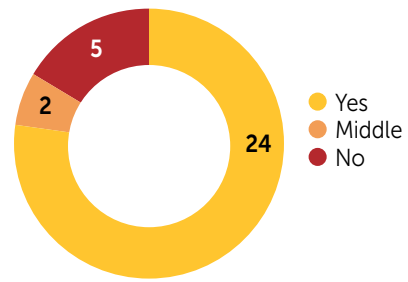
- I don't know if there is an answer, the current way the FFS is collected through APC committee is by production figures. The exception to that is bees as it's done by hive numbers with registrations. I can't think of a way to capture production. (2)
- Not really, I am not sure. Production figures change from beekeeper to beekeeper and sites are different and seasons are too. (10)
- You are not going to as I doubt you will get honest beekeepers. You have got the honey levy and that covers what you sell. The bigger producers, their figures are out there. But there are a lot of figures not there and I don't know what you can do. (14)
- No, they wouldn't be willing to share, they would still under-report it and never give true figures. A lot keep it to themselves as it affects their pension if they honestly report it. (15)
- No and I don't think it will happen because it's personal business information with commercial in confidence. (18)
- It is very difficult. (29)

Q10 Cont.

b. Producers only – would you readily share this information? Why/ why not?

Yes

- Yes, but say if I get 100 tonnes of Jarrah honey a year worth \$40/kg bringing in the money then government may then say it will increase site fees, and that will increase theft and then people know where my hives are. If it is private and confidential that is great, but if it is in the wrong hands it won't benefit the industry and will be detrimental to industry and beekeepers. It's a yes but I want to know who will be holding the information and where it will go. (1)
- In a secure environment I would share that information. Even hive numbers aren't published and are securely held by the APC and they are not to be distributed. It is highly confidential and productivity figures don't exist. (2)
- Good to research. Over many years this has not been addressed, people are frightened about something don't know what. (2)
- Hive numbers need to be accurately reported for voting rights within BICWA (although this may not bother some people) so everyone knows how many hives you've got so you can easily work out kg per hive. (4)
- Yes, it is critical for the bee industry to develop. (5)
- I wouldn't mind, we have accurate records on how much we produce and the variety we produce – I don't mind passing that on. I would be very interested to know what other people do. (7)
- Yes, happy to share information but would want it to be kept anonymous. It helps to paint a picture of the industry and can be useful when we advocate to government as they want an accurate picture. The information can also be used for benchmarking. (8)
- Definitely, other people will benefit and will know where money should be spent if they are controlling the industry and it will also allow industry to determine its contribution to the economy and the value of beekeeping. (9)
- Yes, I would share some but would want it to remain confidential. (11)



PRODUCERS PREPARED TO SHARE PRODUCTION INFORMATION

- Happy to share, the only way to encourage people into the industry is to share information. If you keep it guarded people think there must be something wrong and there is a reason why they shouldn't get in. We want to show what a great industry it is and that you can make it a profitable business with good hive management and if you get involved in the industry, share information and talk with other beekeepers. I am more than happy to share information – there is no smoke and mirrors, a lot of them don't want to share that information. (12)
- As long as it is kept anonymous and confidential, I would much rather it go to a government department rather than an industry body. (13)
- The hardest thing with production figures is tracking it, we are not set up to track it. I share figures of what I sell and what I buy. Hive yield is really hard, because of the record keeping involved and you may lose hives throughout the year. Then the issue is, I get honey off people – then I have to stocktake what's there. (14)
- No problems, I don't see why people are secretive on production per year. I am a small producer and would love to have more information. I'm not of the secret squirrel mindset of older keepers as you are not gaining or losing anything from sharing data. (15)
- Yes, there would be greater participation if it was on a confidential basis as people are protective of their own patch. The data would benefit everyone and industry. (17)
- We collect our own data and have our own spreadsheet which is part of QA and traceability – I am happy to give data to industry but it is pointless unless everyone is doing it. We don't have to put names to it. I don't have a problem with people knowing but I can see why they would be hesitant as industry is quite secretive, though it is changing. The easiest way forward is state producer ABCD and the quantity. We have to work together to secure our own futures where we become more open, share data then lobby more effectively to government. (19)

Q10 Cont.

Yes Cont.

- Yes, I don't think confidentiality is important, if I was sending in data I would like it to be used but not to be made public. It should be collected by a government department or private enterprise. (21)
- Yes, I have nothing to hide, we all need to pull together. (22)
- Yes, it would give me a benchmark to compare against what other people are getting and provide an opportunity for improvement. (23)
- Yes I've nothing to hide. It is important for industry and any peak body (not necessarily to know who doing what) but collectively it is important. If you can measure it, you can manage it is the old adage. (24)
- It is important to get some production information to determine if industry is growing. It won't do me any harm to share. Perhaps collect from a few sources and compare against the rest but information would have to be confidential. (25)
- Yes. (26)
- Yes, I don't mind, it is amazing how different it is from year to year. A hive might produce 90kg one year and the following year 30kg and I am trying to understand why that is, it is infuriating. (27)
- Yes, because of the way I have been exposed to industry and the training and the mental way I work through industry when reporting. It is a culture of positive reporting and honest reporting in industries I have been involved in. When I sell honey, cash doesn't make a difference to me, as I report it all to the ATO as it is an income source that needs to be reported and to show this is not a hobby but a business. Therefore, it needs to head towards making a profit and if everyone does the right thing, the country is better off and society is better off. (28)
- Yes, it is important to show the value of the industry. (29)
- Yes no trouble at all, it is a great idea to share records as then you can see what others are getting in the local area. Mine is only floral honey but it would give me an idea if I am average, above or doing something wrong. A good benchmarking tool. (30)
- Yes, anonymously as it would all go into one pot. It would have huge benefit to lobbying government. We could show that WA produced 1800 tonnes of honey and also how much we sold, even go to the farm gate price received. It would help with attracting funds to run the bee industry. It could also show apiary sites usage – a lot of newcomers to industry say apiary sites held by big beekeepers are not being utilised. It has

some merit that industry can show data. Or the DBCA with their new online platform, they could have a part to capture that as well. It will include when you move onto a site you click on it and then when you leave, and that you also put down production i.e. 4 tonnes off this site this year but if people tell the truth, who knows. (31)

No

- Probably not, it's a personal thing – it depends who will be looking at it and the confidentiality surrounding it. I wouldn't want industry to collect it. (3)
- I wouldn't do it – it's nobody's business, data is the new gold and is worth money, and I'm not going down that track. There is enough data collected on us with phones without adding more to it. (10)
- No, I won't release the data as it is confidential information. Not even share it with a government agency. (18)
- No, more so because I don't keep that data. I am production driven not KPI driven. 100% sales are private sales and I don't have a need to wholesale or provide a weigh bill docket. It is a mixture of effort, and need and reward – to do that personally there is no value in that. I understand the need from the industry's perspective. (20)

Undecided

- In the middle yay or nay – I had information from people around me as to what they are making out of hives and I see that some people work harder than others. It's a hard one, if people know the information they will look to where else they can put their bees to get better results. I don't mind sharing, but there are a lot of cagey keepers who don't like to give too much information away. It is a competitive industry. But I would be happy to share information if it is going to benefit the industry as a whole. (6)
- Possibly, I would prefer confidentiality, there is some IP there and I am concerned to give away everything as keepers get concerned about prime sites and where bees do best. There is a risk that everyone will park on their doorstep and the same goes with pollination. It would be better if someone independent collected the information otherwise it is too close to industry. (16)



Question 11

Q11. Can you suggest 2 areas of research that you would like industry to undertake in the near future?

There were a range of research ideas raised by respondents which include more research around the properties of honey and its medicinal value; bee breeding and resistance; resource management; and biosecurity issues.

While it was mentioned that the CRC has already done a lot on work on the properties of honey, respondents would like further investigation on the medicinal value and health benefits in honey and within the various species, not only for Jarrah honey. Scientific research on the exact properties of medicinal honey was also raised as a research opportunity, similar to work the New Zealanders have done with Manuka where they discovered an active component and have also developed products for the cosmetics industry. This would help determine the activity, price and market. The need for more clinical trials was also mentioned into acne, burns, skin blemishes and as wound dressings to follow up on the tonsillectomy trials. Other ideas include testing Marri for low GI, the ability to prove traceability in honey and to prove provenance, and the need to get the new Optical Density Assay test (ODA) that tests the total activity of honey and developed by the CRC certified for commercial use.

Bee breeding has been raised several times throughout the industry consultation phase, and there is lots of opportunity for further research into breeding disease/ pest resistant bees that will be immune to Varroa, AFB and other incursions that may threaten the bee industry in WA. As respondents said, it is about being proactive rather than reactive and preparing industry through a genetically stronger bee. Other breeding opportunities include research into the temperament of bees and breeding more docile bees. Given WA's clean and green environment, and biosecurity restrictions, there is concern that there is a lack of new genetic material available for local breeding programs to ensure the ongoing viability of the industry.

One respondent mentioned a German breeding program in an isolated area where stud queens are drone mothers, and keepers bring in virgins in nucleus hives to mate off the drones which helps disseminate genetics.

A number of research ideas based around the management of resources were also raised which include research into burning frequency and the effect on species diversity and change in flowering patterns (smoke impact); the impact of burning on trees; alternative ways to conduct burns offs instead of burning massive areas along with comparison of low intensity burns versus high intensity burns. Another idea is understanding the effect of bee pollination on native vegetation as a surrogate pollinator and their potential contribution to an increase in food availability for threatened species like black cockatoos.

Respondents also raised research ideas for the biological control for wax moth (a serious pest of unpopulated bee equipment) and the legislation change required and an effective way to control chalk brood effectively and better manage bees. It was also mentioned that industry requires more research into what other exotic diseases/ pests there are overseas that could threaten the industry and gather knowledge and prepare the information. Once again it is about being proactive. The small hive beetle and the potential risk of varroa also require further research into how to control them and information to better educate beekeepers.

Research ideas around bee health and management include a focus on nutrition and keeping; how to remove bees from honey supers; the impact of pesticides and herbicides on bee health; and the impact angry wild bees have on bee hives. Other ideas include research into by products like bee venom, pollen, and propolis including the nutritional benefits and health benefits. Further export market development (pollen and honey) and research was raised and further investigation into technology to assist beekeepers to improve yields and better manage their operations through automation.

Q11 Cont.

Pollination research suggested by respondents includes data to back up claims on the true value of bees and that they help increase yields and the best way to approach it with hive placement and density etc. Other research topics include scientific data on the distance between apiary site centres to determine if it could be reduced (3 km distance radius) to open up more room for apiary sites along with more research on the interaction between introduced bees and native bees to help lift the moratorium on access to national parks.

Other suggestions include research into better understanding the crystallising factor when honey flows are slower; climate change and the impact on beekeeping and change in traditional honey areas; and how to set up a beekeeping operation with no carbon footprint.

Bee health / management

- Bee health and hive health – a lot has been done on how to keep bees healthy but focus on nutrition and keeping. (1)
- How to remove bees from honey supers? When we remove the honey from the beehive, we use a clearer board in between the full box of honey and new empty box. The idea is that bees walk up through that and remove themselves from the box of honey. We need to use a blower to blow out bees from full box of honey, the problem is that bees get out. We need some research on a better way to better manage that. (12)
- Impact of pesticides and herbicides on bee health – it is a controversial topic and there seems to be big chemical industry versus the rest. (23)
- There is a mixture between docile bees and angry wild bees – some research on that and how it affects bee hives when there are a lot of angry wild bees moving around. It is a worry as more beehives get introduced. (24)
- The main thing for Australia and WA is to continue to sort out problems of pesticides. In America it is horrendous with people spraying hives to stop bugs like varroa and hive beetle. It is probably a problem because so many beehives are moved from place to place to follow the pollen and nectar flow, which has a detrimental effect on bees. (26)

Apiary Sites

- Distancing between apiary site centres – apiary sites have a pin point location as the centre of a circle and then it is a 3km distance radius. That has been based on hearsay and old time rumour that about 2 miles is about the right distance between one load of bees and the next load of bees. There is no scientific data behind that so it is worth investigating that and finding that that it could be reduced which would open up more room for apiary sites. (2)

Resource management

- Resource management – it would be interesting to look into burning frequency on sandplain country and the effect on species diversity. Older beekeepers are saying as it increases you start to lose species diversity, which is super important to the industry. (8)
- Burning - find out what it is doing to the trees, trees are dying in the bush and it is not though lack of water but lack of food from burning. The understory too as it produces nitrogen and that is what Jarrah thrives on. Maybe the CSIRO. (11)
- Burn offs – more scientific information on burning – control burns, burn offs and bush fires as there must be other ways to do it instead of burning massive big areas. (15)
- Resource management - burning is quite topical and also a barrier. DBCA has a program to burn off country. There needs to be research on if you do low intensity burns (which tends not to kill everything) versus high intensity. The complaint is that you have a valuable honey crop and then a fire comes through one month before, rather than waiting for flowering and then burn. They need to be smarter about it. Research should be an ongoing thing showing what sort of burning works best. There is room for both – fire for safety and regeneration, and also not to do regular burning so there is no crop and it's not so intense so that nothing grows. (16)
- Burning – I believe they are burning too often and that is why in the last 4-5 years the flowering patterns have changed dramatically as I believe there is too much smoke on the buds. It is stuffing with plants natural cycles. I believe the constant burning is doing more damage than good. I can't see the research happening but it would be nice. The trouble is that everything is blamed on global warming. (18)

Q11 Cont.

Resource management Cont.

- Native vegetation - understanding effects of bee pollination on native vegetation as a surrogate pollinator. You might find keystone species like Marri for example if there is a food shortage for black cockatoos which is primarily from Marri trees then honey bees can help increase food availability for the cockatoos. This can play into maintaining social licence with helping with threatened/ endangered species like the black cockatoo. (19)
- Flowering of trees – there are people who monitor flowering of different trees who are interested and good at that, we need more research on that and for the information to be shared. Hobby beekeepers don't move hives around as much but all beekeepers like to know what is going on in the area. (21)

Bee by products

- Bee venom and pollen – the nutritional benefits; a lot has been done but there needs to be more. (3)
- Venom – proven now it can cure breast cancer. There is a study that has proven that at UWA and there is not enough news about it and its health benefits. (9)
- There is a professor from Texas who has grown human stem cells and human skin inside a hive and says production in the hive is better than a lab as it is 100% sterile inside a hive. Propolis is a natural disinfectant– where bee dies. There is not enough knowledge out there and people don't take it seriously. (9)

Honey properties

- Urgent – get the new Optical Density Assay (ODA) test certified for commercial use. It tests the total activity of honey, it was capped at 35, the new test gives robust results above 35 – the higher the better and the more we can charge. Its anti-microbial and anti-bacterial strength is higher. CRC has developed it and we trialled it, and they found out different labs were using different strains of bacteria and they have now corrected that and are doing ring tests and sending honey to different labs where they hope it will come back with the same number. It needs finalising. (4)
- Honeys here have unique bioactive properties (marri and jarrah honey) - antioxidant and anti- bacterial activity and there is the potential to develop those wellness products and for potential wound dressings, there is a lot of work in that space. (5)

- What is in the honey medicinal value and the benefits in honey. (1)
- Test Marri for low GI (underway hopefully) – it has been on the table for a long time and I hope it goes through as it allows market differentiation. (4)
- Traceability in honey and being able to prove provenance of honey, the CRC is working on methodology for that to fingerprint honey. (5)
- Focus on medicinal honey and more clinical trials, there were some done last year with UWA with people who had their tonsils out where half had a placebo and the other half honey. They needed 2000 to make it a scientific paper. Bush medicine could improve more clinical trials outcomes and result in better health with things like acne and also the Fiona Stanley burns unit – serious clinicals trials and also skin blemishes for cosmetics. (9)
- Manuka essential oil – Loreal is the largest buyer, there is not enough being done in Australia and we could be getting more benefit as an industry and country if the science was there to back it up. But it costs money to do it. (9)
- Medicinal properties of bees and bee products. (10)
- Deeper investigation into TA properties and health benefits of honey. (13)
- Medicinal side of honey and therapeutic side – different species and values and to continue on with that research. (14)
- The different types of honey and its benefits – continue with the CRC research. (16)
- Talking about TA rating of honey it's great, its only promoted in jarrah there is TA in other qualities so we need more research on other honey like Red Gum, Karri and other types as they have just as much TA as Jarrah, and that needs to be promoted more to help increase the price of monoflorals. (18)
- CRC is doing some tremendous work and research into the health and medicinal qualities of our honey where there is a unique honey type i.e. jarrah, marri, blackbutt. Even as hobbyists it's valuable to say my honey is Jarrah and have a screed on its health benefits. The health benefits of various honey types research should be ongoing. (25)
- Research more on the medicinal properties of honey. (29)

Q11 Cont.

Honey properties Cont.

- We have to do scientific research on the exact properties of medicinal honey, the same as manuka where they discovered the active component MGO. Once we identify what chemicals are in Jarrah honey then we can identify how it is beneficial for human health etc. and how much and the quantity is in Jarrah like Manuka – which will help determine the activity and the price and where to market it. (31)

Biosecurity

- Biological control is available in other parts of the world for wax moth – wax moth is a serious pest of unpopulated bee equipment, there is small amount of research and legislation change that would allow that biological control to be used here. (2)
- Find out what exotic diseases happen overseas and what is most disastrous and try and get firsthand knowledge here so if it occurs here, we have data and information to handle it – be proactive about what's out there. (11)
- Chalk brood – the way to control it effectively. At the moment there is no research on it and in managing the bees they go up and down. (13)
- There are a number of diseases on the east coast like Small Hive Beetle and Varroa and there has been a lot of research done. But it's not a case of if we get it, but when it will arrive here. We need more research on the management of these pests/ diseases etc. that are yet to arrive; manage and educate current beekeepers in WA on diseases/pests which ultimately we will get that are on the east coast. When it hits it will be like a cyclone. It comes back to a database and everyone being registered as well. (22)
- We need more focus on pest and disease management and we need to look for new methods of managing these given the fact that they are problems. There are not many solutions, it is about being proactive. (23)
- Eradication of varroa – proactive how to control. A lot has been going on in America and over east. When it does come, what do we do to manage? Proactive rather than reactive. (30)

Bee Breeding

- Genetic breeding – we really need a way to get genetics out into industry. In Germany stud queens are drone mothers and they place them in an isolated location – people can bring in virgins in nucleus hives and can mate off those drones. It is a good way to disseminate genetics and there is a barrier there in terms of disease risk. (5)
- Genetics – cost verses access- we have the Rotto Queen Breeding program but that is mainly for commercial beekeepers. We don't have dedicated queen breeders and beekeepers are struggling to buy good stock. (20)
- Look at temperament of the bees – sometimes you get an aggressive hive but you also get calm hives. The other day because of the heat I didn't want to light the smoker so I opened hives I needed to – and did some work without smoke. There may be a breeding opportunity in terms of temperament and production. You get some hives that are resistant to varroa. There are 2 types of activity bees do to protect themselves – one is they chew legs of the mite and other is they throw the varroa mite out of the hive and round them up and stop them breeding. There are Varroa resistant bees in America. We can be more proactive and start looking into it now. (21)
- Genetics – at the moment it is done purely by 7-8 beekeepers who have pooled resources for the Rotto program. DPIRD used to do it but backed off and now it is back to the commercial guys who have continued with it and seen the potential. They do make genetics available in the wider field once they have got what they need. But with the genetics we need some form of disease resistance, hence more research. (22)
- Conscious improvement of genetics - being an island I am not sure how much new genetic material is coming in from other countries given the biosecurity issues. We need to make sure we have ongoing viability of the industry through genetic management. (23)
- Research into genetic influences for hygiene in bees, ability to resist varroa – it's happening around the world, we should be doing it here. Our bee pool is probably quite different genetically to a lot of northern American and European bees as they have never evolved to fight varroa. We need to continue to do genetic research into how create bees that are resistant to varroa. (25)

Q11 Cont.

Bee Breeding Cont.

- Breeding a bee that has an immune system effective against AFB and other disease/pests as well. A genetically stronger disease resistant bee so that when bees get infected they don't have to be destroyed, and it is like a common cold. (28)
- Breeding varroa resistant bees. (29)

Markets

- I am interested in exporting in the future and would like more information on the exporting side of pollen and honey. (7)
- Export channels – I'm happy to pay a tax to fund more research. (9)
- Marketing - export development and research. The Egg Board in past days used to do all the marketing and fixed the price. The board was responsible for marketing, so they bought all the eggs and sold all the eggs. How will it benefit me if industry markets WA honey? I do get it, that it helps. If a body markets the honey, why are they not buying the honey? They promote the product but not the market – it won't benefit everyone and there will be some push back from people. It should be a user pays. With honey there are too many players and everyone is fighting over the pie which is to the detriment of each other and industry. We need to ensure WA and Australia are getting paid good money for their honey. (14)

Pollination

- Pollination of agricultural crops – and data to back up claims that bees will help increase yields, so they can understand the effect of bees on pollinating certain crops, what is the optimal hive density, placement pattern etc. And being able to transform that into a tablet version and use technology like drones to show a farmer the pollination pattern. (19)
- Pollination in the horticultural space – there is work to be done in the value space to get beekeepers to do better pollination and how to get the best for the crop they are pollinating. There is lots of work out there, but it is not well understood by the crop grower or beekeeper or the beekeeper is not prepared to do what the crop grower wants i.e. – move bees around. The thought is that you spread bees around through the crop evenly to get a better pollination, but that varies from crop to crop. (20)

Other

- Technology improvement to assist beekeepers to improve yield and work load. (5)
- Research technology and automation that will make a beekeeper's life easier so they are not so worn out each night and have bad backs. (10)
- Investigate beekeeping operations that have no carbon footprint. (10)
- Climate change and the impact - what is happening because the traditional honey producing areas are no longer, things are changing all the time even this year with the heat - things changed which normally don't happen. We need to try and understand that and assist beekeepers. (17)
- Gaps in knowledge in the semi commercial beekeeper space – they are not scaled up and mechanised like the commercial beekeeper. They are half arsing their way in their skills and how they bee keep. They have lots of little trucks and trailers, some are a little bit mechanised and some are not. There is more work to be done working with the semi- commercial space. (20)
- Better understanding of the crystallise factor which occurs more when honey flows are not large, and when they are a bit slower. (24)
- Update the Floral Guide - Floral guide for beekeeping published by DPIRD 'Honey Plants' bulletin no 3618, written by Frances Smith pub 1969. It is long overdue for an overhaul. I use it quite a lot - the seasons drift a little bit and flowering times and outputs of certain species change over time. (2)
- National Parks – needs to be more research on the interaction between introduced honey bees and the environment and native bees because to have any hope of lifting the moratorium any evidence needs to be scientific based evidence. (31)

Other comments

- CRC reports would be great to see what they have been studying in the last 5 years in layman instead of scientific jargon. A one page in simple language. It was a bit of an anticlimax reading a report of stuff I already know on the medicinal traits and qualities of honeys for red gums and jarrah – it didn't tell me anything new. (15)

Q12. Do you have any other feedback you would like to contribute to build your industry's strategic plan?

- When people first start in the industry, they get bogged down with information. It would be good if industry groups communicated with newcomers on their purpose and benefits to beekeepers. (7)
- I am concerned about regulation and that hobbyists will be locked out and they will make it hard for us to sell honey because of the regulation on how you have to do it and then require you to have a big shed that is bee proof etc. They will make it too hard for the hobbyist to have a few hives and sell their honey. (21)
- We used to have so many hives to have so many sites back in the day – once they changed the rules on the number of hives for sites, the second they did that hive registrations halved. (14)
- Our biggest killer is insurance. My fees are nothing compared to an insurance bill. (14)



- a. There is huge inertia to staying the same; change will be difficult and resisted. Hope to set up a business that maybe other generations work with. (29)
- b. Most of our bees are on pollination and given it is so hard on the bees for them to survive, to succeed we have had to learn to raise our own queens. With the weather conditions, you can also lose hives. (7)
- c. I do some work with the CRC on antimicrobial properties of different honeys. Leptospernum is better than Manuka. There are some trees that have been declared the most active out of leptospernum between Tammin and Merredin but it is too sparse to put hives out there. (9)
- d. There is lots of interest in beekeeping, people ringing up and asking questions. With the growth of horticulture in the Kimberley the demand for beehives will grow and I think the last thing you want is a rogue up here in it for the wrong reasons. They need to love bees and be passionate about it if they want to succeed. (7)
- e. It is very important, if we can salvage more honey out of sites that are not destroyed by fire, when mines take your sites they should pay you or compensate you. (11)
- f. There are a lot of people just starting out beekeeping looking for knowledge and if we don't give it to them it could be dangerous. There is an opportunity with Bee Buddy groups – members of the peak body could move around to groups and talk to them briefly about what is happening and ask how can we help? That would be a huge benefit. (24)
- g. I have got a lot of time for the bee buddy groups as they help beekeepers better understand and know their industry and a bit of common knowledge goes a long way in these groups where people are starting up. They only need a little bit of information and they start to understand it. (24)

Appendices

John Karasiński

CURTIN UNIVERSITY ECONOMIST
– phone conversation, June 2021

LECTURER

– Western Australian School of Mines: Minerals, Energy and Chemical Engineering
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Need to be very careful as there is a lot of mischievous information on the internet on the honey industry globally and in Australia, some deliberate while others are not sure of what they are doing.

Has done a number of reports which are evidence based. Had a problem in collecting evidence, it has taken a lot of time to collect data because people say stupid things on the internet. I was frustrated with seeing information available and then in checking it to see if it was accurate would discover it wasn't.

- Collects data on the WA industry and has been doing it on the WA industry since 2018 and distributes it to people within the industry.
- IBIS World do a report on the American honey industry, and they do lots of industry reports and update every 12 months. It is current information.
- Pollination – need hives for pollinating avocados and the like. It is not as big as it has been made out to be but it is growing. The difference between Australia and America – honey bee keeping in the US is an industry of pollination and 90% of the industry is focused on pollination, they import \$500 million of honey from SE Asia each year. It is about food not sweetener. Our industry is about sweetener and a little bit of food.
- What I have done is modelled the Australian pollination industry by states by crop, what is the economic value of the pollination industry for WA - \$1 billion. This information has been used by Victoria when they have gone to government to seek money. The report is over 5 years old now but is still the latest information.
- WA commercial beekeepers there's only 50-75 of them, 4,000 registered in WA by end of this month, the rest are amateurs 3,700 are hobbyists. But industry needs a survey to find out who's who, WAAS put together a questionnaire and then the Honey CRC put one out and they should have results.
- WA doesn't know the number of registered hives; the number of hives is important because the definition of a beekeeper is based on the number of hives – commercial or amateur, 50 hives commercial – 49 amateur same definition in NZ. WA has a lot of comparisons with New Zealand. In US 500 hives is commercial.
- In 2008 425 bee keepers were registered in WA, now 4,000 and mostly attributed to Flowhive as these are all amateurs coming on, there was a mad rush for people to get hives, that is where the increase came from. WA during the April 2020 COVID-19 lockdown there was growth in the number of Flowhives into WA and growth in registrations; that month of April had 40 new registrations compared to same month in previous years. This April returned to normality, away from lockdown.
- Queen bees \$1,000 in WA and NSW \$50 – high quality more productive queen bees.
- Number of hives – there's lots of holes in data sets and Australia is overestimating. The reason is the doubling up in counting of hives on the east coast where pollination industry exists – each state requires bee hives to be registered therefore if operating in a few states across borders, they are counted more than once.
- Until 2008 Australia had more hives than NZ but since then they have continued to grow. NZ now has 900,000 hives and Australia has 300,000 hives.

Appendices Cont.

John Karasiński Cont.

- Pollination of crops – there are 53 food crops, not 35 as originally stated in research reports.
- Global bee numbers / hives have done a report and will update the information.
- In WA it's estimated about 50% of hives are unreported. The royalties that commercial beekeepers pay to DPIRD is based on the number of hives. My suspicion is that it is similar to the crayfish industry.
- Amateurs – with 3,900 amateurs in WA (who produce 20kg a hive a year) what do they do with the honey they produce? They're not selling 8,000 kilograms in WA. What is the impact of that honey for commercial beekeepers – they argue about impact on industry and need evidence to support it. It may be a threat to the industry. Price - \$5/kg x 20 = \$100 x 8,000 is the potential loss to WA beekeepers and loss of income to industry if it is true.
- Increase in population in Perth 2010-20 has the net increase absorbed the extra production?
- Prices are sticky – price is set by Capilano and remains constant. If the above is true with amateur honey production, the extra 8,000 tonnes what impact would that have on price – will it come down? What is the price per kg for each year since 2010 – look at the price movement.
- There is no production data or consumption data for WA, there are national figures for consumption. I have done some calculations. I am hearing people are becoming more health conscious, but I am not sure if it is an industry myth – we have no evidence.
 - Reports available:
 - WAAS presentation
 - Global bee and hive numbers
 - Value of pollination industry
 - WA beekeeper registrations to date from DPIRD figures.

Gerard Leddin

DPIRD

– phone conversation, June 2021

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- DPIRD estimates the WA honey industry is currently worth \$50m in terms of honey sales, wax sales, queen bee sales etc. We think that is underrated and there is huge potential there.
- Value of pollination – The Department values pollination services at around \$1.1 billion this year – this reflects the value of fruit (apples, almonds etc.) that require pollination. If you look at avocados, almonds they are exploding in plantings at the moment and we expect to see a fair push upwards in demand for pollination services in WA in the next 12-24 months.
- Honey exports (around \$7 m/year) from WA last year were worth \$8m, exports were mostly to Singapore, Hong Kong, Malaysia, UAE and Japan. We export about \$7.5m worth of raw honey, about \$400,000 in queen bees and packaged bees.
- Consumption of honey in WA there is no data. About \$40 million of local honey is sold within Australia. Because the market is so diverse – Coles and Woollies right down to the road sides – it is not a consistent market like eggs where we can track and define the market clearly.
- Producers – with honey there are 160 commercial producers, we know another 300-400 are semi-commercial and there are about 3,000 amateurs and to what degree they sell honey is unknown.
- Data for WA is vague, one of the things the Minister requested two years ago and we couldn't find was any data on the WA industry. That was part of the reason for the Agdots report. The lack of data is a huge challenge which the industry faces.
- I have some export data on honey and queen bees and how much wax is exported from WA but it doesn't take into account the domestic market. There are lots of holes in terms of data and we don't know how much is sold locally and interstate which is half the problem. We are pushing up hill to find data, it is very frustrating. Because it is a smallish industry and it has been fragmented, it is small scale, and the market base is pretty diverse so finding the data is impossible.

Appendices Cont.

Gerard Leddin Cont.

- The problem is that we can track the commercial guys, and ABARE has some data around them, and we can somewhat track the semi commercials, but it is hard with the 3,000 amateurs who we can't track at all. Some of those are commercial guys who are deliberately flying below the radar.
- Honey production per beekeeper – on average professional bee keepers get 150kgs of honey per hive per year, semi professionals get around 90kgs/year and it's a lotto for the amateurs.
- Honey price received for bulk honey (mainly canola honey) will generate around \$7/kg at the farm gate. As the quality improves the value improves – for example wildflower honey will average around \$20/kg and jarrah honey will bring \$50 +/kg.
- Quality is a major issue the CRC /BQUAL are working on – speak to Liz Barbour (CRC) on this issue.
- Number of hives – commercial average is 400, semi commercial ranges from 150-50 hives and then below 50 hives is amateurs, but those lines are blurred.
- Production in WA – there is no data so there is a glaring gap, we have spent many hours scratching our heads as to how to resolve that but the reality is we know how much comes from professionals, we are semi confident around semi-professionals but we have no idea around amateurs.
- Production on a desktop calculation, professionals have 400 hives on average and produce 150kg in an average season, there are 160 commercial producers that gives a rough indication.
- One of the issues that is somewhat neglected is the issue of biosecurity – it doesn't get the audience it should, we are lucky in this state, we have the most disease free bees in the world. We don't have any of the diseases that the east coast has. When you get a spread of amateurs, biosecurity becomes a key issue for the industry because we are more likely to see risks in amateurs as opposed to professionals as they are not experienced at seeing disease and tracking it. Some hives are not well attended. You only have to look at New Zealand which had varroa mite and see it can have a huge impact on the industry. Biosecurity is the biggest issue the industry faces.
- Amateurs range from quite a few with 30-50 hives down to backyarders with 1-2 hives.
- Getting data is very hard and because industry is so fragmented it makes it more difficult.
- Beekeepers by region is basically near in possible to identify because professionals move their hives around, one week they are in Geraldton and the next week Wickiepin then Bunbury. It destroys any data as it is not feasible to track this movement.
- Crops requiring honey bee and insect pollination are pome fruit, almond, apples, walnuts, avocados.
- Profit margin for beekeepers – there is no data.

Michael Bellman

CAPILANO HONEY SUPPLY MANAGER - phone conversation 2021

- *Agknowledge* recently delivered a project for DPIRD on Development and application of a prioritisation framework to analyse and rank WA agribusiness investment opportunities.
- Following is an extract of the interview with Michael Bellman, Capilano Honey Supply Manager as part of that project. The same questions were posed to individuals from 26 identified business opportunities.



What are the drivers within honey the industry?

- *The biggest driver is pollination as a lot of industries rely on bee keepers for pollinating, like almonds want to grow 4-5-fold over next 5 years, and there is a push in resources in regards to beekeeping sites and bees in general.*
- *Industry worth including pollination in WA is \$1 billion, honey bee industry is \$30 million. Wescobee is \$15 million alone and the balance of \$15m is made up of smaller producers. There is a lot of growth from hobby and small beekeepers starting up their own backyard hives; a lot go direct to IGAs and markets and we haven't got the data for those. Production is 20kg honey per hive/year.*

Appendices Cont.

Michael Bellman Cont.

- Industries like avocados, almonds, fruit in Carnarvon like rock melons and watermelons and some other fruit and veg can't produce without bees pollinating crops. At the moment they are lucky as there is still a lot of native bees where avocados are but if they get disease and have biosecurity issues, bees will die and they won't get the pollination.
- Export markets are Japan, Malaysia, Singapore, Mauritius, Africa, China, Philippines, Europe, Canada, US; they are all growing – 20% increase in exports last year in terms of value.
- Manuka honey is higher value, standard honey is ground flora or spring honey.
- Wescobee has different honeys to get a taste range - spring honey, eucalyptus, jarrah, mallee etc. Jarrah and Manuka are the two most expensive honeys and these are the main ones exported.

What are the main barriers to industry/activity?

- Capital is limited. In terms of beekeepers, they are limited by investing in their own business – buying hives, trucks, bees. Extraction plants are expensive to get honey off - \$100,000 for a plant and most commercial guys have their own.
- We are limited by the margin we make at supermarkets; consumers are only prepared to pay so much for honey and if the price is too high the market will drop quickly. Export is the way to go, the last 12 months it has been off the boil because of China trade disruption and COVID-19.
- We don't have enough bee keeping sites in WA, we are limited by what is available in state and Crown land and private property. Flowering seasons have changed over the past 10 years due to climate change, clearing, fires, suburban sprawl etc. Intake is down 30% into Wescobee – it used to do 3,000kg, now around 1,000kg but that could also be because there are more packers.
- The honey industry is quite labour intensive, we are struggling to get beekeepers and backpackers.
- Knowledge is a limitation – knowing when things flower and where to go next; we need to look at training.

What opportunities are there for future investment (throughout the supply chain)?

- Investing in packers to grow their businesses or packing if someone wants to target export markets. We could double the size of the industry but our machinery is old and needs upgrading. Another packer would help with competition. There is potential to grow the export market – it is huge, but limited by supply with jarrah and high value honey and resources. It could easily triple in 10 years. Plantations like Manuka and even Jarrah where we could grow monofloral product to help keep up with the demand overseas. If you look at doubling the high value market you will need more access to resources to get it or plantations.
- Job creation – beekeeping is very labour intensive; 2,000 hives require 10 people, extra 10,000 hives you need at least another 100 people. Extraction and packing plants anything up to 5-10 people running those. We have 15 people at our packing plant, we could double up. Downstream a lot of industries rely on beekeeping – suppliers and beekeeper wholesalers, packaging companies. We could easily double the number of jobs.
- Our company has Kerry Stokes' involvement, and Twiggy Forest is also looking to invest.
- Australian honey is in demand, but in the past 6 months it has dropped off because of China. We are clean green and in a unique position where we don't have varroa mite (it's everywhere apart from Australia). We don't have to worry about using pesticides. Otherwise, opportunity to buy into market to get product.
- There is room for other players, 22 packers in WA now and that has grown from 2-7 in the last 4-5 years. A lot are beekeeper packers with their own gear and own label. It would be nice to have people invest in beekeepers, hives, and extraction plants to supply us.
- In terms of pollination, the industry will need to invest in that area as well as avocados will need at least 6-7,000 hives in the next 5-7 years.
- We need promotion and marketing to get to the next level, and that requires investment.
- Agritourism spin offs as well - House of Honey in the Swan Valley, Colony Concept in the south west and small honey shops.

Appendices Cont.

Michael Bellman Cont.

- ROI – we work on 30% margin in our business, if you go more high value it can be a 50-60% margin. Potential with high value honey and with pollination, they are making \$50 hive, you can double that.
- Pollinators – avocado industry requires bees from August to November and that is good honey season. You don't get honey at the same time and that is offset with a charge of \$150 per hive per week so there is about \$50 profit. After pollination, the bee gets knocked around from pollination so need to build up for 6-7 weeks for the next honey season and then they are ready to go in Jan/ Feb.
- Industry has the potential to be a sustainable agribusiness that employs people and it has a lot of potential as a high value product that is in demand.
- At the moment we are 2-3rd priority in the government/state forest area in terms of prioritisation of products, I would like honey to be first. Currently it is timber first, and then mining. If it is flowering, we should have access, we are shut out of places at the moment.
- The industry is still below the radar with regard to potential, if we can follow down the wine path and focus on what flowers are there and what consumers overseas want, the industry will grow rapidly.

What is your vision of where the industry/ activity will be in 5 years' time?

- I would like to see at least 60% of product exported overseas and all high value Australian unique product like the wine industry so we don't have to rely on the supermarkets to dictate pricing to us. At the same time there will be a flow on effect as the beekeepers will make more, packers will make more and they will employ more people and need more resources.

Can you nominate anyone else we should speak to?

- Honey for Life, Shane McLindon – beekeeper and packer, sells to Japan looking at investing in that. Had some outside investors.
- Matt Colvin, APIS operations – beekeepers, head of WA Farmers Bee Keepers Section, own extraction plant, exports honey.



The Authors

Agknowledge®

Agknowledge® is a small company providing strategic management advice to a range of agribusiness companies and farming enterprises across Australia. Agknowledge® principals Peter Cooke and Nicol Taylor work nationally from a base in Western Australia, and combined they have over 65 years of involvement in agribusiness at all levels from strategic planning for agribusiness companies, government and industry policy, research, succession planning and business development.

Agknowledge® has extensive experience of working closely with agribusinesses to assist in the development of individual business units and overall group strategy. Agknowledge® has a reputation for bringing clarity and depth of thinking to complex situations and for identifying viable strategic pathways that will build value and stand the test of time.

Our advice and contribution is informed by:

- **Extensive specialist knowledge of key industry sectors** and the issues that are driving operational and strategic change, a significant first-hand experience of working in roles with responsibility for strategic development, and the practical factors that may constrain the implementation of strategic initiatives.
- **Government strategy development experience:** Agknowledge® has completed many successful strategy and innovation engagements with government. We also bring practical experience of how to develop strategy in the government context.
- **Industry and infrastructure experience.** We draw on our team's strong knowledge of regional industries as well as our numerous engagements in conducting industry analysis and building strategic business cases. Our robust quantitative analysis supports the qualitative perspectives, underpinned by strong analytical capabilities.

Julia Ashby has worked with Agknowledge® since 2014 conducting one on one industry interviews on topics including: inland aquaculture opportunities, the value of grower groups, citrus industry consumer research, surveillance needs for invasive species, consultation for the WA Wild Dog Action Plan, and risk management in the Western Rock Lobster industry.

Julia has been involved in the agriculture industry in a professional capacity for more than 25 years. With a Bachelor of Business in Agriculture Julia is a former ABC Reporter who has also worked with grower groups in a communications role in Mingenew and Esperance. Julia took up the reins as the first employee for the South East Premium Wheat Growers' Association, based in the Esperance Port Zone of WA. Over thirteen years with SEPWA Julia worked as sponsorship officer, group development officer and media officer. Julia now runs a communications consultancy business where she provides her media and communications expertise to a range of agribusiness, industries, farmers and agricultural projects.

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