



Department of
Primary Industries

Protected Cropping and the NSW Planning & Approvals Process

A Review



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Protected Cropping and the NSW Planning & Approvals Process: A Review

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More information

Dr Alex Wells, Agricultural Land Use Planning, Grafton Primary Industries Institute | Trenayr Road | JUNCTION HILL NSW 2460 |

www.dpi.nsw.gov.au

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John Friend, Rob Williamson, Lilian Parker , Liz Rogers, Mark Hicky, Selina Stillman, Rebekah Gomez-Fort, Kate Johnson (NSW DPI), Ian Sinclair (Edge Land Planning)

[Cover image: Western Sydney University Glasshouse Training Facility]

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Executive Summary

Protected cropping is expanding rapidly worldwide, across Australia and within NSW. It currently has a national farm – gate value of \$1.3 billion per annum, represents 20% of the total national value of vegetable and flower production and is expanding at 4-6% per annum (Smith 2017). Although figures for the total production and value of protected cropping are not available specifically for NSW, of the 1341 Hectares of vegetables and 101 Hectares of cut flowers grown nationally under a controlled environment, approximately 37% and 12% respectively, are located in NSW (Smith 2017). Further, based on data supplied by Horticulture Innovation Australia (HIA) for the period 2015/16 FY, the production of fruit that is typically (but not always) grown under some form of hail or bird netting such as apples, blueberries, cherries, peaches, plums and nectarines, has been estimated to provide an additional \$280 million worth of production for the State in 2015/16.

Notwithstanding some uncertainty surrounding these figures, it makes NSW a significant contributor to the national protected cropping industry. Due to the increased interest in developing protected cropping systems and due to an increase in land use conflict associated with protected cropping in some areas, the Department of Primary Industries commissioned a review to determine the status of the sector and explore the relationships between the sector and the planning and approvals processes within State and local government.

The method used was to survey recent protected cropping project proponents, council planning and assessment staff as well as industry participants. This was combined with the information obtained through a desktop review of planning legislation within New South Wales, other Australian States and internationally. An inspection of the Western Sydney University's Greenhouse Research Education Facility, which is a world class high tech glasshouse, was also undertaken in order to explore the nexus between the planning and approvals process and industry practice.

Some of the planning issues revealed by the survey included the perception that agricultural developments were often considered as a low priority within local government, although this varied between regions. Proponents regarded council staff as helpful, but with limited knowledge of protected cropping design and operations. Nevertheless, council staff demonstrated an eagerness to learn more about the sector if information were to be made readily accessible.

A consistent theme raised by proponents and industry participants was that the planning and approvals process was considered to be inconsistent between local government jurisdictions. While differences between peri-urban and rural councils are to be expected, it would assist if planning and approvals processes were similar between councils in similar rural environments.

Protected cropping land use conflict issues were not identified as being materially different from other forms of land use conflict, so there is no reason to assume that lessons learnt by other industry sectors are not relevant to protected cropping. There is a significant amount of information about protected cropping and intensive agricultural project planning available. This could be better used by proponents to support their Development Applications (DAs).

The majority of the planning issues from a proponent's perspective were related to the National Construction Code (NCC). HIA is currently funding a project to identify how best to address the construction issues in the NCC. It has engaged an engineering consultant to prepare a nationally recognised greenhouse construction standard within the framework of the NCC.

Delays in the planning and approvals process were seen by proponents to be caused by the limited knowledge of the sector by council staff. By contrast, council staff regarded any delay as being the result of a proponent's insufficient supply of relevant information. In general however, delays did not appear to be commonplace and usually had more to do with proponents not fully understanding what information had to be provided to councils. Overall, the survey results did not show that the planning and approval process discouraged new projects.

As a result of this Review, the following 8 point plan and indicative timeframe, is intended to facilitate growth in the sector through optimising the use of existing resources and initiatives. Implementing these recommendations will also improve the way in which the protected cropping proponents and local government approval and planning personnel are able to approach these types of developments:

1. DPI to work with industry to improve the level of understanding by proponents of the information that usually is required by Councils when submitting a protected cropping Development Application (DA); **Ongoing**
2. DPI in consultation with DPE, industry and councils to update where necessary the 2011, 4 page Fact Sheet titled '*Preparing Intensive Plant Agriculture Development Applications*' and 2005 '*Guidelines for the Development of Controlled Environment Horticulture (1 & 2)*' ; **30 June 2018**
3. DPI to work with industry to develop information for councils which outline the economic and employment benefits of protected cropping as well as key inputs and management issues that can impact a protected cropping project's viability; **December 2018**
4. DPI to promote the Western Sydney University Greenhouse Research Education Training Facility to Councils and industry as an example of best practice; **Ongoing**
5. DPI to promote the HIA project on construction requirements (VG 13055) and ensure DPE and councils are aware of new greenhouse construction standards once accepted by the Building Council of Australia in 2019; **December 2019**
6. DPI and industry bodies to promote 'Greenhousetoolbox.com' funded by Hort Innovation, which is a web based resource that provides growers with access to the latest information and advice on design, structure, operations management and local government approvals processes; **Ongoing**
7. DPI to produce a reference list on the DPI webpage with links to major documents and web resources on protected cropping enabling planning information to be readily accessible by council staff, proponents and DPI staff. **30 June 2018**
8. Industry, with the support of DPI, to work with DPE and local government to facilitate growth in the protected cropping sector by improving information about key inputs including electricity supply and cost, water, transportation links, packing and farm storage facilities, labour and workers accommodation; **Ongoing**



Tomatoes growing at the Western Sydney University Greenhouse Research Education Training Facility.

Abbreviations

ABS	Australian Bureau of Statistics
CSP	Concentrated Solar Power
DA	Development Application
DCP	Development Control Plan
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
HIA	Horticulture Innovation Australia
LEP	Local Environmental Plan
LGA	Local Government Area
NCC	National Construction Code
PCA	Protected Cropping Association
SEPP	State Environmental Planning Policy

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1.0 Background

According to the Australian Protected Cropping Association (PCA), 'Protected cropping' (PC) is a generic term to cover all horticultural systems under some form of protection, cover, shade cloth, greenhouse or glasshouse. Protected cropping is growing in importance due to low water use per unit product, the production of high quality and consistent produce, and the reduction of production risk to the supply chain.

For the purpose of this report, protected cropping is defined as all cropping systems under a form of weather protection much like the definition used by the PCA. This includes the use of hail netting, shade cloth, poly greenhouses and glasshouses. Outdoor hydroponic infrastructure has also been included, given the significant volume of lettuce production which uses this technique. Since the approval process in New South Wales is primarily based on the approval of structures rather than intensive plant agricultural enterprises, the definition does not include windbreaks, mulches and synthetic groundcovers.

Technology in the sector is changing and there is an increase in high-tech, large developments by Australian and international corporations. Demand for protected cropping produce is increasing because of the improved quality control and improved ability to maintain consistent supply to markets. Due to this increased interest in developing protected cropping systems, the Department of Primary Industries commissioned a project to review the current status of the industry and its relationship with the planning and approval system within State and local government.

This review included undertaking a survey of recent protected cropping project proponents, council planning and assessment staff as well as industry participants. This was combined with the information obtained through a desktop review of planning legislation within New South Wales, other Australian States and internationally. An inspection of the Western Sydney University's Greenhouse Research Education Facility, which is a world class high tech glasshouse, was also undertaken in order to explore the nexus between the planning and approval process and industry practice.

The purpose of the project was to review the current status of the sector, determine to what extent the current planning and approvals regime may be influencing the establishment of new protected cropping ventures, identify potential opportunities to assist improvements in the planning and approval process for both proponents and local government; and if needed, to make recommendations on regulatory reform.

The project involved interviews with ten proponents of recent protected cropping developments regarding their experiences with(in) the planning and approval system. Most proponents interviewed had been in the protected cropping industry for a significant amount of time, an average of nearly 25 years, as experienced and established growers, with the exception of one proponent who had only been in the industry for 18 months.

2.0 Introduction

It was not possible to obtain a specific measure of the combined value of protected cropping in NSW as the data collected by the Australian Bureau of Statistics (ABS) and the statistics compiled by HIA do not distinguish between production via hydroponics or controlled environment horticulture and normal outdoor growing methods.

However, Hassall and Associates (2001) estimated that 20 per cent of vegetable production was hydroponic while Smith (2017) suggests that 20% by value of the national vegetable and flower crop is produced under some form of protected cropping.

The ABS (2017) does provide the value of production for some specific crop types in NSW (see **Table 1**) but as with the HIA (2017) statistics, the data does not show whether this production was undertaken using some form of protected cropping, so an estimate has been derived.

Table 1: Value of production for 2015/16

Category	Value (\$)
Gross value of undercover nursery production (1)	\$50,512,869
Gross value of undercover cut flower production (2)	\$47,671,927
Gross value of total vegetable production	\$419,918,982
20% Gross Value of total vegetable production (3)	\$83,983,786
Fruit crops grown under netting (4)	\$280,000,000
Estimated value of protected cropping (1 + 2 + 3 +4)	\$462,168,592

[Source: ABS 2017, Protected Cropping Association- Smith 2017 and HIA 2017)]

Note: There is some disparity between the ABS data and the data provided by Protected Cropping Association - Smith (2017) with respect to the value of flower and vegetable production.

From a global perspective, Australia's protected cropping industry is small, especially given the large area of low technology protected agriculture in many Asian countries as well as countries such as Spain (Jensen *et al.*, 1995). However, given the relative high level of technology and intensity where it does exist, from an efficiency perspective Australia used to be ranked in the top ten for commercial hydroponic production worldwide (Hassall and Associates, 2001) although the average Australian greenhouse operation's productivity is still 40% behind that of international best practice (DPI 2005).

The Australian protected cropping industry is dominated by lettuce growing, along with large quantities of tomatoes, cucumbers, capsicums and eggplants as well as an increasing berry and herb production. NSW is currently the largest importer of fresh fruit and vegetables of any state or Territory, at \$314.4 million. NSW exports \$197 million of fresh product, which represents only 9% of the total national export of fresh fruit and vegetables (HIA 2017).

A significant amount of cut flower production is also imported into NSW, totalling \$29.6 million in 2016 (Australian Bureau of Statistics, 2017). While these figures do not differentiate between product grown inside or outside of some form of protection, they do show that NSW is a net importer of fresh fruit and vegetables, so there is significant scope to increase production to reduce this deficit.

Technology in protected cropping varies and is broadly divided into three categories. Low technology consists of poly tunnels, which are open at each end, without any automation or control and are up to two metres tall.

Medium technology consists of enclosed poly houses for which the sides can be opened and closed, allowing some degree of control of the inside temperature and humidity. Poly houses are usually constructed of a galvanised steel frame with either a single or double layer of polyethylene and are up to 4.5 metres in height.

High technology protected cropping consists of constructed glasshouses which are up to 8.5m high with significant automation of vents, fans, heaters and shade to optimise growing conditions. They have hydroponic systems that are computer controlled and automated. Sowing, crop management and picking are also partially or fully automated.

Economies of scale are required for high tech automated glasshouses, with a minimum profitable size of around 2ha (Badgery-Parker, 2001), with the convection of air currents within the larger sized structures also improving the feasibility for climate control. For example, Costa Farms has 20 ha of tomatoes under full production at Guyra with another 20ha being developed. Nectar Farms has submitted a development application for 40ha of glasshouses and Maria's Farms have a 40ha tomato glasshouse site at Port Stephens, the development of which has stalled mid-way through. Large projects such as these have the potential to significantly increase total protected cropping production in NSW as well as the industries that support it.

3.0 Survey results

3.1 Protected cropping proponents

Developments put forward by proponents were all substantial in size and cost. The smallest was 2,200m² and the largest 15ha in size. The developments are summarised below in **Table 2**.

Table 2: Summary of developments

Description of development	Size	LGA
Propagation facility for 1.5 million plants	6,144m ²	Central Coast
Greenhouse with packing shed, admin, amenity block in building small shed	1ha greenhouse 600m ² packing shed	Lismore
Glasshouse, demolition of coolhouse and upgrade packing facility	2,200m ² glasshouse	Liverpool
Greenhouse, cold shed and packing shed	16ha greenhouse 1.2ha packing shed	Port Stephens
Glasshouse, nursery and potting shed	2.5ha Glasshouse	Camden
Greenhouse and staff living area, rural workers dwelling comprising 22 rooms for 44 workers	2x2.5ha greenhouse 3,000m ² staff facility	Central Coast
Greenhouse and packing shed	7,500m ²	The Hills
Extension of growing pad with hail netting	3,000m ²	Central Coast

Glasshouse and packing facilities	12,000m ² glasshouse	Griffith
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*LGA (Local Government Area)

The distance from the developments listed in **Table 2**, to the nearest neighbour's dwelling ranged from 25m to over 500m. All proponents used a planning consultant to assist in producing the DA and in liaising with council. With one exception, the proponents felt that the work conducted by the planning consultants was of adequate standard. All proponents found the planning officers within council to be helpful with an overarching theme being that planning officers had limited knowledge about the protected cropping industry and therefore, were not in a position to provide significant additional assistance.

Preparation of the DA took between ten weeks and two years, and the length of time was closely related to the size and complexity of the project. The length of time an application took from the date it was lodged until the date of approval was between six weeks and twelve months. An outlier was one development that took four years as a result of a lengthy legal battle.

All but two of the proponents consulted the neighbours before submitting the development application. Three of the developments received objections. Neither of the developments where proponents did not consult the neighbours, received any objections.

Another overarching theme was the potential for improvements to the NCC. Under the NCC (Australian Building Codes Board, 2016) glasshouses and greenhouses are classified as either warehouses (Class 7b: for storage, or display of goods or produce for sale by wholesale), factories (Class 8: a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain). As a result those surveyed argue that the building classification for structures is inappropriate because of onerous rules for fire, access and egress, services and equipment, and health and amenity.

The only other common issue was water quality management, where proponents thought that providing systems for maintaining and managing water quality were burdensome given its intended use.

3.2 Council Planning and Assessment

Local government DA assessors tended to have substantial experience in assessing DAs but not a lot of experience in agricultural applications. Staff were asked about the qualifications that they and their colleagues had. All planners had university degrees, with most having formal planning qualifications and some had other qualifications such as environmental degrees. No planner recalled any detailed rural planning training during their time at university.

All staff identified the NSW DPI website as a primary source of information for obtaining information on agricultural developments although it wasn't regularly used due to the small number of agricultural type DAs.

In terms of the DA assessment process, two characteristics stood out. Protected cropping or other intensive agricultural developments were relatively uncommon and councils rarely regarded the agricultural aspects of the project as important.

Adherence to building codes and engineering standards was the prime focus of the assessment process with support structures for netting also gaining attention by assessment staff.

Some councils were considering introducing a requirement for an engineering certificate for netting structures as in some LGAs, rapid growth of the berry industry and resulting increase in hail netting has caused an increase in land-use conflict.

Few councils interviewed contained anything specific in their Development Control Plans dealing with protected cropping. Coffs Harbour City Council was one of the exceptions although the staff interviewed did not raise it and likely were unaware of the provision in the DCP for ancillary developments “*comprising large sheds, greenhouses, solar panels and associated solar tracking devices and other structures are to be designed, located and landscaped to reduce amenity impacts on adjoining land*”, as in practice, there has been little use of this provision.

Staff were generally pleased with the quality of the documentation as this was rated as a very important element in ensuring that the application was approved. Providing all of the information requested in an application is likely to get it approved more quickly. Basic mistakes in DAs included not labelling street names or not putting a north direction arrow on maps. Simple mistakes like this would mean that the application is returned and this would result in delays to the application being approved. One assessment officer provided an example of 12 DAs out of a current 20 being sent back with a request for more information, with nine of these being submitted by the one consultant. It proved difficult to obtain further information on specific DAs as the staff involved in the assessment of these projects at the time had moved on to other positions.

3.3 NSW Department of Primary Industries Land Use Planning Staff

DPI land use planning staff were aware that developments had taken place in their district but in most cases, these had not been referred to DPI by council, for assessment or comment. Two of the staff had dealt with protected cropping developments as part of their work and only one had dealt with a land use conflict involving protected cropping.

Staff were also aware of the relevant DPI guidelines to obtain information about protected cropping, although there was a concern that horticulture Development Officers would no longer be able to provide them with technical information and advice given other work commitments.

All staff thought that protected cropping would become more commonplace in the future and they considered the following issues as important when planning for and assessing a protected cropping development:

- Siting of the development in relation to the landscape, site selection
- Distance from incompatible land uses
- Shading and the use of buffer zones
- Water management – waste water, recycling, environmental impacts, security of water supply, disease transfer through water, runoff and erosion
- Effluent management
- Disease management, notifiable diseases and biosecurity
- Land use conflict
- Value of the project in terms of justifying its development.
- Understanding the types of activities being undertaken. For example, truck movements (at what time of day), colour of materials, waste (especially plastic waste)
- Knowledge of planning requirements in each council
- Local knowledge of other land uses
- Essential GIS information and layers
- Access to energy sources (gas, electricity)

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- Best practice

Staff also considered the land use conflict issues that can emerge within the context of protected cropping. Some of these include:

- Water access
- Setbacks to boundary
- Visual, Light/reflectivity, scenic amenity
- Ripped plastic flapping and plastic waste
- Chemical worries
- Vehicle movements

A relevant observation was that objections during the construction phase of intensive indoor plant agriculture was more common despite the fact that ongoing impacts e.g. noise, dust, spray drift etc, are worse for a typical outdoor horticulture production system. Land use conflict issues with respect to protected cropping were seen to be similar to other intensive agriculture sectors and as such there was no need to treat protected cropping any differently from a land use conflict perspective.

On the matter of the perceived level of support by councils for protected cropping, the general consensus was that councils generally claim to be pro-development and therefore would support most sectors that contributed to employment and development. However, due to the potential for, or perception of conflict between urban and rural residential uses and protected cropping, councils may not be as supportive of protected cropping as first thought.

Depending on the scale of the development and the wording of each council's LEP, protected cropping may or may not require consent as the Standard Instrument Local Environmental Plan provides councils with the option to choose. Many councils, particularly in primarily rural areas allow intensive plant agriculture without consent on rural zoned land, although a DA would be required if the structure is of a size that requires one. This is because the State Environment Planning (Exempt and Complying Development Codes) 2008 subdivision 16, provides an exemption for farm buildings under certain circumstances such as being under 200 square meters in size and less than 7m high. It is therefore theoretically possible for a land owner to erect multiple protected cropping structures without submitting a DA. However, the size limits imposed by the Code means that there would be minimal interest in doing this for most serious protected cropping proponents such as those outlined in **Table 2**.

The review also revealed that councils with other priorities such as tourism, tend to find agricultural development more contentious. Some councils have policies and DCPs that could discourage the development of protected cropping, particularly in peri-urban areas. For example, Camden Council has a policy that consent for greenhouses is only maintained for five years with height limits being less than four metres. The reason claimed for this is because of problems with poly greenhouses and tunnels that deteriorate in the sun and when left without repair, become a visual eyesore and a noise annoyance when they flap in the wind. Wollondilly Council also has a four metre height restriction on greenhouses. All councils sampled have restrictions based on land zoning.

The land use planning staff recommended that:

- Councils and industry involve the relevant DPI staff in the planning process and at an early stage preferably prior to site selection so that suitable locations can be identified.

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- Better information is developed for councils especially the smaller regional councils who lack skills and experience in intensive agriculture. This should include information about: the economic and employment benefits of protected cropping, description of the types of crops typically grown and how they are managed, typical land use conflict issues, the differences between low, medium and high technology protected cropping, shading issues, the role that buffers can play, and infrastructure requirements such as packing sheds, cool rooms, offices, transport access and workers accommodation.
 - Where technology is changing rapidly, this could be offset by referring developments (particularly large and complex developments) to better resourced and well informed Joint Regional Planning Panels.
 - DPI should work with DPE to promote consistency between councils in their approach to protected cropping developments. There may need to be recognition that peri-urban and rural areas are treated differently.
 - Current guidelines for proponents are dated and given the improvements in greenhouse technology and changes in development assessment processes, they may need to be updated.
 - DPI to liaise with the Department of Industry Land & Water Division to determine whether better information about irrigation availability and administration is required as some proponents are buying irrigation licences believing that this will provide them with reliable, year round access to irrigation water which is not necessarily the case.

3.4 Protected Cropping Industry Participants

Protected cropping industry participants were unanimous in their opinion that protected cropping in NSW will become more important and this opinion was underpinned by their possessing a sound knowledge of the Australian and international protected cropping sector. There is a world-wide and Australia-wide trend towards the expansion of the protected cropping sector and there is no reason for the NSW industry to be any different.

Respondents identified it as the fastest growing horticulture sector. For some large industry representatives, protected cropping formed part of their risk management strategy whereby good quality and high yielding product guaranteed their supply chain. As an example, Costa's business plan is to have 100 per cent of their product eventually growing under protection. Even outdoor intensive horticulture proponents were adding more protected cropping structures, particularly for raising seedlings.

The trend towards high tech protected cropping systems is no more evident than the recently completed \$200 million Sundrop Farms, concentrated solar power (CSP) tower plant, greenhouse facility at Port Augusta. Built using the latest Danish technology, it produces all its own power and water and will have a 10 year contract with Coles to supply tomatoes.

There were also a range of trends identified by the industry participants as potentially requiring action by government and or the industry themselves, including the following:

- Notwithstanding the latest CSP technology used at the Port Augusta development, the fact remains that energy price rises are becoming an increasing issue that may have a significant impact on the expansion of protected cropping, particularly the high tech sector, at least over the short-term. Current rising costs were not the only energy issue. The availability of energy, energy infrastructure and the potential for regional energy hubs were also considered to be issues that government needed to address.

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- Water availability was also identified as a potential impediment to increased protected cropping. Although water use is 40 per cent less per unit of produce when compared with outdoor horticulture, high tech protected cropping utilising hydroponics can use 2½ to 3 times more water per hectare than typical outdoor irrigated horticulture. This can be a problem in areas where water is limited if expansions by the larger corporate holdings are planned.
 - The increase in free trade agreements is providing opportunities for exports, particularly berries to China.
 - Enterprises growing berries on substrate is continuing to increase rapidly. Although demand for export berries is increasing as access arrangements are worked through, the domestic market has also increased rapidly in recent years. It was stated that berries are now Woolworths biggest produce category, ahead of bananas and carrots, although the report authors were not able to validate this claim.
 - Height of greenhouses can also be problematic. A number of peri-urban local governments restrict the height of greenhouses to a maximum of four metres. Modern high tech greenhouses can be more than six metres high, constraining the areas available for expansion.
 - Where the concentration of protected cropping enterprises is increasing, so too are land use conflict issues. For example, on the NSW north coast, complaints about horticulture such as spray drift, soil erosion and cultivation of steep hillsides, visual impacts of hail netting and the perceived illegal accessing of water resources is threatening the social licence of the industry. This may result in increased opposition to any new protected cropping proposal.
 - One respondent also noted that it wasn't just the large, high tech protected cropping that was increasing. There was also an increase in the lower tech poly greenhouses and tunnel house sector.

The respondents did not identify any serious inadequacies with the planning and approval process. As protected cropping technology improves, developments become increasingly complex. As identified earlier, there was a general consensus that council planners did not understand protected cropping (particularly the larger, more complex projects) and this occasionally caused delays and extra expense. For example, one proponent submitted a development application detailing a water recycling system and this was rejected because the assessor thought it was for recycling sewage due to confusion over terminology.

The issues with the NCC were regarded as being addressed through the HIA project reviewing the NCC with a view to ensuring that protected cropping structures are dealt with appropriately.

In terms of how the NSW planning process compares to other states or overseas, one of the ten respondents considered that planning processes in NSW were relatively unfriendly to the sector. They advised that the large corporate entities are able to identify production sites anywhere in the world so there is a concern that potential overseas investors could easily walk away if the planning process was made too difficult. The lack of coordination between the three layers of government was also seen as a problem by this respondent.

The type of information or services that could be supplied to proponents was also raised by some respondents. The larger more complex projects could be better facilitated if there was a DPI staff member tasked to provide advice about the steps involved in the approval process at a state and local level.

If projects were large enough to need to be assessed by a Regional Panels, the presence of a dedicated resource would be beneficial. The sort of information that proponents would find useful includes:

- mapping potential areas suitable for protected cropping,
- the location of essential energy, water, packing, staff accommodation and transport facilities
- Communication of the results of HIA project on revising the NCC.

Other information that industry respondents considered would be of use to councils is the provision of clear terminology and definitions relating to agriculture generally as well as protected cropping specifically. Explaining the differences between high tech, mid tech and low tech protected cropping enterprises is also needed. Moreover, councils also need to understand the impact on, not just of, protected cropping by adjacent developments including issues such as why shading of a protected cropping enterprise needs to be eliminated and the role that buffer zones can play in this regard.

The following suggestions were made by industry respondents with respect to possible improvements to the way in which local government approaches protected cropping approvals:

- Identify and promote the benefits of protected cropping such as environmental containment, low noise and smell.
- Promote the findings of the Protected Cropping NCC and Greenhouse Construction Project VG 13055.
- A short guide to protected cropping in the planning context for council planners.
- A training workshop (around half a day) organised by DPI for planning and assessment staff in councils in their region.
- Review how the protected cropping sector is being impacted by residential and dwelling growth in both peri-urban and rural landscapes.
- DPI to engage with DPE to update the existing 2005 Guidelines for the Development of Controlled Environment Horticulture (1 & 2) and preparation of a policy to facilitate growth in the sector.

4.0 NSW Planning & Assessment Processes for Protected Cropping

Planning processes in NSW encompass both legislation and policies. State significant developments have a capital investment value of more than \$30million and have to be for specific purposes.

Commonwealth legislation that can impact on the planning and approval process is mainly concerned with the conservation of nationally significant environmental and heritage values. Unless a development is State significant Commonwealth legislation is generally not relevant when proposing a new protected cropping development. In cases where it is required, the State planning approval will refer to the *Australian Heritage Council Act 2003* (Australian Government, 2012) and or the *Environment Protection and Biodiversity Conservation Act 1999* (Australian Government, 2016).

The *Environmental Planning and Assessment Act 1979* (EP&A Act) provides a framework to regulate land use in NSW.

The primary planning instruments within the Act are State Environmental Planning Policies (SEPPs) covering State issues and overarching coordination and approval processes for Local Environmental Plans (LEPs) and local government approved Development Control Plans (DCPs). The Standard Instrument Local Environmental Plan provides councils in NSW with a degree of uniformity in terms of how planning and assessment is structured.

The two main SEPPs related to protected cropping approvals have been the State Environmental Planning Policy (Rural Lands) 2008 (Rural Lands SEPP) and the Exempt and Complying Development Codes 2008.

However, these two SEPPs, plus some of the provisions of other SEPPs, will be incorporated into a new Primary Production and Rural Development SEPP that is currently being prepared by the Department of Planning and Environment (DPE). The Explanation of Intended Effect (EIE) has recently been released for public comment. The current status of this proposed SEPP is available at:

<http://www.planning.nsw.gov.au/Policy-and-Legislation/State-Environmental-Planning-Policies-Review/Draft-Primary-Production-SEPP>

The EIE outlines provisions to be included in a new SEPP. It also highlights proposals to transfer and update existing plan making requirements to the Ministerial Planning Directions under section 117 of the *Environmental Planning and Assessment Act 1979*, and to amend the Standard Instrument Local Environmental Plan.

In early 2016 a review of State Environment Planning Policy (Exempt and Complying Development Codes) 2008 in relation to planning and approval processes for locations west of the Great Dividing Range was also announced by DPE. Some of the issues flagged for review are also relevant to protected cropping. It is recommended that proponents obtain the most recent advice given these matters are still being considered by the Government.

At the local level, Local Environmental Plans and Development Control Plans are developed to fit within the NSW Framework under the EP&A Act 1979. While there is the Standard Instrument LEP which requires a certain level of uniformity and compliance across all Local Government Areas, the content of each LEP or DCP can vary significantly.

The Agriculture Industry Action Plan (NSW Department of Primary Industries, 2014) is one of a series of Industry Action Plans which have a standing action to improve the planning process under the principle of “making it easier to do business”, this also being one of five key principles under the NSW Economic Development Framework (NSW Government, 2014).

While there are some other SEPPs that are of minor relevance to protected cropping, it is local government as the principle consent authority, that has the greatest influence on the progress of new protected cropping developments. LEPs specify zoning, identifying which locations can be used for the various forms of agriculture. No LEPs or DCPs specify protected cropping specifically, although all refer to intensive plant or animal agriculture as well as extensive agriculture.

Some DCPs make a specific reference to greenhouses such as Coffs Harbour City Council discussed earlier while the Liverpool Development Control Plan (Liverpool Council, 2015) requires all greenhouses to be a maximum four metres in height and to be set back at least 100m from dwellings on any neighbouring land.

Other policies in NSW relating to agriculture include the Right to Farm Policy (NSW Department of Primary Industries, 2015) and the Policy for Maintaining Land for Agricultural Industries (NSW

Department of Primary Industries, 2011). These provide high level principles and guidance on preventing or managing land use conflict rather than directing development assessment particularly for new proposals

5.0 Conclusions and Recommendations

In summary, the results of this review have shown that there are no significant elements within the NSW planning and approvals process that are impeding the growth of the protected cropping sector, although the speed at which approvals are completed, could be improved.

There were no significant institutional or regulatory issues that were shown to have a demonstrable impact on new protected cropping developments being approved, with the possible exception of the way greenhouses and tunnels are defined within the NCC and therefore, local government's approach to their assessment.

Most planning instruments that are relevant to protected cropping developments e.g. the various SEPPs, LEPs etc, consider greenhouses and tunnels to be 'farm buildings'. When the HIA funded work to review the NCC is completed and an appropriate standard agreed upon (currently scheduled for 2019) all relevant DPI and DPE documents and weblinks will need to be updated so that when local government assesses protected cropping developments, it can use the new classifications for horticultural buildings.

There was general agreement among industry participants that speed at which assessment and approvals are undertaken could be improved if council assessment staff had some understanding of the sector and its needs and limitations. By contrast, council assessment staff indicated that proponents need to ensure they were aware of the extent of the information council requires to undertake this process. The industry and their planning consultants should be making widespread use of Hort Innovation's Greenhousetoolbox.com, as this web based resource has an entire area dedicated to assisting proponents through the local government planning and approvals process.

The review also identified a range of ancillary issues that government and industry should be cognisant of and which is, or could, be an impediment to further expansion of the sector. The cost of power and its reliability, water availability, transport infrastructure, packing and storage facilities, labour supply and accommodation for seasonal workers, are all central to the sector being able to continue to grow and where both government and the industry can play a role.

As a result of this Review, the following 8 point plan and indicative timeframe, is intended to facilitate growth in the sector through optimising the use of existing resources and initiatives. Implementing these recommendations will also improve the way in which the protected cropping proponents and local government approval and planning personnel are able to approach these types of developments:

1. DPI to work with industry to improve the level of understanding by proponents of the information that usually is required by Councils when submitting a protected cropping Development Application (DA); **Ongoing**
2. DPI in consultation with DPE, industry and councils to update where necessary the 2011, 4 page Fact Sheet titled '*Preparing Intensive Plant Agriculture Development Applications*' and 2005 '*Guidelines for the Development of Controlled Environment Horticulture (1 & 2)*' ; **30 June 2018**
3. DPI to work with industry to develop information for councils which outline the economic and employment benefits of protected cropping as well as key inputs and management issues that can impact a protected cropping project's viability; **December 2018**

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4. DPI to promote the Western Sydney University Greenhouse Research Education Training Facility to Councils and industry as an example of best practice; **Ongoing**
 5. DPI to promote the HIA project on construction requirements (VG 13055) and ensure DPE and councils are aware of new greenhouse construction standards once accepted by the Building Council of Australia in 2019; **December 2019**
 6. DPI and industry bodies to promote 'Greenhousetoolbox.com' funded by Hort Innovation, which is a web based resource that provides growers with access to the latest information and advice on design, structure, operations management and local government approvals processes; **Ongoing**
 7. DPI to produce a reference list on the DPI webpage with links to major documents and web resources on protected cropping enabling planning information to be readily accessible by council staff, proponents and DPI staff. **30 June 2018**
 8. Industry, with the support of DPI, to work with DPE and local government to facilitate growth in the protected cropping sector by improving information about key inputs including electricity supply and cost, water, transportation links, packing and farm storage facilities, labour and workers accommodation; **Ongoing**

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Appendix 1 Survey Questions

1 Proponent Survey Questions

Development and Site Details

Can I just confirm the details of your proposal?

Development: Is this a new development or an expansion to an existing one?

Site Location: How long have you lived at the property?

How long have you been involved in the horticulture industry?

Site Area:

Proximity of Development to boundaries:

Distance to Nearest Dwelling not on your property:

Have you constructed your development?

How did you engage with your neighbours before the development?

Have you had any problems with neighbours making complaints? Before the development and after it?

If yes what were they?

Development Assessment

Did you engage a planning consultant to prepare the Development Application? Can you please tell me their name? How would you rate their work ?

If yes - did they give you any information about how the development might be improved to avoid land use conflict?

How long did it take to prepare the Development Application?

Did you have to undertake any environmental assessments as part of the DA – odour, noise, dust, ecological, water quality, etc?

Did you have any contact with the Council throughout the process?

Did you talk to the Council before preparing the DA?

Was the Council officer / s helpful?

Are you aware of the Development Assessment Guidelines prepared by DPI?

Do you think they are useful?

Council Determination

Were there any objections to the DA?

How did you record the objections?

What did they object about?

Was the DA approved under delegated authority or did it have to be reported to a Council meeting?

How long did the application take from the date it was lodged until the date of approval?

Other

What are your thoughts on the DA process

Where are potential improvements?

2. Council Officer Survey Questions

Knowledge of Rural Planning Issues

Where did you develop your understanding about agriculture and its impact?

Where do you get agricultural related information from?

Do you use DPI publications (guidelines etc.) for these (or any) DAs

How often do you use the DPI website

Are you aware of your local NSW DPI Agricultural Resource Management Officer?

Is there anything DPI could provide to assist you with assessing protected cropping developments?

What forms of social media does Council use?

Have you dealt with rural land use conflict involving protected cropping?

What sort of issues did you encounter?

Development Application

Does your Council have a section in your DCP (Development Control Plan) dealing with protected cropping agriculture? (I will already have looked at this but want to see if they are aware of the DCP provisions.)

In your job, have you assessed any Development Applications for protected cropping or horticulture developments?

Have you or another colleague - section (eg engineers) at your council assessed the DA for(I will ask about the specific DA that I interviewed the proponent for. I will also advise the officer that I have already talked to the applicant)

Did they have a pre-lodgement meeting?

Was all the information submitted initially or was additional information submitted after the initial lodgement? Rate the quality of the documentation fair, good, very good, excellent

Were there any objections to the DA?

Are you aware of the number?

What were the objections about?

Do you or Council think they were highly relevant, moderately relevant, not valid?

How many intensive plant agriculture DAs are reported to Council for determination?

Are these DAs approved as ongoing or have review periods nominated?

Based on your experience what 3 (or more) key recommendations for improving the planning process could be made to assist in the assessment and turnaround times of protected cropping developments.

Observations - Other information

How many of the planning staff have qualifications in in Town Planning (certificate, diploma, degree, Masters PhD)?

What College -university is yours from?

Did you have any subjects dealing with rural planning issues?

Age bracket of interviewee (25-35) (35-45) (45-55) (55plus) and how long have you been in town planning? (note -Male – female respondent?)

How often do planning staff turnover average rate? (e.g One p.a , two p.a, three plus)

What additional information could NSW DPI provide to support council in its decision making around protected cropping?

3. DPI Land Use Planning Staff Survey Questions

Knowledge of Rural Planning Issues

How would you rate your knowledge of protected cropping?

Where would you get information for protected cropping from?

Do you use DPI publications (guidelines etc.) for these (or any) DAs

Do you think protected cropping in your area is important or may become important?

What knowledge would you require to provide assistance with protected cropping developments?

Have you dealt with rural land use conflict involving protected cropping?

What sort of issues did you encounter?

Development Application

Do the councils in your area support protected cropping developments?

Are there any sections of the LEPs or any DCPs specifically associated with protected cropping?

Are you aware of any local legislation which could discourage the development of protected cropping in your area?

Are you aware of any State or Federal legislation which could discourage the development of protected cropping in your area?

In your job, have you assisted any Development Applications for protected cropping or horticulture developments?

Are you aware of any protected cropping developments in your area which have been submitted or approved?

Were there any objections to the DA?

Are you aware of the number?

What were the objections about?

Do you or think objections were highly relevant, moderately relevant, not valid?

Are you aware of any complaints about the DA process by the proponent?

If so, what were the complaints about?

Based on your experience what key recommendations for improving the planning process could be made to assist in the assessment and turnaround times of protected cropping developments.

Observations - Other information

What additional information could NSW DPI provide to support council in its decision making around protected cropping?

4. Protected Cropping Industry Participant Survey Questions

Protected Cropping trends

How long have you been involved in the protected cropping industry?

Do you think protected cropping in NSW will become more important? How/why?

Are there any trends in protected cropping which should be considered in the planning process?

Are you aware of any problems with the NSW Planning process for developing the protected cropping industry?

Do you know how the NSW planning process compares to other states or countries)?

Information and recommendations

What information could/should NSW DPI supply to support prospective applicants on protected cropping?

What additional information could NSW DPI provide to support council in its decision making around protected cropping?

Based on your experience, what key recommendations for improving the planning process could be made to assist in the assessment and turnaround times of protected cropping developments.

Is there anything else NSW DPI should be considering to support the planning process for the development of the protected cropping industry.

Appendix 2: Planning & Assessment Processes for Protected Cropping in other jurisdictions.

National

No states have specific legislation directed at protected cropping or intensive agriculture, but similar to NSW, use a range of the usual planning and approval processes to manage the impact on and of intensive agriculture, on the community. As such, this review has focussed on planning legislation, agricultural building codes as well as any right to farm policies or legislation.

Tasmania is the only state which has specific Right-to-Farm legislation with their *Primary Industry Activities Protection Act 1995* (Tasmanian Government 1995).

Western Australia did have the *Agricultural Practices (Disputes) Act 1995* which “ensured that any normal farm practice which is alleged to create a nuisance, or otherwise to be detrimental to the interests of persons nearby... shall not be impeded by avoidable litigation, or the threat of such litigation, arising out of an allegation of that kind”. However, this Act was repealed in 2011.

For many years Queensland had a proactive approach to protect agriculture. State Planning Policy 1/92 (Queensland Government, 1992) stated that “Planning powers should be used to protect agricultural land from developments that lead to its alienation or diminished productivity.” This policy required local government to give consideration to the protection of good quality agricultural land when assessing applications for subdivision, however this too was repealed.

Queensland also has a specific planning policy aimed at informing local authorities on how to minimise instances of incompatible uses adjacent to agricultural operations (Queensland Government 1997). In this policy, if buffer areas are needed, these should be constructed on developed residential land, not agricultural land. While they consider land use conflict associated with spray drift, odour, noise, dust/smoke/ash and sediment/stormwater runoff, there appears to be no consideration of visual amenity, a major source of conflict for protected agriculture in NSW.

Queensland also have a Farm Building Development Code (Queensland Government 2015) which allows for variations in the NCC of Australia such that issues such as access, egress and fire regulations are appropriate for the structures given use. If this was applied in NSW, this could significantly reduce the burden on smaller protected cropping developments.

Planning agricultural developments in Victoria operates under the framework of the *Planning and Environment Act 1987* (Victoria State Government 2012). Within this Act is a template document, the Victorian Planning Provisions (VPP) from which planning schemes are constructed (Victoria State Government, 2017). Within the VPP there are nine regionally specific planning policies under the State policy framework, with a local planning policy framework under this. There are 51 local rural planning schemes in Victoria, each containing specific maps and policies (Victorian State Government 2017).

The planning scheme provides consistency from the State to the local level. Rural land and planning zones designate what type of developments can be approved. The rural zones are: Farming Zone; Green Wedge Zone; Green Wedge A Zone; Rural Activity zone, Rural Conservation Zone and Rural Living Zone (Agriculture Victoria, 2017).

The farming zone prioritises agricultural activities and the rural Activity Zone has provisions for agriculture and other land uses to co-exist. Horticulture may be undertaken with consent in all

rural zones. Trellis, cloche, net and shade-cloth structures are specified as exempt building structures under the Victorian Planning Schemes Section 62.

4.3 International

United States

In the United States, right to farm legislation is a state issue and therefore each state is different. However, all states appear to have significant right to farm legislation. A right to farm generally is triggered if the land has been farmed for more than a certain period of time, usually one or three years.

- **Florida:** (a) No farm operation which has been in operation for 1 year or more since its established date of operation and which was not a nuisance at the time of its established date of operation shall be a public or private nuisance if the farm operation conforms to generally accepted agricultural and management practices, (b) No farm operation shall become a public or private nuisance as a result of a change in ownership, a change in the type of farm product being produced, a change in conditions in or around the locality of the farm, or a change brought about to comply with Best Management Practices adopted by local, state, or federal agencies if such farm has been in operation for 1 year or more since its established date of operation and if it was not a nuisance at the time of its established date of operation.
- **California:** No agricultural activity, operation, or facility, or appurtenances thereof, conducted or maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, private or public, due to any changed condition in or about the locality, after it has been in operation for more than three years if it was not a nuisance at the time it began.
- **Washington:** Notwithstanding any other provision of this chapter, agricultural activities conducted on farmland and forest practices, if consistent with good agricultural and forest practices and established prior to surrounding non-agricultural and non-forestry activities, are presumed to be reasonable and shall not be found to constitute a nuisance unless the activity or practice has a substantial adverse effect on public health and safety
- **Nevada:** That an agricultural activity conducted on farmland, consistent with good agricultural practice and established before surrounding non-agricultural activities is reasonable. Such activity does not constitute a nuisance unless the activity has a substantial adverse effect on the public health or safety.

Farm buildings are usually overseen by the county regulations. Often these exempt most agricultural buildings and structures from planning permits. For example, Grayson County exempts all buildings for horticultural and floricultural products:

“Farm buildings and structures may be exempt from the Virginia Uniform Statewide Building Code (USBC). In order to qualify for this exemption, the structure must be a specific purpose which is directly related to an operating farm. Farm building or structure definition: A building or structure not used for residential purposes, located on property where farming operations take place, and used primarily for any of the following uses or combination thereof: 1. Storage, handling, production, display, sampling or sale of agricultural, horticultural, floricultural or silvicultural products produced on the farm...” (Grayson County Building Department, 2017).

European Union

Legislation within the European Union is complex, with policies and legislation of the 28 Member States being strongly influenced by the Common Agricultural Policy (CAP). Within the CAP, rural development is an integrated policy. However, rather than encouraging agriculture, the rural development policy tends to do the opposite, with structural and territorial measures for Least Favoured Areas (LFAs) of rural development (European Commission, 2011).

The rural development policy is supported through a €100 billion European Agricultural Fund for Rural Development (EAFRD) from 2014 to 2020 and leveraging a further €61 billion of funding from the Member States. The policy has broad ranging priorities including improving competitiveness, improving risk management, restoring ecosystems and promoting resource efficiency including a shift to a low-carbon and climate-resilient economy.

The rural development priorities are broken down into 'focus areas' against which member states set targets. At least 30% of funding for each policy must be devoted to measures relevant to the environment and climate change. Each Member State establishes a partnership agreement which aligns the EU priorities with the country's circumstances. Individual technologies aside, the current EU approach to the planning, funding and management of agriculture is very different from the approach taken in Australia. As such, it appears that the relevance to building additional protected cropping capacity in NSW is minimal.

The Netherlands has the most technologically advanced horticulture industry in the world, so it is pertinent to consider the type of protected cropping systems used there. Their horticulture target for energy use by 2020 is to use 57% less than in 1990. Currently they are using 56% less but this is in some part due to a decline in the greenhouse horticulture sector overall. In 2013, the sector declined in absolute terms by 7.5% (Berkhout, 2015) however it is still the most efficient in the world in terms of production per unit area at 142,354 Tonnes of fresh produce per square mile and up to 80% of all cultivated land being under glass (Viviano 2017).

The Netherlands also has a spatial planning policy, concentrating the sector in certain areas, offering space for the development of sustainable, future-oriented greenhouse horticulture and planning for clearing outdated horticultural centres (Breukers et al 2008). Agricultural land usage rights are acquired by a specific agricultural lease. Establishing the lease requires approval of the lease contract by the Agricultural Tenancies Authority. Agricultural leases are for a definite period of time, being 12 years for farms and homesteads and six years for separate land or buildings (Holthuis and van der Velden, 2015). This provides a strong degree of control on how agriculture is developed, however it too is very different from the typical agricultural land tenure arrangements in Australia.

