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## NSW Parliamentary Research Service

**Hemp as fibre and food? Regulatory  
developments and current issues**

**Briefing Paper No 03/2016**  
by Daniel Montoya

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# Hemp as fibre and food? Regulatory developments and current issues

**by**

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## SUMMARY

Cannabis comes in over 2,000 varieties. Depending on their characteristics, these may be used for medical purposes (**medical cannabis**), as a recreational drug (**marijuana**), or as a source of fibre and food products (**industrial hemp** or **low THC hemp**). A key differentiating factor is the presence, or otherwise, of the psychoactive compound THC (Delta-9-Tetrahydrocannabinol). Marijuana contains up to 15%, medical cannabis may contain THC, and industrial hemp generally has no THC but may have up to 1%. This paper focuses on industrial hemp, its characteristics, uses, regulation and the industry in NSW, Australia and across the world.

### History, characteristics and uses

Cannabis is one of the oldest cultivated crops, having first been grown in central and east Asia as early as 10,000 BC before spreading across the globe, including to Australia in the 1800s. It has always been cultivated for a variety of reasons, including for its fibre, food, medicinal value and use as a recreational drug. Attitudes to cannabis began to change from the 1900s onwards, with many countries, led by the US, prohibiting cannabis due to its use as a recreational drug. Over the past few decades, moves in these countries towards decriminalisation of cannabis have occurred at the same time as increased recognition of the medicinal and industrial uses of cannabis. **[2.2]**

Cannabis is a fast growing, annual herbaceous plant that can reach a height of 5 metres. 9 markets exist for the industrial products which may be made from the stem, which is made up of two types of fibre (bast and hurds), the leaves and seeds:

- Agriculture;
- Textiles;
- Recycling;
- Automotive;
- Furniture;
- Food/nutrition/beverages;
- Paper;
- Construction materials; and
- Personal care. **[2.3]**

Hemp is a low environmental impact crop, both in terms of its cultivation and the types of products which may be made. **[2.4]**

### History of cannabis regulation

Prior to the early 20<sup>th</sup> century, cannabis was legally grown for industrial and medical purposes across the world. In 1913, California introduced the first of a wave of US legislation that regulated cannabis, prohibiting distribution of

cannabis for recreational purposes. Many countries including Australia followed the US in criminalising cannabis, making no distinction between those cannabis varieties used for industrial purposes and those used as a recreational drug. Although decriminalisation began in the late 1960s in some parts of the world, it was not until the early 1990s that a legal distinction between industrial hemp and marijuana was first introduced in Australia. As of May 2016, industrial hemp may be commercially grown in all States and Territories except for the Northern Territory and South Australia. In 2016, the legalisation of cannabis consumption for medical purposes commenced in Australia. [3.1]

The early 20<sup>th</sup> century hemp industry in NSW, about which little is known, ended with the listing of cannabis as a prohibited substance in 1935 and classification of cannabis as a noxious plant in 1938. On 1 June 1995, Tony Windsor, the Member for Tamworth, introduced the Industrial Hemp Production (Experimental Development) Bill 1995. Although it did not progress past the Second Reading stage, the Carr Government did approve the first industrial hemp trials in NSW later in 1995. A 2007 Legislative Council inquiry into aspects of agriculture in NSW recommended legislative reform to permit commercialisation of industrial hemp. In response, in 2008 the Lemna Government passed the [Hemp Industry Act 2008](#). [3.2]

### **NSW industrial hemp regulatory regime**

The *Hemp Industry Act 2008* sets two limits on the level of THC permissible in **low THC hemp**: a cannabis plant may have a concentration of THC in its leaves and flowering heads of no more than 1%, and this includes the seed of any such plant and any product (such as oil or fibre) derived from any such plant. Cannabis seed may only be used to grow low THC hemp if supplied on the basis that it will not produce hemp that has a concentration of THC (in its leaves and flowering heads) of more than 0.5%.

A licence may be granted for the cultivation and supply of low THC hemp for any of 3 purposes: commercial production; use in any manufacturing process; or scientific research, instruction, analysis or study. The maximum penalty for breach of licence is \$11,000 and/or imprisonment for 2 years.

A key concern of the Lemna Government was the design of a regulatory framework that ensured that drug law enforcement in NSW would not be compromised. The Act therefore established a rigorous licence application process, under which an applicant and any of their close business associates must be found to be of good repute and character, and must not have been found guilty of a serious drug-related offence at any time in the past.

Cannabis is currently prohibited from being added to food or sold as food under the [Food Standards Code](#), which is applied in NSW by the [Food Act 2003](#). [4.1]

### **Review of the NSW regulatory regime**

In May 2016, a [review](#) of the *Hemp Industry Act 2008* was released. The review made no recommendations for reform, but noted that legislative amendments may be necessary in future if approval is given for the use of low THC hemp as a food. [4.1.1]



## Comparison of Australian industrial hemp regulatory regimes

Commercial cultivation of industrial hemp is legal in 6 jurisdictions: the ACT, NSW, Queensland, Tasmania, Western Australia and Victoria. All 6 jurisdictions permit the cultivation, possession and supply of industrial hemp for commercial purposes. Five (ACT, NSW, Queensland, Tasmania and Victoria) permit the cultivation, possession and/or supply of industrial hemp for research purposes. In NSW and Tasmania, licences may be granted for up to 5 years; the remaining jurisdictions have a 3 year upper limit.

The main difference between regimes when defining industrial hemp is the amount of THC permitted. Victoria and Western Australia set an upper limit of 0.35% in the leaves and flowering heads. The ACT, NSW, Queensland and Tasmania set two limits: leaves and flowering heads of a plant must have less than 1%; and hemp seed may only be used if supplied on the basis that it will not produce hemp plants with a concentration of THC in its leaves and flowering heads of more than 0.5%.

A key difference between regimes concerns the conditions which **must** or **may** be satisfied prior to a licence being granted. The number and types of conditions vary between regimes; Tasmania, the newest regime, is the least onerous.

With regards to the criminal record of an applicant, and in some cases their close associates, at one end of the spectrum Tasmania does not prohibit possession of a licence by a person found guilty of a drug-related offence or another relevant offence. Rather, the Secretary may refuse to grant a licence. At the other end of the spectrum, NSW prohibits granting a licence to a person who has either been found guilty of a drug-related offence at any point in time or who has a close associate who has been found guilty of a drug-related offence at any point in time.

The other condition common to every regime is that the applicant, and in some cases their close associates, is a suitable person and/or person of good repute. **[4.2]**

### Recent developments in Tasmania

In response to a 2013 parliamentary inquiry into industrial hemp and a Government review in 2014, the Tasmanian Government introduced a new regulatory regime in 2015. Key regulatory changes include changing the concentration of THC permissible in the plant and leaf material from 0.35% to 1%, extending the licence period from 1 to 5 years, and doubling the maximum financial penalty for breach of licence from \$7,700 to \$15,400. **[4.3]**

### Northern Territory and South Australia

Commercial production of industrial hemp is prohibited in the Northern Territory and South Australia. In April 2016, the Northern Territory Department of Primary Industry planted the first trial crop of industrial hemp in the NT. **[4.4]**

## **Commonwealth legislation and the bi-national food regulation system**

Australia is party to three international treaties that concern, in part, the control of cannabis drug use. There are also a number of Commonwealth statutes which impact the cultivation, production and use of cannabis and cannabis products including the *Therapeutic Goods Act 1989*, the *Narcotic Drugs Act 1967* and the *Customs Act 1901*. On 29 February 2016, the *Narcotic Drugs Act 1967* was amended to introduce a licensing scheme for the cultivation of cannabis for medicinal and related scientific purposes.

The food regulation system is a bi-national arrangement involving the Commonwealth, State and Territory Governments and the New Zealand Government. As part of the system, the Australia and New Zealand Ministerial Forum on Food Regulation is responsible for policy development and Food Standards Australia New Zealand (FSANZ) is responsible for food standards. Under the Food Standards Code, cannabis is prohibited from being added to food or sold as food. **[4.5]**

### **Applications to make hemp food legal in Australia**

Two applications have been submitted to FSANZ requesting amendment of the Food Standards Code to permit use of low THC hemp as a food. The first was lodged in 1998. In 2002, FSANZ (then known as ANZFA) consequently recommended amendment of the Code to permit use of low THC hemp as a food; however, the Ministerial Council retained the prohibition, believing that the use of hemp in food may send a confused message to consumers about the acceptability and safety of cannabis.

A second application was lodged in 2009. In 2012, FSANZ recommended adoption of an amendment to the Code permitting use of low THC hemp as a food; however, the Ministerial Forum sought a review of the decision. In December 2014, FSANZ again recommended adoption of an amendment to the Code. This was rejected by the Forum due to concerns about the impact on roadside and other drug testing, the marketing of hemp food, legal and treaty issues, and the cannabinoids found in cannabis.

These four issues are each the subject of a Government-led project, the findings of which will be considered by the Forum later in 2016. The Forum has also tasked FSANZ with developing a draft proposal on how low THC hemp could be legally designated as a food. It is anticipated that a decision will be made by 2017 on whether or not to approve low THC hemp as a food. **[5.1]**

### **The science of hemp as a food**

Low THC hemp seed is a nutritious food containing significant amounts of protein, polyunsaturated fats and dietary fibre, together with a variety of micronutrients. Hempseed oil contains the second highest amount of omega-3 fatty acids of all commonly available plant-based oils. **[5.2.1]**

FSANZ conducted a dietary exposure assessment to ensure that the proposed maximum permitted levels of THC within foods containing low THC hemp would not lead to dietary exposures greater than the tolerable daily intake (TDI). It

found that it is likely that no consumers in Australia or New Zealand, of different populations, would be at risk of exceeding the TDI. **[5.2.2]**

### **The hemp industry in NSW and Australia**

The first hemp trials in Australia took place in 1991 in Tasmania; NSW conducted its first trials in 1995-96. Since the legalisation of commercial production in NSW in 2008, the hemp industry has grown relatively slowly. As of May 2016, there were 30 industrial hemp licences and 19 active growers in NSW, most of whom were located in the Richmond-Tweed and Hunter regions. 238 ha were planted in the 2015-16 season, down from 388 ha in 2014-15. In comparison, 6,300,000 ha of crops were planted in NSW in 2014-15. In 2014, Hemp Foods Australia estimated that the industry was responsible for \$13 million in trade, and that industry output had grown by 350% between 2012 and 2013. **[6.1]**

A 2012 FSANZ-commissioned report by ABARES investigated the potential impact of legalising human consumption of hemp seed. The report found that hemp seed would be an attractive alternative for NSW producers under optimistic price and yield assumptions. **[6.2]**

There is evidence to suggest that hemp seed production may be more feasible than hemp fibre production in NSW. A range of challenges to establishing a hemp fibre industry have been identified by stakeholders, including the significant costs involved in transporting hemp, the significant investment in infrastructure required, the absence of local markets for hemp fibre and the potential negative impacts of complex and costly licensing requirements. In contrast, hemp seed has lower infrastructure and transport costs and may have greater market potential, due in part to the presence of Australian manufacturing companies capable of processing hemp seed products. **[6.3]**

### **The hemp industry globally**

The US is the only country where commercial cultivation of industrial hemp is currently illegal. Consumption of hemp food products is legal in all countries except Australia and New Zealand, although New Zealand allows consumption of hemp oil. **[7.2]**

While international hemp production in 2013 (123,100 tonnes of fibre and seed) was well short of the record high reached in 1966 of 467,300 tonnes, it is generally trending upwards. In 2013, China was the leading producer of hemp fibre (16,000 tonnes) and France was the leading producer of hemp seed (48,264 tonnes).

In Europe in 2014, the market for whole hemp seeds and derived hemp food and feeds products was worth €45 million. Also in 2014, the US industrial hemp market was estimated to be worth at least US\$620 million. This includes food and body care products, clothing, auto parts and building materials. **[7.1]**



## 1. INTRODUCTION

There are over 2,000 different varieties of the cannabis plant, *Cannabis sativa* L. Depending on their characteristics, these may be used for medical purposes (**medical cannabis**), as a recreational drug (**marijuana**), or as a source of fibre and food products (**industrial hemp** or **low THC hemp**). One of the key differentiating factors is the presence, or otherwise, of the psychoactive compound THC. While marijuana contains up to 15% THC, and medical cannabis may or may not contain THC, industrial hemp generally has no THC but may have up to 1%.

Industrial hemp appears to have been grown in the Northern Rivers and Hunter regions of NSW up to the 1930s. At this point, because no differentiation was made between different varieties of cannabis, industrial hemp was banned together with marijuana when NSW listed cannabis as a prohibited drug and declared cannabis to be a noxious plant across all of NSW. Although trials were permitted from 1995 onwards and commercial production was legalised in 2008, in 2014-15 industrial hemp made up only 0.006% (388 hectares) of total summer and winter crops planted in NSW. In contrast, the industry is growing steadily overseas. For example, between 2011 and 2014 the US hemp market grew at an average annual rate of 11.1%, reaching US\$620 million in 2014.

A wide variety of products may be made from industrial hemp, including textiles, automotive parts, paper, building materials and food products from hemp seed. The slow take-up of industrial hemp by Australian producers has been attributed in part to the ban on human consumption of hemp seed in Australia and New Zealand. In December 2014, Food Standards Australia New Zealand (FSANZ) recommended amendment of the Food Standards Code to permit consumption of low-THC hemp seed as a food. However, the Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) rejected FSANZ's proposal, citing four information gaps. These gaps are currently being addressed through studies on: the impact of low THC hemp foods on roadside and other drug testing; the marketing and advertising of hemp food; legal and treaty issues; and the cannabinoids found in cannabis. As of the most recent meeting of the Forum in March 2016, these studies had not been completed. Members of the Forum agreed that each jurisdiction would audit their legislation prohibiting sale of low THC hemp as a food in the interim. The Forum also tasked FSANZ with developing a draft proposal on how low THC hemp could be legally designated as a food.

This paper does not discuss medical cannabis or marijuana in any depth, dealing only briefly with them at several points. It begins with a description of cannabis and the uses of industrial hemp, before considering the history of cannabis regulation and current Australian industrial hemp regulatory regimes. Developments in the debate on the legalisation of hemp as a food are covered before the paper finishes with a survey of the current state of the industry in NSW, Australia and globally.

## 2. CANNABIS VARIETIES AND USES

This chapter describes the cannabis plant, otherwise known as hemp, drawing distinctions between its use as **marijuana**, **medical cannabis** and **industrial hemp**. A brief history of industrial hemp is set out, separate to a longer history of cannabis regulation contained in Chapter 3, before the commercial uses of industrial hemp and its environmental benefits are outlined.

### 2.1 The cannabis plant

The cannabis plant, *Cannabis sativa* L<sup>1</sup>, belongs to the Cannabaceae family<sup>2</sup>, which also includes hops. There are over 2,000 different varieties of cannabis each with their own distinct cannabinoid profile and effect.<sup>3</sup> Cannabis is an annual plant which grows wild in temperate and tropical regions. It is not native to Australia.<sup>4</sup>

Cannabis plants contain over 400 chemical substances which together induce one single effect when used as a drug. These include over 60 cannabinoids which, when ingested, activate the cannabinoid receptors in the body and produce a variety of effects on movement, appetite, emotion, memory and cognitive functions. The cannabinoid responsible for producing the psychoactive effects of cannabis is called Delta-9-Tetrahydrocannabinol (THC). It also produces therapeutic effects that help to reduce pain, nausea and vomiting, and to stimulate appetite. Cannabidiol (CBD) is a cannabinoid which is non-psychoactive and may reduce the unwanted psychoactive effects of THC.<sup>5</sup>

Varieties of cannabis<sup>6</sup> grown for illicit drug use (**marijuana**) are generally cultivated to maximise the levels of THC, which may range from 3-15%.<sup>7</sup>

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<sup>1</sup> E Koleth (revised and updated by Daniel Montoya and Gareth Griffith), [Medical cannabis](#), Issues Backgrounder 5/2014, NSW Parliamentary Research Service, 2014. The question as to whether cannabis is one species, *Cannabis sativa* with several subspecies or varieties (*Cannabis indica*, *Cannabis sativa* and *Cannabis ruderalis*), or several distinct species, such as *Cannabis sativa*, *Cannabis indica* and *Cannabis ruderalis*, is not yet resolved in the scientific literature. The question is not simply academic. As the following article notes, “As academic and commercial interest grows, governments and the research community will encounter a rising demand for taxonomic information to help resolve disputes, establish registered cultivars, and create reliable centralized databases of cannabis information. Botanist Ernest Small of the government agency Agriculture and Agri-Food Canada, says that talking about cannabis taxonomy “is really talking about the ability of countries to rationally regulate important drugs and products.” L Laursen, [Botany: the cultivation of weed](#), *Nature*, 24 September 2015. Vol 525 (S4-S5)

<sup>2</sup> Encyclopaedia Britannica, [Cannabaceae](#), 2016 [online – accessed 6 May 2016]

<sup>3</sup> Rural Industries Research and Development Corporation, [Industrial Hemp](#), 2016 [online – accessed 21 January 2016]

<sup>4</sup> G Griffith and R Jenkin, [Cannabis: The Contemporary Debate \(Vol 1: Text\)](#), Background Paper No 1994/1, NSW Parliamentary Library Research Service, 1994

<sup>5</sup> Legislative Council General Purpose Standing Committee No. 4, [The use of cannabis for medical purposes](#), Report 27, May 2013

<sup>6</sup> Medical Marijuana.ca, [Understanding strains](#), no date [online – accessed 12 November 2015]

<sup>7</sup> FSANZ, [Assessment Report – Application A1039: Low THC Hemp as a Food](#), 7 December

Cannabis varieties have different therapeutic effects when used as **medical cannabis** (or medicinal cannabis)<sup>8</sup>; for example, pure indica strains:

... have by far the most narcotic, body stone and pain blocking qualities so they are highly coveted by medical patients with any sort of pain. As a result of their higher CBD levels they are also helpful as a sleeping aid for those suffering with insomnia.<sup>9</sup>

**Industrial hemp** (hemp, low THC hemp or industrial cannabis) generally has no THC, although it may have up to 1% in its leaves and flowering heads.

## 2.2 A brief history of industrial hemp

Cannabis<sup>10</sup> is one of the oldest cultivated crops, having first been grown in central and east Asia as early as 10,000 BC. By 4,000 to 2,000 BC, in China, India, Mesopotamia and India, cannabis was widely cultivated for a variety of purposes, including for the fibre and drug, both as a medicine and as an euphoriant. Cannabis fibre was widely used to make coarse cloth, rope and paper throughout history, contributing significantly to the profitability of many civilizations and colonies including the Americas.<sup>11</sup>

While there is little available information about the extent of the industry in Australia prior to the 1930s, in NSW it appears to have been grown in the Northern Rivers and Hunter regions.<sup>12</sup> This changed in 1935 when NSW listed cannabis as a prohibited drug; in 1938, it also declared cannabis to be a noxious plant across all of NSW. While cannabis is still a prohibited drug in NSW, it is no longer classified as a noxious plant. Scientific trials began in 1995/96 and it may now be grown as industrial hemp under licence. The history of cannabis regulation is covered in depth in Chapter 3 of this paper.

## 2.3 Commercial uses of industrial hemp

Cannabis is a fast growing, annual herbaceous plant that can reach a height of 5 metres, depending on variety and growing conditions. It is a short-day plant

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2011

<sup>8</sup> For further information on medical cannabis, see the following: Victorian Law Reform Commission, [Medicinal Cannabis](#), Report, August 2015; E Koletch (revised and updated by Daniel Montoya and Gareth Griffith), op. cit.; Legislative Council General Purpose Standing Committee No. 4, op. cit.

<sup>9</sup> Medical Marijuana.ca, op. cit.

<sup>10</sup> This section deals primarily with the industrial use of hemp. For a history of the medical uses of cannabis, see the following sources: Legislative Council General Purpose Standing Committee No. 4, op. cit.; G Griffith and M Swain, [The Medical Use of Cannabis: Recent Developments](#), Briefing Paper No 11/1999, NSW Parliamentary Library Research Service, 1999.

<sup>11</sup> G Griffith and R Jenkin, op. cit.

<sup>12</sup> Northern Rivers Hemp Association, [Fact Sheet No 1 Industrial Hemp History & Uses](#), 2010. See also: J L Jiggins, [Marijuana Australiana: cannabis use, popular culture and the Americanisation of drugs policy in Australia, 1938-1988](#), unpublished PhD Thesis, Queensland University of Technology, 2004

(long nights), requiring a set number of successive short days for flower initiation. Hemp has a slender main stem which has few branches when grown at commercial crop densities. The stem is comprised of two parts: the bark or bast contains longer fibres; and the hurd (core or shives) contains shorter fibres. The bast represents approximately one third of the stem; the hurd about two thirds.<sup>13</sup> Industrial hemp can be grown as a fibre, seed or dual-purpose crop, depending upon the variety.

Some authors estimate that the global market for industrial hemp consists of more than 25,000 products in nine submarkets:

- Agriculture;
- Textiles;
- Recycling;
- Automotive;
- Furniture;
- Food/nutrition/beverages;
- Paper;
- Construction materials; and
- Personal care.<sup>14</sup>

Bast fibres (Figure 1) are used in a variety of products including fabrics and textiles, rope, canvas, home furnishings, and industrial products. Hurds are used in applications such as animal bedding, papermaking and building materials. Hemp seeds and hemp oil (Figure 2) are used in a variety of foods and beverages. Hemp oil is also used in industrial products, such as fuel, solvents, varnishes and printing inks, as well as personal care products and cosmetics.<sup>15</sup>

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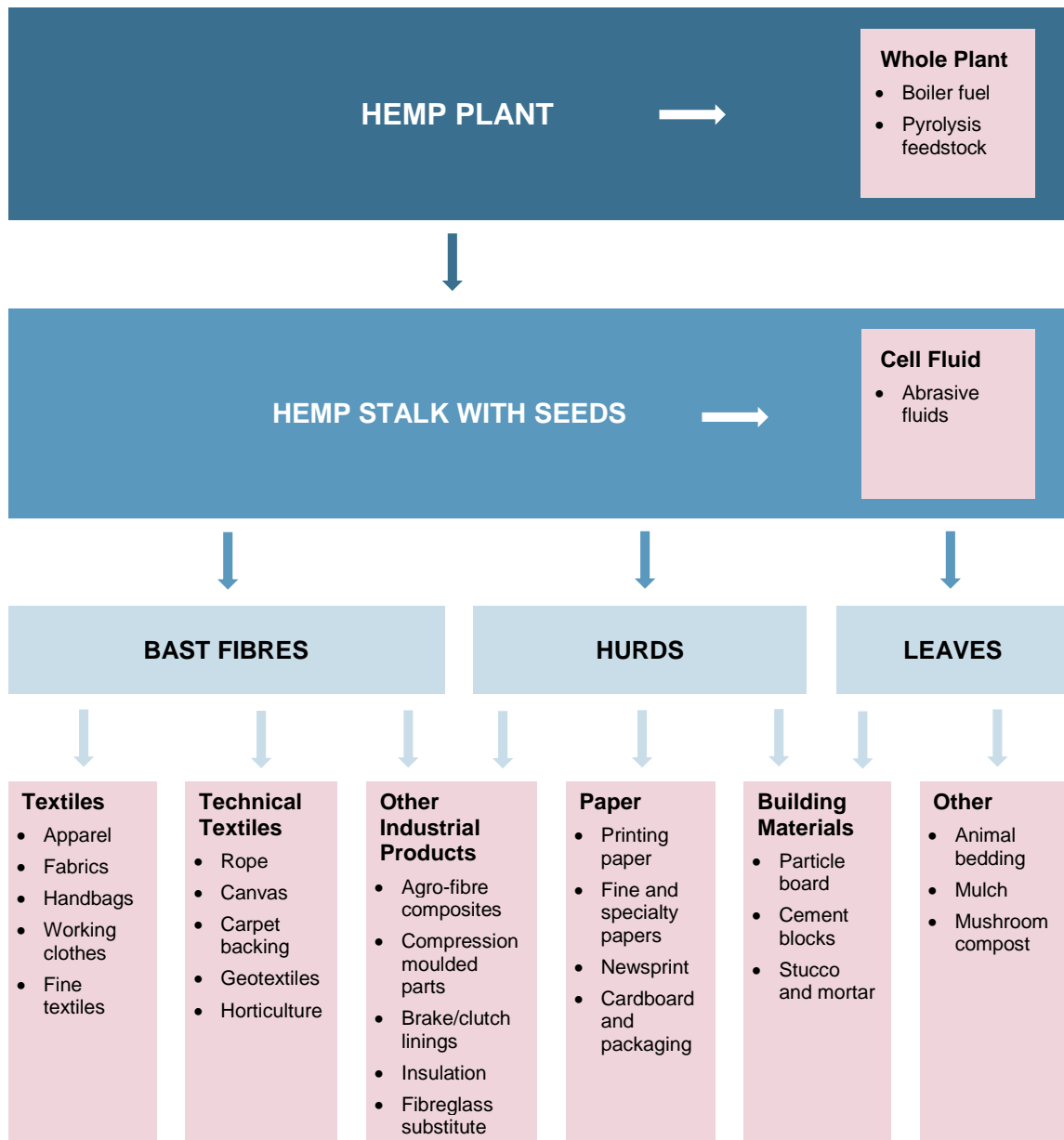
<sup>13</sup> NSW Department of Primary Industries, [Industrial hemp – a new crop for NSW](#), Primefact 801, July 2008, 6pp

<sup>14</sup> R Johnson, [Hemp as an Agricultural Commodity](#), Congressional Research Service, CRS Report, 2 February 2015

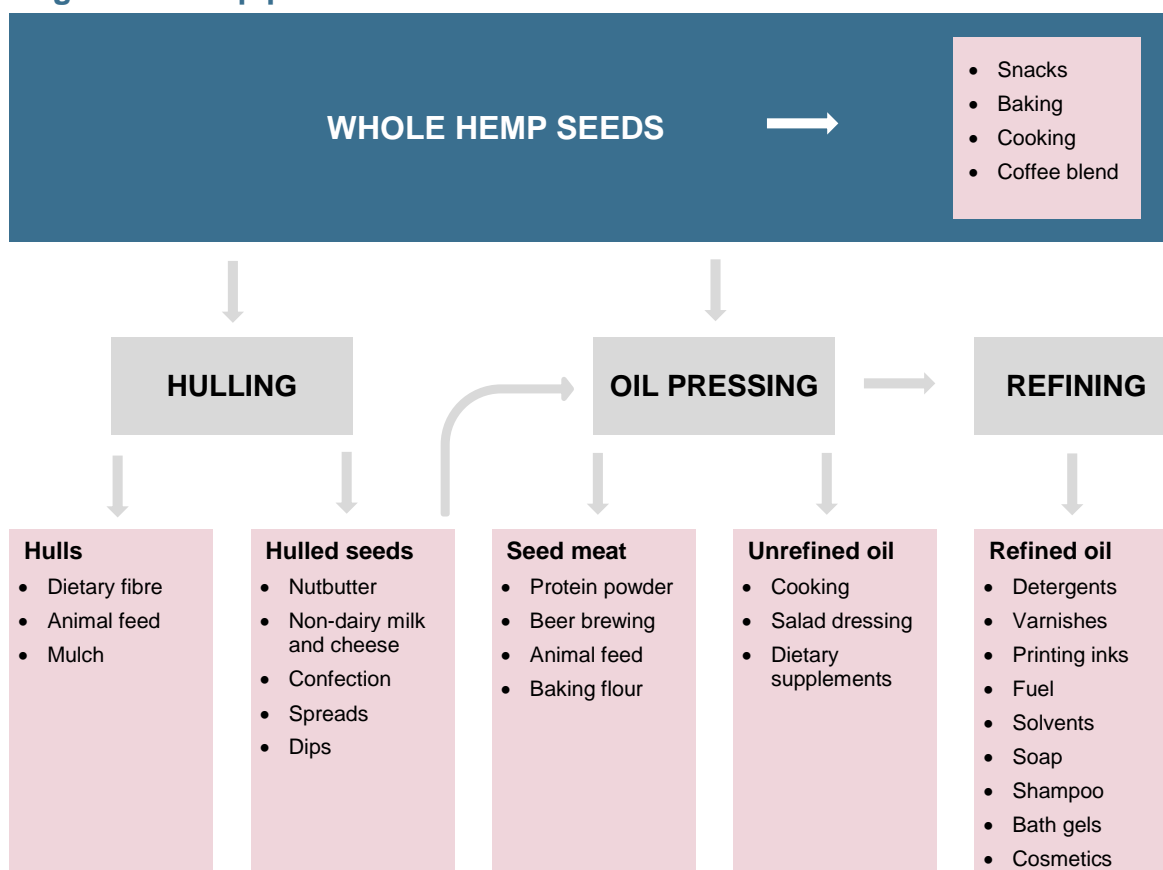
<sup>15</sup> NSW Department of Primary Industries, [Industrial hemp – a new crop for NSW](#), Primefact 801, July 2008, 6pp. For more detailed discussion of industrial hemp products, see the following: [The Guardian, Growing our way out of climate change by building with hemp and wood fibre](#), 25 September 2014; J Larkin, [Submission seeking approval to commercialise Industrial Hemp in NSW](#), Demand Farming Australia, 27 June 2007, submission made to NSW Legislative Council Standing Committee on State Development, [Aspects of agriculture](#), 2007, 171pp; S Thedinger, Prohibition in the United States: International and U.S. Regulation and Control of Industrial Hemp, [Colorado Journal of International Environmental Law and Policy](#), 2006, Vol 17(2):419-446; C N Merfield, [Industrial Hemp and its Potential for New Zealand](#), A Report for the 1999 Kellogg Rural Leadership Course, November 1999, 33pp



Figure 1: Hemp products: whole plant, fibres and leaves<sup>16</sup>



<sup>16</sup> Adapted from: Industrial Hemp Association of Tasmania, [Modern Uses for Hemp](#), no date [online – accessed 30 November 2015]; NSW Department of Primary Industries, [Industrial hemp – a new crop for NSW](#), Primefact 801, July 2008, 6pp

Figure 2: Hemp products: seeds<sup>17</sup>

## 2.4 Environmental impacts

Hemp is a low environmental impact crop, both in terms of its cultivation and the products made from hemp.<sup>18</sup> Some research using life cycle analysis of hemp products has found them to be superior to comparative products with regards to environmental benefits such as primary energy use.<sup>19</sup>

<sup>17</sup> Adapted from: R Johnson, op. cit.; North American Industrial Hemp Council, [Hemp Seed](#), 2015 [online – accessed 30 November 2015]; Industrial Hemp Association of Tasmania, op. cit.

<sup>18</sup> S Smith-Heisters, [Illegally Green: Environmental Costs of Hemp Prohibition](#), Reason Foundation, March 2008, 44pp; N Cherrett et al., [Ecological Footprint and Water Analysis of Cotton, Hemp and Polyester](#), Report prepared for and reviewed by BioRegional Development Group and WWF Cymru, Stockholm Environment Institute, 2005, 38pp

<sup>19</sup> See for example: T Prade, [Industrial Hemp \(Cannabis sativa L.\) – a High-Yielding Energy Crop](#), unpublished Doctoral Thesis, Swedish University of Agricultural Sciences, 2011, 93pp; J Haufe and M Carus, [Hemp Fibres for Green Products – An assessment of life cycle studies on hemp fibre applications](#), European Industrial Hemp Association, June 2011, 20pp

**Table 1: The ecological effects of different crops (European study 2007)<sup>20</sup>**

Crop	Nutrition depletion	Pesticides	Erosion	Soil compaction	Water consumption	Biodiversity	Agro-biodiversity
Permanent pasture	A	A	A	A	A	A	A
Short rotation coppice (poplar, willow)	A	A	A	A	B	A/B	A
Winter grains	A	A	A	A	A	B	B
Linseed	A	B	A/B	A	A	A/B	A
Hemp	A	A	A/B	A	B	B	A
Alfalfa	B	A	A	A/B	A/B	A/B	A
Grass	B	B	B	A/B	A	B/C	A
Switchgrass	?	?	A	A	A	B	A
Mustard	A/B	B	A/B	A	B	B	A
Sorghum	A	B/C	A	A	A/C	B	B
Wheat	A	B	A	A	B	B/C	C
Sunflower	A/B	B	B/C	A	B	A/B	B
Rapeseed (canola)	B/C	C	B	A	0	B/C	A/B
Sugarbeet	B/C	B	C	C	A/C	B	B
Maize	C	C	C	B	A/B	C	B/C
Potato	B/C	B	C	C	C	B/C	C

Key: A = Lowest impact on environment, B = Medium impact, C = Worst impact on environment, 0 = not applicable, ? = insufficient database

A study by the European Environmental Agency found that hemp (in European conditions) is one of the most environmentally friendly crops across a variety of indicators (Table 1). Hemp is an ideal rotational crop due to its impact on soil conditions.<sup>21</sup> It has a deep rooting system, which benefits soil structure, and suppresses soil pathogens such as nematodes and fungi. Hemp can be used for land reclamation and land remediation (phytoremediation), being capable of absorbing heavy metals from the soil.<sup>22</sup> It is so effective in this regards that industrial hemp crops were planted to help purify soil heavily irradiated by the

<sup>20</sup> S Piotrowski and M Carus, *Ecological benefits of hemp and flax cultivation and products*, nova-Institute, May 2011, p.4 – derived from: European Environmental Agency, *Estimating the environmentally compatible bioenergy potential from agriculture*, EEA Technical Report No 12/2007, 2007, Annex VI Environmental pressures per crop

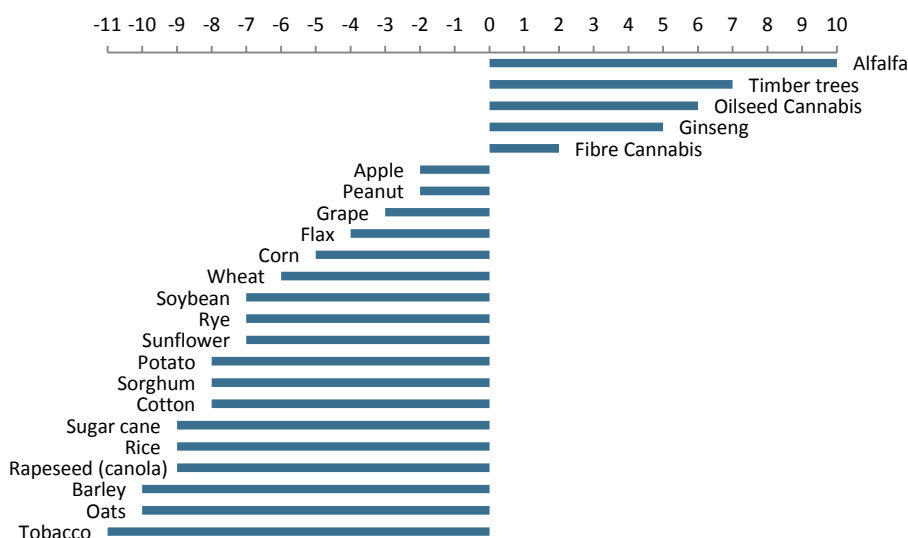
<sup>21</sup> Tasmanian House of Assembly Standing Committee on Environment, Resources and Development, *Inquiry into the Tasmanian Industrial Hemp Industry*, Report No. 1 of 2013, 2013, 103pp

<sup>22</sup> S Piotrowski and M Carus, op. cit.; T Prade, op. cit.

1986 Chernobyl disaster.<sup>23</sup> Hemp cultivation requires very limited amounts of pesticides, herbicides and fungicides. Few insect pests affect hemp and fungal diseases are rare. Hemp shades the ground quickly after sowing, thereby generally outgrowing weeds and leaving the soil almost weed-free after harvest.<sup>24</sup> Weed control is more likely to be necessary if grown at low plant density for seed production.<sup>25</sup>

Measuring the relative impact of a crop on biodiversity is a complex issue, especially given almost all cropping impacts negatively on natural biodiversity. A 1999 study suggests that hemp is relatively benign when it comes to impacts on biodiversity, using what the authors admit is a relatively crude evaluation (Figure 3).<sup>26</sup> 25 criteria were used including water consumption, continuity of plant cover, energy consumption and the use of biocides.

**Figure 3: Crude mean evaluation of biodiversity friendliness of selected major crops including fibre and oilseed Cannabis<sup>27</sup>**



<sup>23</sup> E Bruenig, The Wonder Drug: The medical marijuana industry's latest trend, *New Republic*, November 2015, pp19-25

<sup>24</sup> S Piotrowski and M Carus, op. cit.; T Prade, op. cit.

<sup>25</sup> NSW Department of Primary Industries, [Industrial hemp – a new crop for NSW](#), Primefact 801, July 2008, 6pp

<sup>26</sup> See also: F & P Harmsen, [Submission to the Standing Committee on Environment, Resources and Development – Tasmanian Hemp Industry Inquiry](#), Tasmanian Hemp Company, 22 April 2012; C Stoate, J Szczur and J Partridge, [The ecology of hemp production relative to alternative break crops](#), *Agriculture and the Environment IX, Valuing Ecosystems: Policy, Economic and Management Interactions*, 2012, pp264-269

<sup>27</sup> Adapted from: S Montford and E Small, [A comparison of the biodiversity friendliness of crops with special reference to hemp \(\*Cannabis sativa\* L.\)](#), *Journal of the International Hemp Association*, 1999, Vol 6(2):53-63

### 3. THE HISTORY OF CANNABIS REGULATION

In the early stages of the history of cannabis regulation, industrial hemp was caught up with the regulation of cannabis use as a recreational drug. Prior to the early 20<sup>th</sup> century, cannabis was legally grown for industrial and medicinal purposes across the world. In 1913, California introduced the first legislation to regulate cannabis, prohibiting distribution of cannabis for recreational purposes. The Federal Marihuana Tax Act of 1937 effectively made industrial hemp illegal in the US; similar Australian Commonwealth and State legislation was introduced around the same time. The US was also a key driver of the international conventions which furthered and reinforced the criminalisation of cannabis. Although the decriminalisation of cannabis began in the late 1960s, it was not until the early 1990s that a legal distinction between industrial hemp and marijuana was first introduced in Australia. This chapter deals with the regulatory history of cannabis in two parts: the first looks more broadly at Australian and international developments; the second considers NSW in detail.

#### 3.1 Australian and international history

The history of cannabis regulation in Australia is closely tied with the international landscape, often echoing a US development in the decade following.<sup>28</sup> Cannabis has a long and varied history in the US. Industrial hemp was grown by the first US colonists.<sup>29</sup> Medical use of cannabis in the US commenced in the 1850s, when it became available in pharmacies. Use of marijuana as a non-medical drug began in the early 1900s. This practice is thought to have been introduced by Mexican, Caribbean and West Indian immigrants; hostility to what was considered a Mexican drug gradually emerged from hostility towards Mexican immigrants.<sup>30</sup> Phase one of marijuana prohibition in the US involved the States prohibiting distribution for non-medical purposes; it commenced in California with the 1913 Poison Act.<sup>31</sup> By 1937, 46 of the 48 States, as well as the District of Columbia, had adopted anti-cannabis laws.<sup>32</sup> Phase two commenced in the early 1930s, with Federal Government attempts to introduce uniform regulatory controls. The Government's 1930s anti-marijuana campaign culminated in the Federal Marihuana Tax Act of 1937.<sup>33</sup> While the Act aimed to eliminate the use of marijuana as a drug, some

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<sup>28</sup> For a more extensive history, see: Legislative Council General Purpose Standing Committee No. 4, op. cit.; G Griffith and R Jenkin, op. cit.; Senate Standing Committee on Social Welfare, *Drug Problems in Australia – an intoxicated society? A report on the extent and nature of the inappropriate use of alcohol, tobacco, analgesics and cannabis*, Report from the Senate Standing Committee on Social Welfare, 1977, 224pp

<sup>29</sup> C N Moran, *Industrial Hemp: Canada Exports, United States Imports*, *Fordham Environmental Law Review*, 2014-15, Vol 26(3):383-449

<sup>30</sup> S A Vitale, *“Dope” Dilemmas in a Budding Future Industry: An Examination of the Current Status of Marijuana Legalization in the United States*, *University of Miami Business Law Review*, 2014, Vol 23(1): 131-176

<sup>31</sup> C N Moran, op. cit.; R Bonnie, *A History of Marijuana Prohibition in the United States*, 1974. University Press of Virginia, 368pp.

<sup>32</sup> Senate Standing Committee on Social Welfare, op. cit.

<sup>33</sup> S A Vitale, op. cit.; R Bonnie, op. cit.

commentators argue that in effect it also made industrial hemp illegal.<sup>34</sup> In 1942, cannabis extracts were deregistered as a medicine.<sup>35</sup> The hemp industry experienced a brief resurgence during World War II for war purposes, but the industry declined rapidly after the end of the war, production ceasing by 1958.<sup>36</sup>

Until 1900 or so, there were very few legal controls on the sale or use of drugs in Australia, including cannabis. Factors which influenced the process of cannabis prohibition included pressure from international bodies dominated by the US and the 1925 *Geneva Convention*. The *Geneva Convention* added cannabis to the drugs listed under the 1911-12 *Hague Convention*, which already included opium, morphine, heroin and cocaine. It required, amongst other things, the prohibition of the non-medical use of cannabis.<sup>37</sup> In 1926, the Commonwealth:

... acted to control cannabis importation under the *Customs Act 1901*. Victoria legislated to control cannabis use in 1927. For New South Wales, cannabis, defined as 'Indian hemp (*Cannabis Indica*)', was added by proclamation in 1935 to the list of prohibited substances under the *Police Offences (Amendment) Act 1908*.<sup>38</sup> South Australia dealt with the drug in its 1934 *Dangerous Drugs Act*; Queensland followed suit in 1937. These laws were passed at a time when, in the view of the Queensland Advisory Committee, 'there was no perceived problem with cannabis use in Australia.' It seems that the cultivation of cannabis for personal use remained legal in Western Australia till 1950 and in Tasmania till as late as 1959 when it was prohibited under the *Dangerous Drugs Act*. The Commonwealth in the meantime had acted in 1956 to introduce an absolute prohibition on the drug.<sup>39</sup>

Cannabis extracts remained on Australian pharmacy shelves until the 1950s.<sup>40</sup>

International attempts to restrict cannabis use ramped up from the 1950s. Phase three of marijuana prohibition in the US involved substantial increases in penalties. In 1951, Congress passed the Boggs Act, which classified cannabis as a narcotic for the first time and established minimum sentencing guidelines for marijuana-related offenses.<sup>41</sup> The Narcotic Control Act of 1956 increased penalties still further.<sup>42</sup> The US was the principal instigator of the 1961 United Nations [\*Single Convention on Narcotic Drugs\*](#). In reflection of the US regulatory regime, the Convention placed cannabis in Schedule IV alongside heroin and

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<sup>34</sup> N M Keller, [The Legalization of Industrial Hemp and What It Could Mean for Indiana's Biofuel Industry](#), *Indiana International & Comparative Law Review*, 2013, Vol 23(3):555-589

<sup>35</sup> G Griffith and R Jenkin, op. cit.

<sup>36</sup> R Johnson, op. cit.

<sup>37</sup> G Griffith and R Jenkin, op. cit.

<sup>38</sup> NSW Government Gazette, *Police Offences (Amendment) Act, 1908. As Amended: Proclamation*, 11 October 1935, p.3,996

<sup>39</sup> G Griffith and R Jenkin, op. cit., p.22

<sup>40</sup> G Griffith and R Jenkin, op. cit.

<sup>41</sup> S A Vitale, op. cit.

<sup>42</sup> R Bonnie, op. cit.

other dangerous narcotics.<sup>43</sup>

Drug laws in Australian jurisdictions were reformed to comply with the obligations of the 1961 Convention. In NSW, cannabis was proscribed under the [Poisons Act 1966](#) as a drug of addiction (now the [Poisons and Therapeutic Goods Act 1966](#)).<sup>44</sup>

From the late 1960s, internationally the regulatory treatment of cannabis began to diverge. On one hand, regulatory controls were consolidated and extended to deal with drug trafficking. The US passed the Comprehensive Drug Abuse Prevention and Control Act in 1970, which included the Controlled Substances Act (CSA). Under the CSA, which is still in force today, cannabis was classified as a Schedule I controlled substance and no distinction was made between industrial hemp and marijuana.<sup>45</sup> Cannabis could not be grown without a permit from the US Drug Enforcement Administration (DEA).<sup>46</sup> Shortly after, the 1971 [Convention on Psychotropic Substances](#) included THC, the psychoactive component of marijuana, in its most stringent Schedule (Schedule I) to prohibit its use except for scientific and very limited medical purposes.<sup>47</sup>

As a result of substantial national debate on how to deal with drug trafficking, NSW introduced new offences with regards to 'commercial' drug supply, cultivation and manufacture in the [Drug Misuse and Trafficking Act 1985](#), which is still in effect today. In 1988, Australia became a signatory to the [United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances](#) which, amongst other things, requires participating nations to prevent the illicit cultivation of plants containing narcotic or psychotropic substances. The cannabis plant is specifically included. The Convention was ratified on 16 November 1992 and entered into force in Australia on 14 February 1993. The Commonwealth passed the [Crimes \(Traffic in Narcotic Drugs and Psychotropic Substances\) Act 1990](#) to give effect to the Convention.<sup>48</sup>

On the other hand, the first moves towards decriminalization began in the 1960s. Regulatory regimes also started to differentiate between marijuana, medical cannabis and industrial hemp. Phase 4 of marijuana prohibition in the

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<sup>43</sup> G Griffith and R Jenkin, op. cit.

<sup>44</sup> Ibid. This paper states that it also remained a prohibited drug under the [Police Offences \(Amendment\) Act 1908](#), being treated in the same manner as heroin in accordance with a proclamation made in the Government Gazette on 5 August 1966. However, it appears likely that this was a transitional arrangement only. The [Poisons Act 1966](#), as assented to on 13 April 1966, repealed the relevant parts of the [Police Offences \(Amendment\) Act 1908](#). According to Hansard, the relevant parts of the 1966 Act had not come into effect as of 11 October 1966: *NSW PD, Dentists (Amendment) Bill 1966*, 11 October 1966, p.1,657

<sup>45</sup> C N Moran, op. cit.

<sup>46</sup> R Johnson, op. cit.

<sup>47</sup> D Bewley-Taylor et al., [The Rise and Decline of Cannabis Prohibition: The History of Cannabis in the UN Drug Control System and Options for Reform](#), Transnational Institute, March 2014, 85pp. As of 25 September 2013, THC remains on Schedule I of the [Convention](#).

<sup>48</sup> G Griffith and R Jenkin, op. cit.

US saw the reduction of penalties for personal use across the majority of US States between 1967 and 1973.<sup>49</sup> Amendments to the Opium Act in the Netherlands in 1976 amounted to 'de facto decriminalisation' of minor cannabis offences.<sup>50</sup> Decriminalisation occurred in some Australian jurisdictions during the 1980s and 1990s; today, the ACT, Northern Territory and South Australia have decriminalised minor cannabis offences. All other jurisdictions have introduced formal cannabis cautioning schemes. In November 2012, Colorado became the first US State to legalise possession and sale of marijuana for recreational use.<sup>51</sup>

Use of cannabis for medical purposes was first permitted in the US in 1978, with New Mexico passing the first State law.<sup>52</sup> As of November 2015, 24 States and the District of Columbia permit the use of cannabis for medical purposes.<sup>53</sup> In NSW, a 2013 Legislative Council inquiry recommended that the NSW Government amend the [Drug Misuse and Trafficking Act 1985](#) to permit the medical use of cannabis by patients with terminal illness or AIDS.<sup>54</sup> The NSW Government rejected this recommendation at the time. In September 2014, the Premier, Mike Baird, formed a Working Group to initiate a medical cannabis clinical trial and introduced the [Terminal Illness Cannabis Scheme](#).<sup>55</sup> The trial for terminally ill adults commenced in July 2015<sup>56</sup>, followed by a trial for children with epilepsy in October 2015<sup>57</sup> and a trial for patients undergoing chemotherapy in February 2016<sup>58</sup>. In December 2015, the NSW and Tasmanian Governments signed a Memorandum of Understanding to work collaboratively only a range of initiatives including clinical trials, innovative research, and developing capacity for the cultivation of cannabis for medicinal and scientific purposes.<sup>59</sup>

In August 2015, the Senate Legal and Constitutional Affairs Legislation Committee released its [report](#) into the Regulator of Medicinal Cannabis Bill 2014 (a Private Members Bill). Amongst other things, the report:

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<sup>49</sup> R Bonnie, op. cit.

<sup>50</sup> G Griffith and R Jenkin, op. cit.

<sup>51</sup> D Brown et al., *Criminal laws: materials and commentary on criminal law and process of New South Wales*, 2015. The Federation Press, 1,392pp

<sup>52</sup> ProCon.org, [Historical Timeline: History of Marijuana as Medicine – 2900 BC to Present](#), 13 August 2013 [online – accessed 17 November 2015]

<sup>53</sup> ProCon.org, [24 Legal Medical Marijuana States and DC](#), 14 March 2016 [online – accessed 19 May 2016]

<sup>54</sup> E Koleth (revised and updated by Daniel Montoya and Gareth Griffith), op. cit.

<sup>55</sup> NSW Government, [NSW leads the way on medical cannabis](#), Media Release, 16 September 2014

<sup>56</sup> NSW Government, [Australian-first medical cannabis trial begins in NSW](#), Media Release, 27 July 2015

<sup>57</sup> NSW Government, [World first for NSW medical cannabis trials for children with epilepsy](#), Media Release, 28 October 2015

<sup>58</sup> NSW Government, [Medical cannabis trial for chemo patients](#), Media Release, 26 February 2016

<sup>59</sup> NSW Government, [Tasmania and NSW unite to advance medicinal cannabis research](#), Media Release, 10 December 2015



- Supported, in principle, access to products derived from cannabis for medical purposes;
- Recommended amendment of the Bill to ensure medicinal cannabis products can be made available in Australia consistent with Australia's international obligations;
- Recommended that the Commonwealth, State and Territory governments work together to ensure a consistent approach to accessing medicinal cannabis and to facilitate compliance with any such access scheme and Australia's international obligations; and
- Recommended passage of the Bill, subject to its previous recommendations.

On 24 February 2016, the Commonwealth Parliament passed the [Narcotic Drugs Amendment Act 2016](#), which amends the [Narcotic Drugs Act 1967](#) to introduce a licensing scheme for the cultivation of cannabis for medicinal and related scientific purposes (see also Chapter 4.5).

With regards to the regulation of industrial hemp, all North American, many European and most ex-European colonial countries banned its cultivation at some point. However, it remained legal in most of Asia, South America, Eastern Europe and a few western European countries (e.g. France<sup>60</sup> and Austria<sup>61</sup>).<sup>62</sup> The situation began to change in the early 1990s; the UK legalised it in 1993, the Netherlands in 1994, Germany in 1996 and Canada in 1998.<sup>63</sup> By 2015, over 30 countries allowed the cultivation of industrial hemp.<sup>64</sup> As of May 2016, industrial hemp may be commercially grown in all Australian States and Territories except for the Northern Territory and South Australia.

### 3.2 NSW history

The early 20<sup>th</sup> century industrial hemp industry in NSW ended with the classification of Indian Hemp (*Cannabis sativa*) as a noxious plant in 1938 by an Ordinance made under the *Local Government Act 1919*.<sup>65</sup> Clause 5 identified six plants of particular significance, including Indian Hemp. With respect to Coca Leaf, Opium Poppy and Indian Hemp, the Ordinance required that:

The plants shall be completely removed from the soil and burnt or the plants and surrounding soil shall be thoroughly sprayed with a solution of weed-killer sufficiently concentrated to kill the plants and to sterilize the soil (cl 5(a)(i)).

<sup>60</sup> S Ronde, [Industrial Hemp in the Netherlands: The effects of changes in policies and subsidy structures](#), unpublished Masters Thesis, IMRD Consortium, 2013, 82pp

<sup>61</sup> C R Vogl and J Hess, [Hemp growing and research in Austria – 1995](#), *Journal of the International Hemp Association*, 1995, Vol 2(2)

<sup>62</sup> C N Merfield, op. cit.

<sup>63</sup> C N Moran, op. cit.; S Ronde, op. cit.

<sup>64</sup> R Johnson, op. cit.

<sup>65</sup> NSW Government Gazette, *Local Government Act, 1919: Ordinance No. 50 Noxious Plants*, 2 September 1938, pp.3,441-3,458

As discussed previously, in 1935 cannabis was added to the list of prohibited substances under the [Police Offences \(Amendment\) Act 1908](#). This regime was replaced by the [Poisons Act 1966](#), which was replaced in turn by the [Drug Misuse and Trafficking Act 1985](#) as the primary instrument for regulating prohibited drugs and plants.<sup>66</sup> The 1985 Act referred to “cannabis”, rather than “Indian hemp”. In section 3, a cannabis plant was defined as any plant of the genus Cannabis. Prohibited drugs included cannabis leaf, cannabis oil and cannabis resin (s3 & Schedule 1). The Act’s definition of cannabis excluded:

... fibrous material of the cannabis plant which does not contain any resins; that is where there is no actual drug. This provision exists in the Poisons Act and was designed to exempt hemp rope and other objects made of Indian Hemp or cannabis but which has no value as a drug.<sup>67</sup>

To deal with a loophole in the law, the [Drug Misuse and Trafficking \(Amendment\) Act 1986](#) introduced a new section 40A, which placed the onus of proving that there was no resin in the cannabis on the accused.<sup>68</sup>

The [Drug Misuse and Trafficking Act 1985](#), as made, allowed for the Department of Health to permit possession of cannabis for the purpose of scientific research (s 10(2)(d)). It also allowed a person to cultivate, supply or possess cannabis for the purpose of scientific research in accordance with an authority from the Department of Health (s 23(4)).

Indian Hemp’s status as a noxious plant was retained with the passage of the [Noxious Weeds Act 1993](#) in 1993.<sup>69</sup> Reclassified as a “noxious weed” in the W1 control category, Indian Hemp had to be “notified to local council then fully and continuously suppressed and destroyed”<sup>70</sup>.

On 1 June 1995, Tony Windsor, the Member for Tamworth, introduced the Industrial Hemp Production (Experimental Development) Bill 1995.<sup>71</sup> The aim of the Bill was to enable agricultural trials to assess the agronomic, economic, environmental and other aspects of growing low-grade cannabis plants. The Bill defined industrial hemp as “a cannabis plant, or part of a cannabis plant, that has a concentration of tetrahydrocannabinol of no more than 0.03 per cent” (cl 3). The Bill provided that the Director-General of the Department of Agriculture could authorise the cultivation of industrial hemp. Hemp grown in accordance with an authority would have been exempt from the [Noxious Weeds Act 1993](#).

<sup>66</sup> NSW PD, Drug Misuse and Trafficking Bill, Miscellaneous Acts (Drug Misuse and Trafficking) Amendment Bill, Second Reading, 26 November 1985, p.10,615

<sup>67</sup> NSW PD, [Drug Misuse and Trafficking \(Amendment\) Bill, Bail \(Amendment\) Bill, Second Reading](#), 23 April 1986, p.2,578

<sup>68</sup> NSW PD, [Drug Misuse and Trafficking \(Amendment\) Bill, Bail \(Amendment\) Bill, Second Reading](#), 23 April 1986, p.2,578

<sup>69</sup> NSW Government Gazette, [Noxious Weeds Act 1993 Order](#), 25 June 1993, pp3,141-3,192

<sup>70</sup> NSW Government Gazette, [Noxious Weeds Act 1993 Order No. 10](#), 7 February 1997, pp394-472

<sup>71</sup> NSW PD, [Industrial Hemp Production \(Experimental Development\) Bill, Second Reading](#), 1 June 1995, p.557

The Bill proposed amendment of the *Drug Misuse and Trafficking Act 1985* to remove industrial hemp from its ambit.

The Bill did not progress past the Second Reading stage. However, the Carr Government did approve the first industrial hemp trial later in 1995<sup>72</sup>, providing the required authorities under the *Drug Misuse and Trafficking Act 1985* and the *Noxious Weeds Act 1993* to the University of New England.<sup>73</sup> An inter-departmental committee with members from NSW Agriculture, the Department of Health, the Department of Land and Water Conservation, and the NSW Police was tasked with developing guidelines for the trials.<sup>74</sup> On 20 October 1995, industrial hemp was removed from the list of noxious weeds in NSW.<sup>75</sup>

The 2007 NSW Legislative Council Standing Committee on State Development inquiry, [Aspects of agriculture in NSW](#), recommended:

That the NSW Minister for Primary Industries work with the NSW Health Minister to seek an amendment of section 23 of the *Drug Misuse and Trafficking Act 1985* (NSW) to allow for commercialisation of industrial hemp in NSW, as is the case in other states. Responsibility for control of industrial hemp should be placed with the Department of Primary Industries.<sup>76</sup>

In response, the Government stated:

In 2007, a collaborative project between NSW DPI, the Attorney General's Department, NSW Health and NSW Police commenced to further investigate allowing commercial industrial hemp cultivation in NSW. After consideration of the issues, these agencies agreed to progress the changes necessary to allow industrial hemp commercialisation. Support was also given to the transfer of responsibility for authorising the cultivation of hemp for research purposes from the Director-General of NSW Health to the Director-General of NSW DPI.

Although industrial hemp is of no value for its drug content the concern has been that its cultivation could be used as a cover for criminal activities involving marijuana production. In January 2008 an interagency hemp committee was formed to ensure that law enforcement and public good would not be adversely affected by the commercial production of industrial hemp.<sup>77</sup>

On 7 May 2008, the Lemna Government introduced the Hemp Industry Bill 2008 in the Legislative Assembly. It received assent on 1 July 2008 and came into force on 31 October 2008 (see further Chapter 4 of this paper).

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<sup>72</sup> Chapter 6 of this paper provides more information on industrial hemp trials in NSW.

<sup>73</sup> Tony Windsor, *Government supports industrial hemp trialing*, Media Release, 20 September 1995

<sup>74</sup> Richard Amery, *Government gives go-ahead for industrial hemp*, Media Release, 20 September 1995

<sup>75</sup> NSW Government Gazette, *Noxious Weeds Act 1993 Order No. 7*, 20 October 1995, p7,337

<sup>76</sup> NSW Legislative Council Standing Committee on State Development, op. cit., p.47

<sup>77</sup> NSW Government, [NSW Government response to the Legislative Council Standing Committee on State Development Report on Aspects of Agriculture](#), May 2008, p.8

## 4. AUSTRALIAN INDUSTRIAL HEMP REGULATORY REGIMES

Commercial production of industrial hemp is permitted in the ACT, NSW, Queensland, Tasmania, Western Australia and Victoria. This chapter begins with an overview of the NSW regulatory regime, before comparing it to the other five jurisdictions where commercial industrial hemp production is legal (see also Appendix 1). In some cases, industrial hemp is regulated by specific purpose legislation (e.g. NSW); in others, it is regulated under legislation primarily concerned with drugs and controlled substances. The chapter then deals with recent developments in Tasmania before considering the Northern Territory and South Australia, where commercial production of industrial hemp is illegal. It finishes with a brief summary of relevant Commonwealth legislation and the bi-national food regulation system which prohibits industrial hemp products from being added to food or sold as food.

### 4.1 NSW

The [Hemp Industry Act 2008](#) (HI Act) established a licensing scheme for the commercial production of industrial hemp. The Act does not contain an objects clause (see Tables 2 to 3 and Appendix 1 for a comparison with other regulatory regimes). It uses a slightly different definition of industrial hemp compared to the 1995 Bill, together with new nomenclature – **low-THC hemp**, which “means any plant of the genus *Cannabis*, by whatever name that plant may be called, that has a concentration of THC in its leaves and flowering heads of no more than 1%, and includes the seed of any such plant and any product (such as oil or fibre) derived from any such plant” (s 3). In contrast, the 1995 Bill defined industrial hemp as having a THC concentration of no more than 0.03 per cent. Under the [Hemp Industry Regulation 2008](#), seed may only be used if it is supplied on the basis that it will not produce hemp that has a concentration of THC (in its leaves and flowering heads) of more than 0.5% (cl 9(c)).

A licence may be granted under the HI Act by the Director-General of the Department of Industry for a period of up to 5 years (s 11) for any of the following purposes:

- Commercial production;
- Use in any manufacturing process; or
- Scientific research, instruction, analysis or study (s 5).

With regards to cannabis plants not regulated under the HI Act (namely, those with THC concentrations above 1%), the [Drug Misuse and Trafficking Act 1985](#) still permits the cultivation, supply or possession of cannabis plants for the purpose of scientific research (s 23(4)).

A rigorous licence application process exists under Part 2 of the HI Act and Part 2 of the [Hemp Industry Regulation 2008](#) (HI Regulation). As set out in the Agreement in Principle speech:

A person must be of good repute to qualify for a licence under the scheme. The applicant's character, honesty and integrity will be taken into account in determining a licence application. The bill goes further, giving the director general the power to refuse to grant a licence if a close business associate [s 4] of the applicant is not of good repute. This will ensure that a shady character is not able to hide behind the veil of his or her associates. In addition, licences cannot be granted to applicants who have been found guilty of serious drug-related offences. The same applies if a close business associate of an applicant has been found guilty of a serious drug-related offence.<sup>78</sup>

Mandatory licence conditions are set out in Part 3 of the HI Regulation; additional conditions may be imposed at the time when the licence is granted (HI Act, s 12).<sup>79</sup> The mandatory conditions include the following:

- (c) a licensee may only use seed that is supplied on the basis that it will not produce hemp that has a concentration of THC (in its leaves and flowering heads) of more than 0.5%; and
- (d) a licensee must take all necessary steps to ensure that any hemp cultivated by the licensee has a concentration of THC (in its leaves and flowering heads) that does not exceed 1%.

The Director-General may either suspend (s 15) or revoke (s 16) a licence if the licensee contravenes any provision of the Act or Regulation. Section 6 of the Act makes it an offence to:

- (a) Cultivate or supply low-THC hemp otherwise than for the purpose for which the licence is granted; and
- (b) Break the conditions to which the licence is subject.

The maximum penalty is \$11,000 or imprisonment for 2 years, or both (s 6). Under the Regulation, a penalty notice of \$550 may also be issued for the purposes of section 6 of the Act (cl 16).

Strong investigation and enforcement powers are also included in the regulatory regime.<sup>80</sup> Under Part 3 of the Act, police officers and inspectors may require a person to provide information or records (ss 21-22), question a person (ss 31-32), give directions to rectify a breach of licence (s 23), and enter and search premises without a search warrant except for premises used only for residential purposes (ss 25-30).

The HI Act amended the [Drug Misuse and Trafficking Act 1985](#) to remove industrial hemp from its regulatory scope; according to a new section 8A, the

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<sup>78</sup> NSW PD, [Hemp Industry Bill 2008, Agreement in Principle](#), 7 May 2008, p.7,106

<sup>79</sup> See also: NSW Department of Primary Industries, [Hemp Industry Act 2008 \(NSW\) General Conditions of Licence](#), 29 October 2013; NSW Department of Primary Industries, [Growing low THC hemp under licence in NSW – Frequently asked questions](#), January 2012; NSW Department of Primary Industries, [Guidelines for the preparation of licence applications under the Hemp Industry Act 2008 \(NSW\)](#), 29 August 2011

<sup>80</sup> See NSW PD, [Hemp Industry Bill 2008, Agreement in Principle](#), 7 May 2008, p.7,106

[Drug Misuse and Trafficking Act 1985](#) no longer renders anything unlawful done in accordance with the HI Act. The 1985 Act also no longer provides that the Director-General of NSW Health may issue an authority for industrial hemp (s 41A). The HI Act also amended the [Poisons and Therapeutic Goods Act 1966](#) so that nothing under the 1966 Act or its regulations applies to anything done in accordance with the HI Act.

Neither the HI Act nor the HI Regulation prohibit the use of hemp seeds as food (see further Chapter 4.5). However, the [Stock Foods Regulation 2010](#) does prohibit the use of any type of Cannabis plant (excluding the seed of any such plant that has had the outer layer or bract removed) from being used as stock food (Schedule 1).<sup>81</sup>

Cannabis is currently prohibited from being added to food or sold as food under the [Food Standards Code](#), which is applied in NSW through the [Food Act 2003](#) (see further Chapter 4.5).

#### 4.1.1 Review of the Hemp Industry Act 2008

Section 50 of the HI Act requires the Minister to review the Act as soon as possible after the Act has been in force for 5 years. The NSW Department of Primary Industries released a [review](#) of the Act in May 2016, which reviewed the Act to determine:

- Whether the policy objectives of the Act remain valid; and
- Whether the terms of the Act remain appropriate for securing those objectives.

The review made no recommendations for reform. The review outcomes for Parts 1 to 3 of the Act are worth noting:

##### [Part 1 – Preliminary](#) [Definitions]

###### *Review Outcome*

There have been no substantive issues in the administration of the Act. Stakeholders have not raised any key issues relating to the current scope of the Act that would require any change to the current Act definitions.

Stakeholders have indicated interest in increasing the scope of the Act to cover medicinal cannabis and hemp as food. Both these issues are currently being considered through national processes and any legislative amendments will be addressed once these processes are completed.

##### [Part 2 – Licensing scheme](#)

###### *Review Outcomes*

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<sup>81</sup> This provision was first introduced by the [Stock Foods Amendment \(Foreign Ingredients\) Regulation 2008](#) when it amended the [Stock Foods Regulation 2005](#). The amending regulation was gazetted at the same time as the [Hemp Industry Regulation 2008](#).

The licensing and reporting regime in place continues to provide a mechanism to ensure that only appropriate individuals are granted a licence. The reporting requirements and licensing fees ensure that those entering the industry are seriously committed to commercial production and are held accountable for their annual production and distribution of product. The provisions regarding licencing are likely to require amendment, should future approval be given for the use of low THC hemp as food, and it is determined that cultivation of hemp for food be regulated under this Act.

### Part 3 – Investigation and enforcement powers

#### *Review Outcomes*

The review found that the current investigation and enforcement powers are adequate to ensure compliance with the Act, and do not require amendment at this time.<sup>82</sup>

## **4.2 State and Territory comparison**

Industrial hemp cultivation is legal in 6 jurisdictions: the ACT, NSW, Queensland, Tasmania, Western Australia and Victoria (see Appendix 1 for more detail). This section summarises the key points of regulatory difference and commonality.

### **Industrial hemp definitions**

Apart from terminology (e.g. industrial hemp, industrial cannabis, low-THC hemp or low-THC cannabis), the main difference between regimes when defining industrial hemp is the amount of THC permitted (Table 2). Victoria and Western Australia set an upper limit of 0.35% in the leaves and flowering heads of a hemp plant. In contrast, the ACT, NSW, Queensland and Tasmania set two limits: leaves and flowering heads of a hemp plant must have less than 1%; and hemp seed may only be used if supplied on the basis that it will not produce hemp plants with a concentration of THC in its leaves and flowering heads of more than 0.5%. In the case of the Queensland legislation, this is explained as follows:

Certified cannabis seed is seed certified to produce plants with a THC concentration in their leaves and flowering heads of not more than 0.5%. However, industrial cannabis plants may have a THC concentration in their leaves and flowering heads of not more than 1%. The difference recognises that the leaves and flowering heads of plants grown using certified cannabis seed may have more than 0.5% THC because of environmental conditions beyond a grower's control [note to section 52(b)].

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<sup>82</sup> NSW DPI, [Review of the Hemp Industry Act 2008](#), May 2016, pp.2-3

**Table 2: THC limits in industrial hemp by jurisdiction**

Jurisdiction	THC maximum limit
Victoria Western Australia	0.35% in the leaves and flowering heads of a hemp plant
ACT NSW Queensland Tasmania	Two limits: <ul style="list-style-type: none"> <li>The leaves and flowering heads of a hemp plant must have less than 1%</li> <li>Hemp seed may only be used if supplied on the basis that it will not produce hemp plants with THC in its leaves and flowering heads of more than 0.5%</li> </ul>

As with the Northern Territory and South Australian legislation (see Chapter 4.4), the Victorian legislation also makes an exception for processed products made from hemp, as the principal purpose of the Act is to regulate drugs and controlled substances. Specifically, the following products are exempt from the provisions of the Act:

- Processed fibre products which contain less than 0.1% THC, no whole cannabis seeds, and are not in a form suitable for ingestion, smoking or inhaling purposes; and
- Processed products made from cannabis seeds which contain less than 0.001% THC and no whole cannabis seeds (s 4A).

## Licences

All six industrial hemp regulatory regimes permit the cultivation, possession and supply of industrial hemp. In some cases, this is under the one licence type (e.g. NSW), whereas in others separate researcher and grower licences are available (e.g. the ACT). Queensland also authorises the following people to produce, possess and/or supply industrial hemp for specified purposes under its regulations: persons who transport cannabis, DPI researchers, inspectors, seed suppliers, denaturers, manufacturers, analysts, the family members of licensees and the employees of authorised persons.

Five regimes (ACT, NSW, Queensland, Tasmania and Victoria) provide for licences which permit the cultivation, possession and/or supply of industrial hemp for research purposes.<sup>83</sup>

Only NSW and Tasmania provide for licences to be granted for up to 5 years; the remaining jurisdictions have a 3 year upper limit.

## Licence eligibility

One of the key differences between the different regulatory regimes lies in the conditions which **must** or **may** be satisfied prior to a licence being granted. The number and types of conditions vary between regimes; Tasmania, the newest

<sup>83</sup> The following regimes provide for licences which permit the cultivation, possession and/or supply of cannabis with THC concentrations higher than the regulatory limit for industrial hemp for research purposes: ACT, Queensland, NSW, Tasmania, Victoria and Western Australia.



regime, has the fewest specific conditions and is the least onerous regime.

**Table 3: Licence eligibility – taking criminal records into account**

Condition	Jurisdiction	Must not issue licence	May not issue licence
Found guilty of drug-related offence	ACT	Applicant (last 5 years)	-
	NSW	Applicant or close associate (no time limit)	-
	QLD	Applicant (last 10 years)	-
	TAS	-	Applicant (no time limit)
	WA	Applicant or close associate (last 10 years)	-
	VIC	Applicant or close associate (last 10 years)	-
Found guilty of relevant offence	ACT	-	Applicant (relevant offence <sup>84</sup> ; no time limit)
	NSW	-	Applicant or close associate (relevant offence <sup>85</sup> ; no time limit)
	QLD	Applicant (serious offence <sup>86</sup> ; last 10 years)	Applicant (offence against Act; no time limit)
	TAS	-	Applicant (relevant offence <sup>87</sup> ; no time limit)
	WA	-	-
	VIC	Applicant or close associate (serious offence <sup>88</sup> ; last 10 years)	-

The applicant's criminal record is a condition common to every regime; in some cases, the criminal record of an applicant's close associates is also of relevance (see Table 3). At one end of the spectrum, Tasmania does not prohibit possession of a licence by a person found guilty of a drug-related offence or another relevant offence. Rather, the Secretary **may** refuse to grant a licence to such a person. At the other end of the spectrum, NSW prohibits the possession of a licence by a person who has either been found guilty of a drug-related offence at any point in time or who has a close associate who has been found guilty of a drug-related offence at any point in time. The other four jurisdictions

<sup>84</sup> Offence against the Act, the *Drugs of Dependence Act 1989* or an offence under Chapter 4 of the *Medicines, Poisons and Therapeutics Goods Act 2008*

<sup>85</sup> An offence that, in the opinion of the Director-General, makes the person or close associate unsuitable to be concerned in or associated with the cultivation or supply of low-THC hemp

<sup>86</sup> An offence involving fraud or dishonesty punishable by 3 or more years imprisonment, an offence involving the threatened use of violence punishable by 3 or more years imprisonment, extortion, official corruption, official corruption not judicial but relating to offences, unlawful homicide, attempt to murder, rape, attempt to commit rape, kidnapping, kidnapping for ransom, or extortion

<sup>87</sup> An offence that, in the opinion of the Secretary, makes the person unsuitable to be involved in the possession, cultivation or supply of hemp or industrial hemp

<sup>88</sup> An indictable offence involving dishonesty or fraud where the maximum penalty exceeds 3 months imprisonment

place a time limit on when a person has to have been found guilty of an offence: 5 years in the case of the ACT; and 10 years in the case of Queensland, Western Australia and Victoria. Queensland and Victoria also prohibit possession of a licence by a person found guilty of a range of other serious offences, including fraud, dishonesty, official corruption and unlawful homicide (see footnotes to Table 2 for full lists).

Except for Tasmania, every jurisdiction requires the characteristics of an applicant's **close associates** to be, at minimum, considered when deciding whether to grant a licence. Western Australia does not define close associate in its legislation. The ACT, NSW, Queensland and Victoria define a close associate as someone who can exercise significant influence over the conduct of the business because they hold or will hold either a relevant financial interest or can or will be able to exercise a relevant power in the business (see Appendix 1 for full definitions). Victoria also includes relatives in its definition of close associate, where relative means spouse, parent, child or sibling. In the case of NSW, Western Australia and Victoria, the criminal record of an applicant's close associates must, at minimum, be considered when deciding whether to grant a licence (Table 3).

The other condition common to every regime is that the applicant, and in some cases their close associates, is a suitable person and/or person of good repute (see Appendix 1). Western Australia has the least requirements in this regard, requiring that the decision-maker take into consideration whether the applicant is a suitable person and is of good repute. In contrast, NSW prohibits possession of a licence if the applicant and their close associates are not both suitable persons and persons of good repute.

A range of other conditions may also need to be taken into account (see Appendix 1). These include the possession of appropriate qualifications or experience for applications seeking to grow hemp for scientific purposes and proof that the applicant has sufficient material, human and financial resources. NSW, Queensland and Tasmania also allow the decision maker to take into consideration any other grounds that they may consider appropriate.

## Penalties

All jurisdictions provide for the suspension or cancellation of a licence. Some jurisdictions provide for additional penalties in the case of breach of licence. In Queensland, there is no financial penalty for breach of licence. The ACT, Victoria and Western Australia impose fines of up to \$15,000, \$15,167 and \$10,000 respectively. NSW and Tasmania impose a fine of up to \$11,000 and \$15,400 respectively and/or imprisonment for up to 2 years.

### 4.3 Recent developments in Tasmania

Prior to the introduction of the [Industrial Hemp Act 2015](#), industrial hemp in Tasmania was regulated by two statutes: the [Poisons Act 1971](#); and the

[Misuse of Drugs Act 2001](#). The [Poisons Act 1971](#) permitted the cultivation of 'Indian Hemp'<sup>89</sup> under annual licence<sup>90</sup>, where the plant and leaf material contained no more than 0.35% THC (dry weight). The seed was not restricted under the Act or Regulations once it was subjected to a process that caused its denaturation e.g. dehulling, and was below the specified level of THC (50mg/kg), although it could not be used for human consumption. Similarly, once the oil was below the required 50 mg/kg THC content it was also exempt. The remaining product (fibre) of a low-THC crop was not subject to any restrictions or scheduling once the seed was removed, and could be used for any products that the grower wished.<sup>91</sup> The penalty for growing Indian Hemp without a licence or breaching licence conditions was a fine of up to \$7,700 and/or imprisonment for up to 2 years.

No provisions were made in the *Poisons Act 1971* with regard to the conditions that had to be met by an applicant who applied for a licence. However, a set of Guidelines set out some requirements for growers, wholesalers and manufacturers:

Growers:

- Obtain a police check;
- Obtain police endorsement of the growing site, where consideration is given to site security and accessibility; and
- Submit application form, together with name of licensed wholesaler to whom seed will be supplied.

Wholesalers/manufacturers:

- Obtain a police check; and
- Submit application form with required fee.<sup>92</sup>

The [Misuse of Drugs Act 2001](#) provided for the regulation of controlled plants. While the Act did not affect any provisions made by or under the *Poisons Act 1971*, it did give police the ability to prosecute people who cultivated cannabis without the appropriate licence.<sup>93</sup>

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<sup>89</sup> As of 14 January 2016, the Act defined Indian Hemp as (a) any plant or part of a plant of the genus *cannabis*; (b) the resin, whether crude or purified, obtained from any plant or part of a plant of the genus *cannabis*; or (c) any preparation containing any such resin – by whatever name that plant, part, resin, or preparation may be called, and includes the achene or seed of any such plant but does not include any fibre of any such plant from which the resin has been extracted (s3)

<sup>90</sup> Clause 87, [Poisons Regulations 2008](#)

<sup>91</sup> AgriGrowth Tasmania, [Report to the Minister on the Options for Future Management of Industrial Hemp](#), Department of Primary Industries, Parks, Water and Environment, October 2014, p.4

<sup>92</sup> AgriGrowth Tasmania, [Industrial Hemp: Guidelines for the production of industrial hemp in Tasmania](#), Interim Guidelines, Department of Primary Industries, Parks, Water and Environment, July 2014, 9pp

<sup>93</sup> AgriGrowth Tasmania, [Report to the Minister on the Options for Future Management of](#)

On 14 March 2012, the Tasmanian House of Assembly Standing Committee on Environment, Resources and Development was tasked with holding an inquiry into the Tasmanian industrial hemp industry. At the same time, the House also resolved that:

(1) The State's position to be advocated nationally through the Food Standards Australia and New Zealand mechanism is that the sale of hemp as a food should be allowed in the upcoming year.

(2) The Minister commits that following a national resolution has been achieved, to move at the earliest opportunity to amend the Poisons Act 1971.<sup>94</sup>

The inquiry's 2013 report made a number of recommendations, the most relevant of which are as follows:

#### Recommendation 1

The Committee recommends that the State Government lobby the Legislative and Governance Forum on Food Regulation for the removal of the ban on the use of low THC hemp in food.

#### Recommendation 2

The Committee recommends that a simpler regulatory regime be introduced, for example, one that is a notification/registration system, where a grower simply registers on a database where and when the grower intends to grow a low THC industrial hemp crop, and pays a levy to cover the costs of random testing of industrial hemp crops for THC levels.

#### Recommendation 3

The Committee recommends, as part of a new, streamlined notification/registration system, that restrictions on where industrial hemp crops can be grown be removed.

#### Recommendation 5

The Committee recommends that the allowable THC content in grown material in Tasmania should be 1%, from hemp seed certified to produce plants with no more than 0.5% THC.

#### Recommendation 6

The Committee recommends that there should be a consistent THC threshold for low THC industrial hemp across all Australian jurisdictions, that being the upper limit of 1% in grown plant material, grown from seed stock certified to

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[Industrial Hemp](#), Department of Primary Industries, Parks, Water and Environment, October 2014, 24pp

<sup>94</sup> Tasmanian House of Assembly Standing Committee on Environment, Resources and Development, op. cit., p.2

produce plants containing no more than 0.5% THC content.<sup>95</sup>

In response to the Inquiry recommendations, the Tasmanian Minister for Primary Industries and Water requested that AgriGrowth Tasmania report on ways to reduce red tape and simplify the regulation of the industrial hemp industry in Tasmania. In October 2014, AgriGrowth Tasmania released the [Report to the Minister on the Options for Future Management of Industrial Hemp](#) (the Report). Amongst other things, the Report investigated several regulatory options and made some findings on the matter. The regulatory options investigated included continued regulation under the *Poisons Act 1971* with simplified licence conditions and processes and the creation of specific purpose legislation.

On 22 September 2015, the [Industrial Hemp Bill 2015](#) was introduced in the House of Assembly. While the intention of the Bill was to “cut red tape to support industry growth”, the Minister nevertheless felt it important to note at length that it would not compromise enforcement of illicit cannabis:

Before discussing the detail of the bill, there are two matters on which I would like to reassure the House. First, I wish to emphasise very strongly that this bill in no way condones the use of illicit cannabis. Supporting commercial production of industrial hemp has no bearing on the argument to legalise cannabis for medicinal purposes or any other purpose. The Government supports the medicinal cannabis clinical trials being led by NSW but this matter is outside the scope of this legislation.

Second, the Government recognises that there are legal concerns associated with growing industrial hemp that must be addressed. While industrial hemp approved for growing under the provisions of this act has no value as a drug, it is visually indistinguishable from illicit varieties of cannabis. Appropriate regulatory controls must be in place to ensure that the expansion of the industrial hemp industry does not compromise Tasmania Police's ability to enforce illicit cannabis use. The bill, which has been developed in consultation with Tasmania Police, establishes a strong regulatory framework that will support expansion of the industrial hemp industry without compromising or hindering drug law enforcement.<sup>96</sup>

The [Bill](#) provided that the Secretary **must not** grant a licence to an applicant if they have been found guilty of a drug-related offence, with no time limit given.<sup>97</sup> This was amended to provide that the Secretary **may** refuse to grant a licence to a person found guilty of a drug-related offence.

The Act came into force on 2 March 2016, together with the [Industrial Hemp Regulations 2016](#). It introduced several key regulatory changes:

- The concentration of THC permissible in the plant and leaf material increased from 0.35% to 1%;

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<sup>95</sup> Ibid., pp.10-11

<sup>96</sup> [Tasmanian House of Assembly PD](#), 24 September 2015

<sup>97</sup> Clause 8(2)

- The licence period was extended from one to five years; and
- The maximum financial penalty for breaching licence conditions was increased from \$7,700 to \$15,400.

#### 4.4 Northern Territory and South Australia

Industrial hemp cultivation is prohibited in the Northern Territory. Cannabis is listed under Schedule 2 of the [Misuse of Drugs Act](#) (NT), which identifies dangerous drugs and prohibited plants for the purposes of the Act. More specifically, cannabis oil, cannabis plants, cannabis plant material (being any part of the cannabis plant, including the flowering or fruiting tops, leaves, stalks and seeds), cannabis resin and cannabis seeds are listed under Schedule 2.

The [Misuse of Drugs Act](#) (NT) provides an exception for possession of specific hemp products, namely:

- Processed fibre products that do not contain more than 0.005% THC or whole cannabis seeds, and which are not in a form suitable for ingestion, smoking or inhaling purposes (s 4A);
- A processed product made of cannabis seeds that does not contain more than 0.005% THC or whole cannabis seeds (s 4A); and
- Hemp seed oil containing no more than 0.005% THC, when labelled “Not for internal use” or “Not to be taken” (Schedule 2).

These provisions were introduced in 1999 to bring the legislation in line with the national approach to hemp products.<sup>98</sup> In October 2015, the NT Department of Primary Industry began investigating the costs and benefits of legalising industrial hemp and potential interest amongst producers in growing industrial hemp.<sup>99</sup> In April 2016, the Department planted the first trial crop of industrial hemp in the NT.<sup>100</sup>

Under the [Controlled Substances Act 1984](#) (SA), industrial hemp cultivation is prohibited in South Australia except for research purposes (s 56). Unlike the Northern Territory regime, the only exception for possession of hemp-based products in South Australia is for hemp seed oil containing no more than 0.005% THC, when labelled “not for human internal use or consumption”, or products containing hemp seed oil that contain no more than 0.005% THC ([Controlled Substances \(Controlled Drugs, Precursors and Plants\) Regulations 2014](#), Schedule 1).<sup>101</sup>

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<sup>98</sup> They were introduced by the [Misuse of Drugs Amendment Bill 1999](#); *NT PD*, [Second Reading Speech](#), 23 February 1999

<sup>99</sup> *ABC News*, [Northern Territory Government mulling over future hemp industry](#), 16 October 2015

<sup>100</sup> *ABC News*, [Northern Territory's first industrial hemp trial underway in Katherine](#), 22 April 2016

<sup>101</sup> The Regulations define hemp seed oil as oil obtained by cold expression from the seeds of cannabis (cl 3).

#### 4.5 Commonwealth legislation and the bi-national food regulation system

Australia is a party to three international treaties that concern, in part, the control of cannabis drug use:

- The [Single Convention on Narcotic Drugs](#) (1961) which specifies the obligations of signatory states for narcotic drugs listed in schedules annexed to the Convention (including cannabis);
- The [Convention on Psychotropic Substances](#) (1971); and
- The [United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances](#) (1988).

A number of Commonwealth laws impact on the cultivation, production and use of cannabis and cannabis products in Australia:

- The availability of cannabis as a therapeutic substance is regulated under the *Therapeutic Goods Act 1989*;
- Cannabis is listed under the [Poisons Standard](#) (which is incorporated into State and Territory legislation) as a Prohibited Substance, except as processed hemp fibre containing 0.1 per cent or less of THC and products manufactured from such fibre;
- The manufacture of narcotic drugs including cannabis is controlled under the *Narcotic Drugs Act 1967*;
- The import and export of cannabis into and out of Australia is regulated under the *Customs Act 1901* and the Customs (Prohibited Imports) Regulations 1956 and Customs (Prohibited Exports) Regulations 1958; and
- Offences relating to the cultivation, import and export, possession of controlled plants and drugs (including cannabis) are found in the *Crimes (Traffic in Narcotic Drugs and Psychotropic Substances) Act 1990* as well as Part 9.1 of the *Criminal Code Act 1995*.<sup>102</sup>

On 29 February 2016, the [Narcotic Drugs Amendment Act 2016](#) (Cth) received assent from the Governor-General. This Act amends the [Narcotic Drugs Act 1967](#) to introduce a licensing scheme for the cultivation of cannabis for medicinal and related scientific purposes. The scheme has a number of key features:

- Two cannabis licences, one that authorises the cultivation of cannabis for manufacture into medicinal cannabis products, the second that authorises research into the cannabis plant that is to be used for

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<sup>102</sup> Senate Legal and Constitutional Affairs Legislation Committee, [Regulator of Medicinal Cannabis Bill 2014](#), August 2015, 90pp. See also the [Explanatory Memorandum](#) for the Narcotic Drugs Amendment Bill 2016, which includes the Regulation Impact Statement on access to cannabis for medical and scientific purposes.

medicinal purposes; and

- A strict ‘fit and proper person’ test that will be applied to the applicant and relevant business associates and involve consideration of a range of matters including criminal history, connections, associates and family, financial status, business history and capacity to comply with licensing requirements.

According to the media release which announced passage of the Bill through Parliament:

“A national regulator will allow the Government to closely track the development of cannabis products for medicinal use from cultivation to supply and curtail any attempts by criminals to get involved,” Ms Ley said.

“The legislation also ensures Australia meets all of its international obligations under the *Single Convention on Narcotic Drugs*.”

...

... Ms Ley also announced the Department of Health, in conjunction with the TGA [[Therapeutic Goods Administration](#)], was currently well-advanced in having cannabis for medicinal purposes considered for down-scheduling to Schedule 8 of the Poisons Schedule.

“This will simplify arrangements around the legal possession of medicinal cannabis products, placing them in the same category as restricted medicines such as morphine, rather than an illicit drug. This will in turn reduce any barriers to access, no matter what state a patient lives in,” Ms Ley said.

The TGA undertook public consultation on down-scheduling cannabis for medicinal purposes in January 2016, with an interim decision due in March 2016.<sup>103</sup>

On 5 April 2016, the TGA announced its interim decision: it would down-schedule both cannabis and tetrahydrocannabinols from Schedule 9 to Schedule 8 to make it available for human therapeutic use, subject to certain restrictions.<sup>104</sup>

The food regulation system is a bi-national arrangement involving the Commonwealth, State and Territory Governments and the New Zealand Government. It is established under the [Inter-Governmental Food Regulation Agreement](#), which was first signed by all Australian Governments in 2000, and the [Agreement between the Government of Australia and the Government of New Zealand establishing a System for the Development of Joint Food](#)

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<sup>103</sup> The Hon Sussan Ley MP, [Historic medicinal cannabis legislation passes Parliament](#), Media Release, 24 February 2016

<sup>104</sup> Therapeutic Goods Administration, [Reasons for scheduling delegate’s interim decision and invitation for further comment for the ACMS meeting, March 2016 \(Cannabis\)](#), 5 April 2016 [online – accessed 6 May 2016]



Standards.<sup>105</sup> The system has three major components:

1. Policy development by the [Australia and New Zealand Ministerial Forum on Food Regulation](#), based on the advice of the [Food Regulation Standing Committee](#) (FRSC);
2. Standards development by [Food Standards Australia New Zealand](#) (FSANZ), which is established under the [Food Standards Australia New Zealand Act 1991](#); and
3. Administration of food legislation.<sup>106</sup>

Under [Standard 1.4.4 – Prohibited and Restricted Plants and Fungi](#) of the [Food Standards Code](#) developed by FSANZ:

... all *Cannabis* species are currently prohibited from being added to food or sold as food. An exception to this prohibition exists in New Zealand where hempseed oil is permitted to be sold as a food. The New Zealand *Food (Safety) Regulations 2002* include a provision to permit the sale of hempseed oil as a food in New Zealand. Other hemp food products are not permitted in New Zealand and remain subject to the prohibition in the Standard.<sup>107</sup>

The Food Standards Code is applied in the States and Territories through an Act of each State and Territory; in NSW, the relevant statute is the [Food Act 2003](#). The next chapter provides an overview of two attempts to have Standard 1.4.4 changed to permit human consumption of food products from industrial hemp.

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<sup>105</sup> Commonwealth Department of Health, [The Food Regulation System](#), 7 January 2016 [online – accessed 14 January 2016]

<sup>106</sup> SA Health, [Food Act Report](#), Year ending 30 June 2013, 2013, p.4

<sup>107</sup> FSANZ, [Approval Report – Application A1039: Low THC hemp as food](#), 8 November 2012, p.5

## 5. INDUSTRIAL HEMP AS A FOOD

Two applications lodged in 1998 and 2009 sought amendment to the Food Standards Code in order to permit the use of low THC hemp as a food. Neither application was successful. On both occasions, while Food Standards Australia New Zealand (FSANZ) recommended removal of the prohibition on using low THC hemp as a food, the relevant Ministerial Forum rejected the proposal. As of May 2016, the Australia and New Zealand Ministerial Forum on Food Regulation has commissioned studies on the four reasons why it rejected the most recent FSANZ proposal. It expects to review these studies in the second half of 2016. It has also tasked FSANZ with developing a draft proposal on how low THC hemp could be legally designated as a food.

This chapter sets out the details of these applications, the reasons for their rejection and the current state of play (see Appendix 2 for a timeline of developments). It finishes by briefly outlining the health benefits of hemp.

### 5.1 Applications to make hemp food legal in Australia

In July 1998, Ecofibre Industries Association of Australia submitted an application to the Australia New Zealand Food Authority (ANZFA, now [Food Standards Australia New Zealand](#) (FSANZ)) which sought amendment of the [Australia New Zealand Food Standards Code](#) (the Food Standards Code) to permit the use of products from low-THC *Cannabis* spp., such as hemp seed and hemp seed oil, as food. In April 2002, ANZFA released a [final assessment report](#) which covered a number of regulatory options, assessing the potential impact of each on all sectors of the community, including consumers, the food industry and government in both Australia and New Zealand. The report made several conclusions on the matter, including that:

There are no public health and safety concerns associated with the use of food products containing derivatives of industrial hemp, provided there is compliance with the proposed maximum levels for THC in hempseed, oil derived from hempseed and other products derived from industrial hemp.<sup>108</sup>

ANZFA therefore recommended removal of the total prohibition on the use of cannabis in food and the establishment of maximum levels for THC in specified foods. In response, the Australia New Zealand Food Standards Council decided:

... to retain the total prohibition on the use of industrial hemp as a novel food. Ministers believe that the use of hemp in food may send a confused message to consumers about the acceptability and safety of *Cannabis*. There are also concerns about law enforcement issues, particularly from a policing perspective there are difficulties in distinguishing between high THC *Cannabis* and low THC hemp products.<sup>109</sup>

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<sup>108</sup> Australia New Zealand Food Authority, [Application A360 – Use of Industrial Hemp as a Novel Food](#), Final Assessment Report [Inquiry – S.17], April 2002, p.18

<sup>109</sup> [Australia New Zealand Food Standards Council Joint Communiqué 24<sup>th</sup> May 2002](#), last

A [new application](#) to have industrial hemp products accepted as a food under the Food Standards Code (specifically [Standard 1.4.4 – Prohibited and Restricted Plants and Fungi](#)) was submitted to FSANZ on 4 December 2009 by Dr Andrew Katelaris. Two years later, FSANZ released its [assessment report](#), together with supporting documents including a cost benefit analysis (Appendix 3). In October 2012, FSANZ decided to approve a draft variation of the Food Standards Code permitting consumption of low-THC hemp seed and seed oil as a food, in accordance with the FSANZ objectives in the [Food Standards Australia New Zealand Act 1991](#) and for the following reasons:

- A detailed risk assessment has not identified any public health and safety concerns associated with the consumption of hemp foods.
- The variation offers the best balance between the potential benefits to consumers and industry and potential costs for government and law enforcement agencies.
- The variation is consistent with the section 18 objectives of the FSANZ Act.
- The variation is based on appropriate risk management measures for matters considered to be within the scope of considerations that FSANZ can take account of when developing a food regulatory measure.<sup>110</sup>

The COAG Legislative and Governance Forum on Food Regulation (now the [Australia and New Zealand Ministerial Forum on Food Regulation](#) (the Forum)) asked FSANZ to review their decision, on the grounds that the draft Standard:

- Does not protect public health and safety, with specific reference to:
  - The impact on drug reduction strategies;
  - Issues concerning the marketing of hemp foods;
  - The impact of hemp foods on roadside drug testing; and
- Is difficult to enforce or comply with in both practical and resource terms, with specific reference to:
  - Distinguishing between hemp and illicit cannabis;
  - Whether the current use of low-THC hemp oil in Australia for purposes other than human consumption has caused any difficulties for law enforcement agencies, marketing or workplace occupational health and safety drug testing;
  - Consistency with international drug control conventions; and
  - Consistency with domestic legislation.<sup>111</sup>

In December 2014, FSANZ addressed these matters in its review in detail

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updated 8 August 2002 [online – accessed 19 January 2016]

<sup>110</sup> FSANZ, [Approval Report – Application A1039: Low THC Hemp as a Food](#), 8 November 2012, p.35

<sup>111</sup> FSANZ, [Review – Application A1039: Low THC Hemp as a Food](#), 16 December 2014, p.2

(Appendix 4) and re-affirmed its approval of the variation to Standard 1.4.4 to permit consumption of low THC hemp seed and seed oil as a food, subject to maximum levels of THC. In January 2015, the Forum [resolved](#) to reject the proposed variation to Standard 1.4.4. The Forum noted that:

... FSANZ found that foods derived from the seeds of low THC hemp do not present any safety concerns as food, and that concerns regarding the impact on police THC drug testing fall beyond the remit of FSANZ.

Several concerns were raised by some Forum Members, including law enforcement issues, particularly from a policing perspective in relation to roadside drug testing, cannabidiol levels as well as the marketing of hemp in food may send a confused message to consumers about the acceptability and safety of Cannabis.

The Forum agreed that further work would be undertaken promptly to consider law enforcement, roadside drug testing and marketing concerns in consultation with relevant Ministers.<sup>112</sup>

According to the NSW Food Authority's 2014-15 Annual Report:

... the Forum rejected the application for reasons unrelated to food safety and instructed the Food Regulation Standing Committee (FRSC) to investigate the information gaps responsible for the rejection.

The Food Authority is leading work on one of these information gaps and is investigating cannabidiol and other cannabinoid concentrations in low-THC hemp products. Work on other information gaps is being led by Victoria, the Commonwealth and New Zealand. Tasmania is coordinating these efforts across all four areas of work, with findings to be reported to the Ministerial Forum in 2016 to determine if a standard permitting low THC hemp as a food should be developed.<sup>113</sup>

On 25 February 2016, the Greens MLC, Jeremy Buckingham, moved a motion in support of hemp food products in the NSW Legislative Council.<sup>114</sup> Amongst other things, the motion called upon the Government to work proactively with the Federal and other State and Territory governments to lift the ban on hemp food products in Australia; it was passed by the House with the support of the Animal Justice Party, the Christian Democratic Party and the Labor Party.

The Government opposed the motion on the basis that it was already working proactively on the matter. The Hon Rick Colless, Parliamentary Secretary for Natural Resources and Regional Planning, said that:

The Government is keenly aware that approval of low THC hemp food for human consumption could provide significant economic, trade and employment

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<sup>112</sup> [Australia and New Zealand Ministerial Forum on Food Regulation Communiqué 30 January 2015](#), last updated 30 January 2015 [online – accessed 19 January 2016]

<sup>113</sup> NSW Food Authority, [Annual Report 2014-15](#), Department of Primary Industries, 2015, p.52

<sup>114</sup> *NSW PD*, [Hemp Food Products](#), 25 February 2016, p.6,829

benefits to New South Wales, particularly in rural and regional areas. That is why New South Wales is not only participating but taking a leading role in multijurisdictional efforts to address information gaps relating to hemp foods, with the ultimate goal of assuring Ministers that concerns can be addressed and that hemp foods can be approved for sale.<sup>115</sup>

The Hon Rick Colless also noted that the application to have industrial hemp products accepted as a food was rejected due to four information gaps. These are currently being addressed by four studies:

A consumption study to assess the impact of low THC hemp foods on roadside and other drug testing is being led by Victoria and guided by an expert panel, on which New South Wales is represented. An assessment of concerns regarding the marketing and advertising of hemp food is being led by New Zealand. A review of legal and treaty issues is being led by the Australian and New Zealand Governments. An evaluation of cannabidiol [CBD] and other cannabinoids is being led by New South Wales. The work to address marketing concerns, legal and treaty issues and cannabinoid levels has been progressed and will be considered by the standing committee and the forum next month.<sup>116</sup>

None of these studies were ready for consideration by the Forum at its most recent meeting on 31 March 2016. In the interim, the Forum noted:

... an update on the project that is investigating whether the consumption of low-THC hemp as a food could result in a false positive result in any of the roadside drug testing programs currently in use in Australia and in New Zealand. This study is critical to considering whether to permit low-THC hemp as a food and its outcomes will be considered at a future face to face meeting of the Forum, most likely towards the end of the year.

Members acknowledged that there is also a range of Commonwealth, New Zealand and State and Territory legislation that currently prohibits the sale of low-THC hemp as a food which would have to be amended before low-THC hemp could be sold as a food. Members agreed that while the other issues are continuing to be investigated each jurisdiction will undertake an extensive audit of their respective legislation.

The Forum noted that at this stage there was no formal proposal to permit low-THC hemp as a food and so Members agreed to task Food Standards Australia New Zealand (FSANZ) to begin work on developing a draft proposal on how, if it was considered appropriate, low-THC hemp could be legally designated as a food.

FSANZ will be provided with the findings of the completed projects and associated policy guidance and will be asked to consider the European Union approach in considering a low-THC limit in food. FSANZ will follow the legislated process that includes a risk analysis and stakeholder consultation and provide their proposal, when ready, to the Forum for consideration.<sup>117</sup>

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<sup>115</sup> Ibid.

<sup>116</sup> Ibid.

<sup>117</sup> Australia and New Zealand Ministerial Forum on Food Regulation, [Communiqué](#), 31 March

In its May 2016 review of the *Hemp Industry Act 2008*, the NSW DPI anticipated a decision by 2017 on whether or not low THC hemp would be approved as a food.<sup>118</sup>

## 5.2 The health benefits of hemp

### 5.2.1 Nutrient assessment

Whole, low-THC hemp seed is a nutritious food containing significant amounts of protein, polyunsaturated fats and dietary fibre, together with micronutrients such as thiamin, vitamin E, phosphorus, potassium, magnesium, calcium, iron and zinc (Table 4). FSANZ noted that hemp seed and hemp seed oil are suitable alternatives to both linseed and soy bean products because of their favourable nutrient profile.<sup>119</sup>

**Table 4: Typical nutritional content (%) of hempseed<sup>120</sup>**

	Whole seed	Seed meal
Oil (%)	35.5	11.1
Protein	24.8	33.5
Carbohydrates	27.6	42.6
Moisture	6.5	5.6
Ash	5.6	7.2
Energy (kJ/100 g)	2200	1700
Total dietary fibre (%)	27.6	42.6
Digestable fibre	5.4	16.4
Non-digestable fibre	22.2	26.2

Hemp seed oil contains the second highest amount of omega-3 fatty acids of all commonly available plant-based oils. 80% of hemp seed's fatty acid profile is polyunsaturated, notably including the essential fatty acids alpha-linolenic acid (omega-3) and linoleic acid (omega-6) in a favourable omega-6 to omega-3 ratio of approximately 3:1 (Figure 4).<sup>121</sup> Polyunsaturated fats play a major role in important biological processes including immune response, blood clotting, vascular dilation and heart rate. Omega-3 fatty acids are required for normal growth and development, and can play a positive role in infant brain and eye development, rheumatoid arthritis, heart disease, diabetes and possibly

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<sup>118</sup> NSW DPI, *Review of the Hemp Industry Act 2008*, May 2016

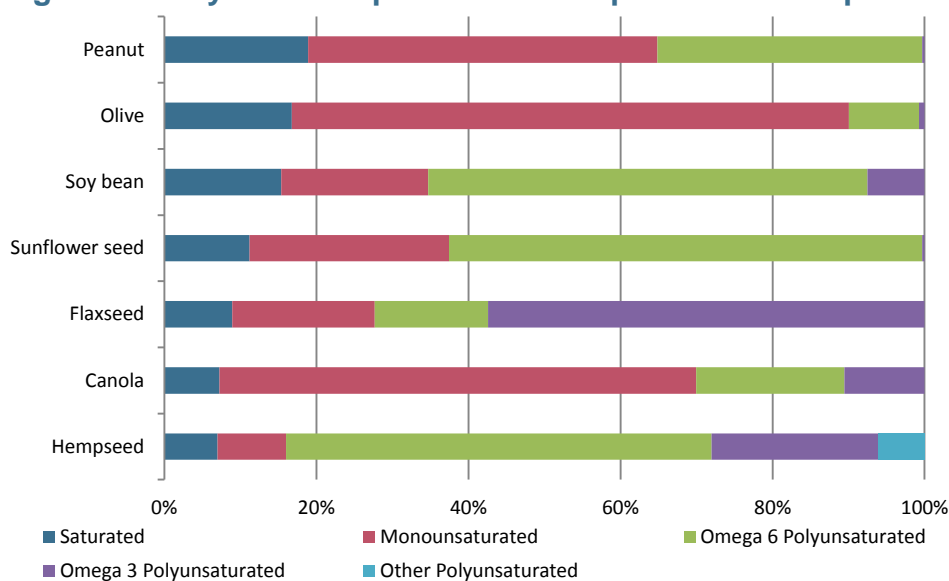
<sup>119</sup> FSANZ, *Supporting Document 1 – Safety assessment (Approval) – Application A1039: Low THC Hemp as a Food*, November 2012

<sup>120</sup> Adapted from: J C Callaway, *Hempseed as a nutritional resource: an overview*, *Euphytica*, 2004, Vol 140(), p.66

<sup>121</sup> FSANZ, *Supporting Document 1 – Safety assessment (Approval) – Application A1039: Low THC Hemp as a Food*, November 2012

cancer.<sup>122</sup>

**Figure 4: Fatty acid composition of hempseed and comparable oils (%)<sup>123</sup>**



Raw hemp seed has omega-6 levels greater than most whole seeds, nuts and soy beans; it has similar levels to pumpkin seeds and less than sunflower seeds and walnuts (Table 5). It also has the second highest level of omega-3 after flaxseed.<sup>124</sup>

**Table 5: Fatty acid and protein content of hempseed and selected foods (g/100 g)<sup>125</sup>**

Food	Fatty acids			Protein
	Saturated	Mono-unsaturated	Poly-unsaturated	
Soy flour, low fat	-	-	-	46.5
Hempseed, meal, defatted	-	-	-	33.5
Hempseed, whole, raw	2.4	3.1	28.5	24.8
Hempseed, hulled, raw	-	-	-	33.0
Hazelnut, raw	2.7	48.8	7.2	-
Walnut, raw	4.4	12.1	49.6	-
Peanut, with skin, raw	7.1	23.1	14.9	24.7
Pumpkin, seed, hulled & dried	8.4	14.1	20.8	24.4

<sup>122</sup> Australia New Zealand Food Authority, op. cit.

<sup>123</sup> Adapted from: Food Standards Australia New Zealand, *Supporting Document 1 – Safety assessment (Approval) – Application A1039: Low THC Hemp as a Food*, November 2012, p.11

<sup>124</sup> Ibid.

<sup>125</sup> Adapted from: Ibid., p.9

Food	Fatty acids			Protein
	Saturated	Mono-unsaturated	Poly-unsaturated	
Sunflower, seed	4.3	9.9	34.5	26.8
Seasame, seed, white	-	-	-	22.2
Almond, with skin	-	-	-	19.5
Flaxseed	3.6	7.5	29.0	18.3
Soy bean, dried, soaked, boiled, drained	1.1	1.2	4.8	13.5
Egg, chicken, whole, raw	-	-	-	12.7
Tofu (soy bean curd), firm, as purchased	-	-	-	12.0
Egg white, boiled	-	-	-	11.6
Egg white, raw	-	-	-	11.2

Whole hemp seed contains approximately 20-25% protein, most of which is rich in essential amino acids. Hemp seed in any form has higher protein content than egg, the traditional animal reference protein. It also has levels equal to or higher than other seed and nut protein sources, being second only to soy flour (Table 5).<sup>126</sup>

### 5.2.2 Hazard and dietary exposure assessment

In its 2002 assessment of low-THC hemp as a food, FSANZ assessed the toxicity of THC following oral administration in order to establish a tolerable daily intake (TDI) of THC. From the literature available at the time, FSANZ derived a TDI of 6 micrograms per kilo of bodyweight (6 µg per kilo bw). For the 2012 assessment, FSANZ reviewed the scientific literature published since 2002 and found that the TDI of 6 µg per kilo bw remains valid. It also found that hemp foods are not known to be allergenic.

FSANZ also conducted a dietary exposure assessment to ensure that the proposed maximum permitted levels of THC within foods containing low-THC hemp would not lead to dietary exposures greater than the TDI. The following THC maximum levels were used in the analysis:

- Hemp seed and hemp flour – 5 mg/kg;
- Hemp oil – 10 mg/kg;
- Hemp-based non-dairy beverages – 0.2 mg/kg; and
- Other foods – 0.2 mg/kg.

FSANZ found that it is likely that no consumers in Australia or New Zealand, of different population groups, would be at risk of exceeding the TDI for THC using the proposed maximum levels.<sup>127</sup>

<sup>126</sup> Ibid.

<sup>127</sup> Ibid.



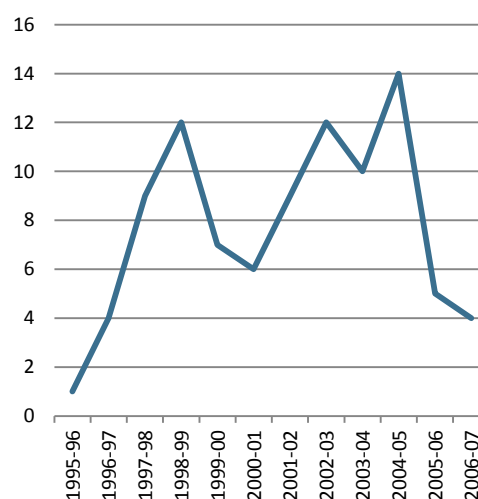
## 6. THE HEMP INDUSTRY IN NSW AND AUSTRALIA

Since the legalisation of commercial industrial hemp production in NSW, the industry has grown relatively slowly: in 2015-16, only 238 ha were planted. Given the size of the industry, very little information is publicly available on its size and development, and the economics of growing hemp in Australia. This chapter sketches out the development of the industry in NSW and summarises a paper on the economics of growing hemp in Australia. It finishes by listing the opportunities and challenges facing the industry, as identified by stakeholders.

### 6.1 Early hemp trials and the current state of the industry

The first Australian hemp trials took place in Tasmania in 1991. The other States followed suit in 1995-96 (NSW, South Australia and Victoria), 1996 (Queensland) and 1997 (Western Australia).<sup>128</sup> The first NSW trial was conducted by Associate Professor Jessop of the University of New England at a site near Armidale, with authorities issued under the *Drug Misuse and Trafficking Act 1985* and the *Noxious Weeds Act 1993*. The trial investigated several varieties of industrial-grade hemp under high security with extensive testing of THC levels.<sup>129</sup> Between 1995/96 and 2006/07, 93 hemp trials were approved in NSW (Figure 5).<sup>130</sup> Not all of these went ahead, owing to factors such as drought conditions in the mid-2000s, and results were mixed for those which did go ahead. The trials were located in the Hunter Valley, Murray Valley, Richmond catchment, Lachlan Valley, Macquarie Valley, Riverina, Far North Coast, Hawkesbury region, at Macquarie University and the University of Western Sydney, and on the Liverpool Plains and the Southern Tablelands.<sup>131</sup>

**Figure 5: Number of hemp trials in NSW, 1995-96 to 2006-07**



Few industrial hemp statistics are publicly available, due to the relatively small amount produced in Australia. As of May 2016, there were 30 industrial hemp licences and 19 active growers in NSW.<sup>132</sup> 238 ha were planted in the 2015-16 season, down from 388 ha in 2014-15 due to the re-working of [Ecofibre's](#) pilot mill (Table 6).<sup>133</sup> In comparison, 6,300,000 ha of crops were grown in NSW. In

<sup>128</sup> No author, [Regional Reports](#), *Journal of the International Hemp Association*, 1997, Vol 4(2)

<sup>129</sup> Tony Windsor, op. cit.; Richard Amery, op. cit.

<sup>130</sup> NSW DPI, [Low-THC hemp in New South Wales](#), PrimeFact 211, Second Edition, April 2007

<sup>131</sup> Ibid.

<sup>132</sup> NSW DPI, [Review of the Hemp Industry Act 2008](#), May 2016, 4pp. On 29 January 2016, there were 36 industrial hemp licences in NSW. NSW DPI, pers. comm., 29 January 2016

<sup>133</sup> NSW DPI, pers. comm., 29 January 2016; Ecofibre Industries Operations, pers. comm., 10

2011-12, 42.0% (78 ha) of the total area planted in Australia for hemp seed production was located in NSW (Table 7).

**Table 6: NSW crop production, selected crops, 2014-15 (ha)<sup>134</sup>**

Crop	2014-15 area (ha)
Industrial hemp	388
Total coarse grains*	1,167,000
Cotton	124,000
Total pulses	360,700
<b>Total crops (summer &amp; winter)</b>	<b>6,300,000</b>

\* Coarse grains: barley, oats, triticale, grain sorghum and corn. No specific 2014-15 data is available for total oilseeds (e.g. canola, peanut, soybeans, sunflower seeds); in 2013-14, 987,400 ha of oilseeds were grown in NSW.

**Table 7: Australian hemp seed production by State, 2011-12<sup>135</sup>**

State	Approximate planted area for seed production	
	Hectares	% of total
NSW	78	42.0%
Victoria	10	5.4%
Queensland	32.5	17.5%
Western Australia	0	0.0%
Tasmania	65	35.0%
<b>Australia</b>	<b>185.5</b>	<b>100.0%</b>

According to the Department of Primary Industries, planting has been approved in 45 localities of NSW. Of these, 21 are located in the Richmond-Tweed region and 7 in the Hunter Valley.<sup>136</sup> The remainder are spread across the Capital Region, Central Coast, Central West, Coffs Harbour – Grafton, Far West & Orana, New England & North West, Riverina and Southern Highlands & Shoalhaven regions of NSW.<sup>137</sup> Figure 6 provides an indication of where industrial hemp may be grown in NSW, and Australia-wide.

No comprehensive statistics on the value of the industrial hemp industry are publicly available. The estimated gross value of Australian hemp production in 2011-12 was \$300,000.<sup>138</sup> In 2014, Hemp Foods Australia estimated that the

February 2016

<sup>134</sup> ABARES, *Agricultural commodity statistics 2015*, December 2015, 235pp; NSW DPI, *pers. comm.*, 29 January 2016; Ecofibre Industries Operations, *op. cit.*

<sup>135</sup> F Crawford et al., *Human consumption of hemp seed: prospects for Australian production*, ABARES, Prepared for Food Standards Australia New Zealand, October 2012, p.4

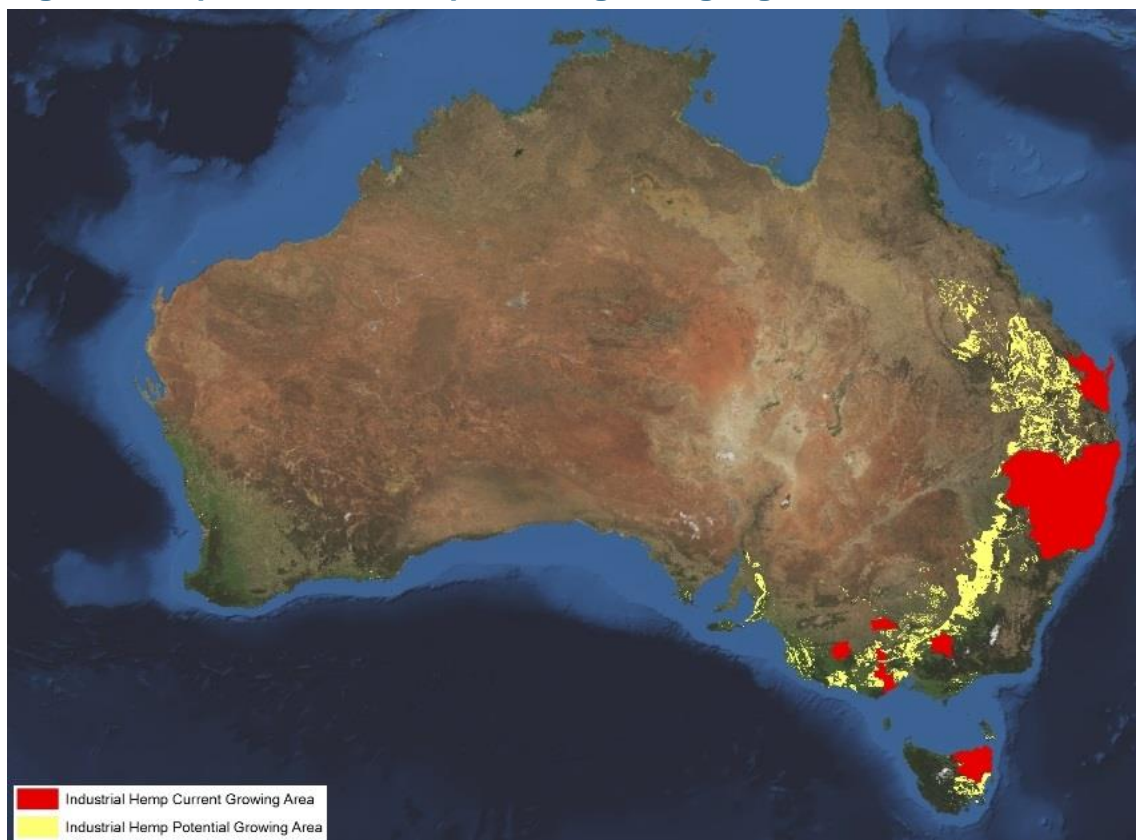
<sup>136</sup> See: ABS, *Australian Statistical Geography Standard (ASGS) Volume 1 – New South Wales Maps, July 2011*, Cat. No. 1270.0.55.001, December 2010, pages 3 & 4

<sup>137</sup> NSW DPI, *pers. comm.*, 29 January 2016.

<sup>138</sup> Rural Industries Research and Development Corporation, *op. cit.*

industry was responsible for \$13 million in trade, and that industry output had grown by 350% between 2012 and 2013.<sup>139</sup>

**Figure 6: Map of current and potential growing regions<sup>140</sup>**



Across Australia, a few large companies dominate the industry, contracting out the growing of industrial hemp to farmers.<sup>141</sup> [Ecofibre Industries Operations](#) established the first hemp fibre mill processing system in the southern hemisphere in the Hunter Valley;<sup>142</sup> a group of Hunter farmers appear to be developing another hemp processing facility at Dungog in the Hunter Valley.<sup>143</sup> In 2014-15, Ecofibre Industries Operations sold approximately \$350,000 of hurd products and \$100,000 of seed oil products. The company is also heavily involved in R&D, conducting research on a broad spectrum of hemp plant science including agronomy, harvesting, processing and new products material science. It expects that the majority of its income over the next 3 to 6 years will come from the export of IP, seed and other technologies, as the domestic industry is still too small for primary producers to participate in raw commodity sales.<sup>144</sup>

<sup>139</sup> The Land, [Hungry for hemp: Industry waits for green light](#), 17 September 2015

<sup>140</sup> Rural Industries Research and Development Corporation, op. cit.

<sup>141</sup> F Crawford et al., op. cit., p.4

<sup>142</sup> Odin Energy, [ASX Announcement: Major expansion in scale of operations for The Hemp Corporation Pty Ltd](#), 9 June 2015

<sup>143</sup> The Land, [Hungry for hemp: Industry waits for green light](#), 17 September 2015

<sup>144</sup> Ecofibre Industries Operations, op. cit.

[Hemp Foods Australia](#), the largest hemp food wholesaler, retailer, manufacturer and exporter in the southern hemisphere, is another significant company in the industry. On 31 October 2012, as a part of the Northern Rivers Jobs Plan, Andrew Stoner, the then Minister for Regional Infrastructure and Services, announced funding for Hemp Foods Australia towards establishment of a manufacturing facility for hemp based food products.<sup>145</sup> In October 2015, Hemp Foods Australia received further government funding, this time from the Commonwealth with an industry grant of \$589,337 under the [Accelerating Commercialisation](#) program for a State of the Art processing plant to extract unique hemp seed products.

## 6.2 The economics of industrial hemp

Limited public Australia-specific data is available on the current economics of growing hemp for fibre, and none is available on growing hemp as food. As a rule, growers need to focus on producing either hemp fibre or hemp seed due to the different growing and harvesting requirements involved.<sup>146</sup> While noting that reliable data on profitability was unavailable, a 2008 DPI report argued that there is potential for industrial hemp to compete with other broadacre summer crops, assuming the availability of appropriate infrastructure as hemp is a bulky commodity that requires specialist processing. It estimated that gross margins (profits) of between \$1,250/ha and \$1,650/ha were achievable, assuming a conservative total stem yield of 10 t/ha (dry weight basis) priced at \$245/t with estimated growing costs of approximately \$800–\$1,200/ha.<sup>147</sup>

As part of its 2009 investigation into making hemp food legal, FSANZ commissioned a [report](#) by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) into the likely change in price and quantity of hemp seed produced and sold in Australia and New Zealand that might result from legalising use of hemp seed for human consumption.<sup>148</sup> The ABARES report included a gross margin analysis for industrial hemp using different yield, price and cost assumptions (Table 8).<sup>149</sup> The estimated cost of growing industrial hemp ranged from \$1,700 to \$2,200 per hectare, including harvesting

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<sup>145</sup> Andrew Stoner, [Jobs plan a major boost for Northern Rivers](#), Media Release, 31 October 2012

<sup>146</sup> Tasmanian Department of Primary Industries, Parks, Water & Environment, [Submission to the Standing Committee on Environment, Resources and Development Inquiry into the Tasmanian Hemp Industry](#), 3 May 2012

<sup>147</sup> NSW Department of Primary Industries, [Industrial hemp – a new crop for NSW](#), Primefact 801, July 2008, 6pp

<sup>148</sup> In December 2015, at the request of Senator David Leyonhjelm, the Commonwealth Parliamentary Budget Office [costed](#) the legalisation of all marijuana/cannabis/hemp use by adults, as well as possession, cultivation, processing, transport, trade, import and export. However, the costing did not include the impact of legalising the production of hemp seed for human consumption because hemp seed consumption in countries where it is legal was considered to be relatively small.

<sup>149</sup> See also the Tasmanian Government submission to the Tasmanian Parliamentary Hemp Industry Inquiry, which provided an indicative hemp seed gross margin of \$1,500/ha, Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit., p.18

and compulsory monitoring and inspection costs. While prices of up to \$3,500 are paid to farmers for hemp seed, ABARES argued that prices are high at present as supply is relatively low. While hemp seed yields of between 400 to 700 kilograms per hectare are typical, industry stakeholders hold that 1 tonne per hectare would be achievable in future.

**Table 8: Indicative gross margins for hemp seed production at various yield, price and cost assumptions<sup>150</sup>**

Price, \$/tonne	Cost \$/ha = \$2,200			Cost \$/ha = \$1,700		
	Yield, t/ha			Yield, t/ha		
	0.5	0.7	1.0	0.5	0.7	1.0
	Gross margin \$/ha			Gross margin \$/ha		
1,600	-1,400	-1,080	-600	-900	-580	-100
2,500	-950	-450	300	-450	50	800
2,800	-800	-240	600	-300	260	1,100
3,500	-450	250	1,300	50	750	1,800

Note: Cost per hectare includes harvesting costs

ABARES noted that, in comparison with various grains and oilseeds gross margins based on NSW 2011 prices (Table 9), hemp seed would be an attractive alternative for NSW producers only with the more optimistic price and yield assumptions.

**Table 9: Gross margin calculations for other NSW crops<sup>151</sup>**

Crop	Grain yield (t/ha)	Gross income (yield x price) (\$/ha)	Total variable costs (\$/ha)	Gross margin (\$/ha)
Canola – low	3.2 (46% oil)	1,581	381	1,199
Canola – high	3.3 (49% oil)	1,604	520	1,085
Lentils – medium	3.2	1,165	331	834
Lupin – medium	3.5	980	319	661
Barley – low	6.3	945	386	559
Wheat – low	4.8	744	319	425
Chickpeas – high	1.8	792	406	386
Wheat – high	5.2	806	539	267

Note: All prices used in the calculations assumed delivery to Junee except canola to Stockinbingal (extra freight cost = \$5 per tonne) and lentils to Victoria (extra freight cost = \$36 per tonne)

The ABARES report considered several scenarios based on consumption trends in the US, upon which it made the following conclusion:

If prices remain high and yields can be increased to reach the levels claimed

<sup>150</sup> F Crawford et al., op. cit., p.5

<sup>151</sup> Ibid., p.5

possible, the returns from producing hemp seed could be higher than for many other crops, and the increased demand could be met from increased domestic production. Under these assumptions, up to an additional 190 tonnes might be produced which, at \$3500 per tonne, would bring an estimated gross revenue of \$665 000 to Australian hemp seed producers. However, if yields remain around present levels, and if world prices return to those seen between 2008 and 2010, Australian farmers may have little incentive to produce any hemp seed. It is possible that most, if not all, of the estimated increase in demand resulting from legalisation would be met from imports, especially if prices proved less favourable or yields proved lower than expected.<sup>152</sup>

### 6.3 Opportunities and challenges

As covered in Chapter 2.3 of this paper, there are a broad range of commercial uses of industrial hemp, including as a food. While the national market for hemp products is relatively small, the international hemp market is currently trending upwards (see Chapter 7 of this paper). Should hemp food be legalised in Australia at some point in the future, the industry could learn from the success of other industries that have established niche markets in Australia in the past decade. For example, the quinoa and chia industries began with products available only in speciality stores and low demand. However, with strong domestic marketing campaigns, both are now stocked in major retail chains.<sup>153</sup>

There is evidence to suggest that hemp seed production may be more feasible than hemp fibre production. Stakeholders have identified several challenges to establishing a hemp fibre industry in NSW:

- There are significant costs in relation to transporting hemp given its very low weight per unit of volume – anecdotal evidence suggests that milling facilities need to be within 50km of the crop;<sup>154</sup>
- Processing hemp for fibre is technically complex and requires significant investment in infrastructure, including processing and storage facilities and purpose built harvesting equipment;<sup>155</sup>
- Processing requires a large volume of dry hemp material as bast fibre is recovered at a rate of 35-40 per cent of the stem – anecdotal evidence suggests a minimum of 2,500 ha is required;<sup>156</sup>
- Evidence suggests that production needs to be on a broad acre basis in order to achieve a viable gross margin;<sup>157</sup>
- Proximity to regional processing is paramount in order to enable growers

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<sup>152</sup> Ibid., p.1

<sup>153</sup> F Crawford et al., op. cit.

<sup>154</sup> Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit.

<sup>155</sup> NSW Department of Primary Industries, [Upper Hunter Region: Hay and Hemp Profile](#), Factsheet No. 7, June 2013; Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit.

<sup>156</sup> Ibid.

<sup>157</sup> Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit.

to sell to the processing facility and the processor to market substantial volumes of fibre to both global and local markets. These markets are primarily major manufacturing industries, requiring large supply capacity rather than entry-level niche production;<sup>158</sup>

- According to Ecofibre Industries, there are few if any manufacturing companies in Australia which use hemp fibre;<sup>159</sup>
- The cost of production in Australia is higher than in other countries by the following amounts: New Zealand (10%); USA (25%); South America (40%); and China (50%). While marginally lower than production costs in the EU, this is because of the EU crop subsidy of €150/ha;<sup>160</sup>
- There are significant cost and availability issues with regards to agricultural services and labour;<sup>161</sup>
- In the Hunter Valley, competing land uses, increasing land use conflicts and competition for water have the potential to limit further investment in the industry;<sup>162</sup> and
- According to hemp growers, potential negative impacts of complex and costly licensing requirements include lost sowing opportunities if approvals are delayed and increased difficulty in finding suitable growing sites due to the requirement of using sites suitably isolated from rural residences.<sup>163</sup>

Hemp seed production has been identified as the way forward in Tasmania. In part, this is because of the first four points listed above with regards to the difficulty of establishing a viable hemp fibre industry. Other reasons include:

- Hemp seed can be harvested using standard equipment;
- Hemp seed transport is less costly because of the lower bulk-to-value ratio; and
- Research suggests that growing hemp for food offers greater market potential and requires significantly less investment in infrastructure.<sup>164</sup>

Another advantage to growing hemp for seed rather than fibre is that manufacturing companies capable of processing hemp seed products are well established in Australia.<sup>165</sup>

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<sup>158</sup> Rural Industries Research and Development Corporation, op. cit.

<sup>159</sup> Ecofibre Industries Operations, op. cit.

<sup>160</sup> Ecofibre Industries Operations, op. cit.; Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit.

<sup>161</sup> Ecofibre Industries Operations, op. cit.; NSW Department of Primary Industries, [Upper Hunter Region: Hay and Hemp Profile](#), Factsheet No. 7, June 2013

<sup>162</sup> NSW Department of Primary Industries, [Upper Hunter Region: Hay and Hemp Profile](#), Factsheet No. 7, June 2013

<sup>163</sup> Ibid.

<sup>164</sup> Tasmanian Department of Primary Industries, Parks, Water & Environment, op. cit.

<sup>165</sup> Ecofibre Industries Operations, op. cit.

## 7. THE HEMP INDUSTRY GLOBALLY

While the industrial hemp industry is far more developed in other countries, there is still no reliable source of aggregated data for worldwide industrial hemp production.<sup>166</sup> Nevertheless, while in recent decades industrial hemp production is much lower than the heights achieved in the 1960s and 1970s, the data suggests that production is trending upwards.

This chapter sets out the most recent international production data for hemp fibre and hemp seed. It also briefly covers international industrial hemp regulatory regimes: the US is the only country where commercial industrial hemp production is currently illegal; and Australia and New Zealand are the only two countries where hemp food products are illegal, although New Zealand allows consumption of hemp oil.

### 7.1 Production

According to the Food and Agriculture Organization of the United Nations (FAO), 40,621 hectares (ha) of hemp were grown worldwide in 2013 (Figure 7). However, this figure is definitely an undercount as the FAO does not include production data for some newer industrial hemp producers, including Australia and Canada. The graph therefore fails to capture what appears to be an upward trend in industrial hemp production. With regards to Canada, for which 2012 and 2013 figures are not publicly available, the area grew from 3,300 ha in 2008 to 15,700 ha in 2011,<sup>167</sup> before apparently reaching 44,000 ha in 2014.<sup>168</sup> European production is also trending upwards: for those European countries for which the FAO collects statistics, the area grew from 5,000 ha in 2013 to 14,600 ha in 2014.<sup>169</sup>

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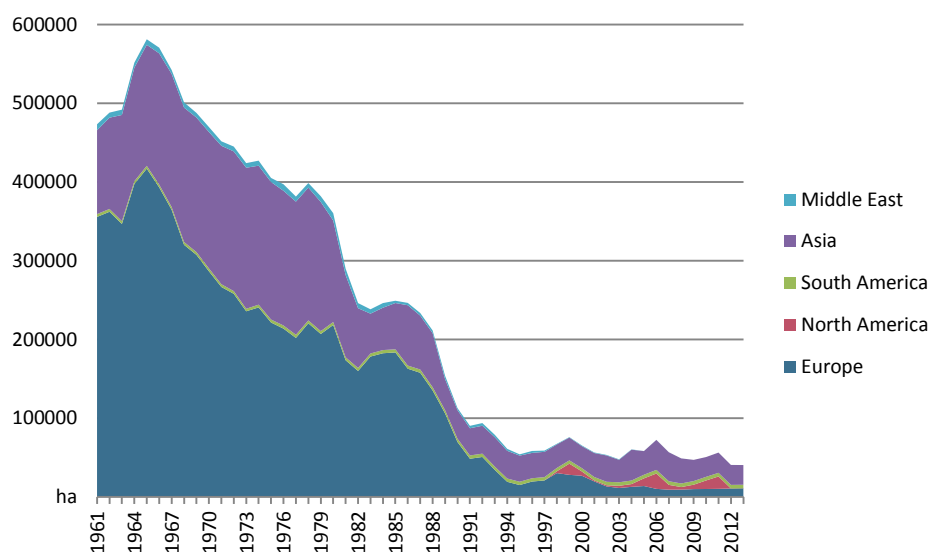
<sup>166</sup> T R Fortenbery, *Industrial Hemp: Opportunities and Challenges for Washington*, Washington State University, WP 2014-10, 2014, 19pp

<sup>167</sup> Alberta Agriculture and Forestry, *Industrial Hemp Production in Canada*, 13 November 2015 [online – accessed 12 February 2016]

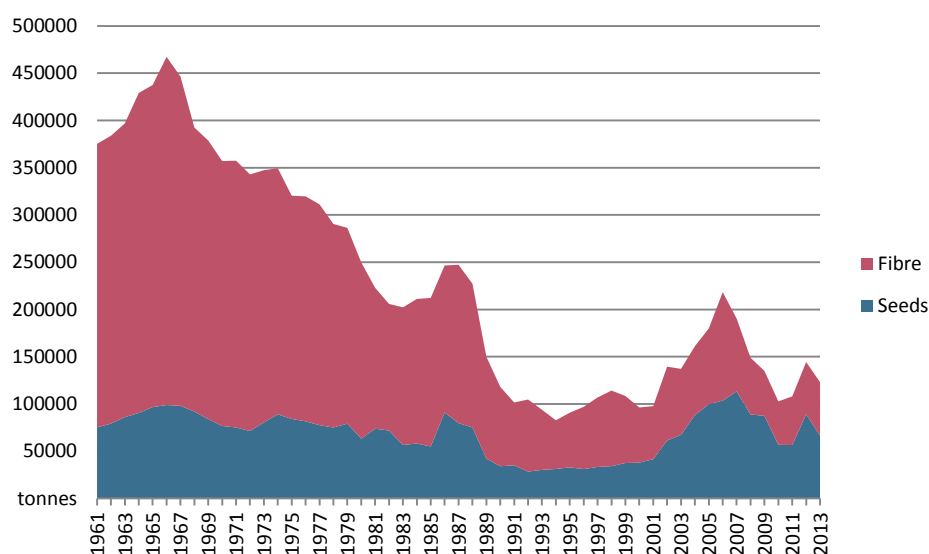
<sup>168</sup> L Sarmiento et al., *Scientific Sound Guidelines for THC in Food in Europe*, nova-Institute, July 2015, 74pp

<sup>169</sup> Source: European Industrial Hemp Association, *Total hemp cultivated area in Europe 2014*, 2015. The European Industrial Hemp Association (EIHA) lists several European countries not counted by the FAO – Croatia, Denmark, Estonia, Germany, Latvia, Lithuania, Slovakia, Slovenia and the UK. In 2014, these countries grew 2,900 ha of industrial hemp. In June 2015, the EIHA [reported](#) that 22,000 ha of hemp were expected to be grown in Europe in 2015.



**Figure 7: Global industrial hemp production, area grown, 1961 to 2013<sup>170</sup>**

Peak global industrial hemp production was reached in 1966 when 467,300 tonnes of fibre and seed were produced (Figure 8). Production reached its lowest figure in 1994 (82,800 tonnes) and totalled 123,100 tonnes in 2013. In 1961, fibre accounted for 80% of total hemp tonnage produced; by 2013 this had dropped to 46%. Note that, as with Figure 7, this is an underestimate of total global production.

**Figure 8: Global industrial hemp production, fibre and seeds, 1961 to 2013<sup>171</sup>**

China is the leading producer of hemp fibre, having grown 16,000 tonnes in

<sup>170</sup> Source: Food and Agriculture Organization of the United Nations Statistics Division, [FAOSTAT: Download Data](#), 2015 [online – accessed 10 February 2016]

<sup>171</sup> Source: Ibid.

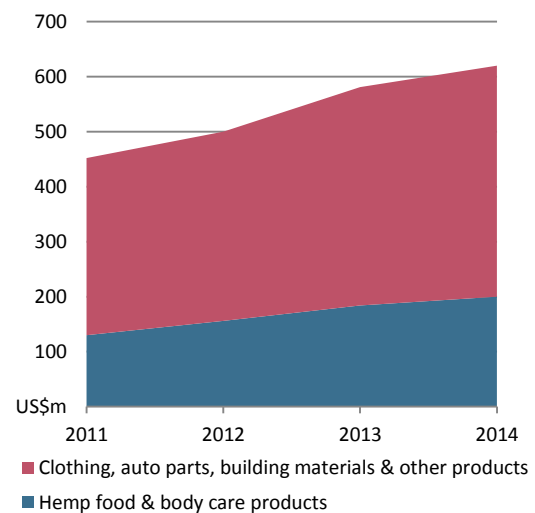
2013 (Table 10). Until 2002, it was also the leading producer of hemp seeds. Since 2002, France has led hemp seed production – it produced 48,264 tonnes in 2013.

**Table 10: Industrial hemp production – top 5 countries, 2013<sup>172</sup>**

Fibre (tonnes)		Seeds (tonnes)	
China	16,000	France	48,264
North Korea	14,000	China	16,000
Netherlands	10,273	Chile	1,450
Chile	4,250	Ukraine	1,000
Romania	3,000	Hungary	600
International total	56,400	International total	66,600

According to the nova-Institute, in Europe in 2014 the market for whole hemp seeds and derived hemp food and feeds products was worth €45 million. This included €15 million generated from EU seeds and €30 million from imported seeds/oils.<sup>173</sup> Also in 2014, the US hemp food and body care market was worth approximately US\$200 million (Figure 9).<sup>174</sup> Including clothing, auto parts, building materials and other products, the total 2014 industrial hemp market in the US was estimated to be worth at least US\$620 million. Between 2011 and 2014, the US hemp market grew at an average annual rate of 11.1%.

**Figure 9: US annual retail sales, 2011 to 2014**



A US Congressional Research Service paper on industrial hemp reviewed a number of studies which investigated the US domestic market potential. Some studies provided a mostly positive market outlook, citing rising consumer demand, the range of product uses, and the

<sup>172</sup> Source: Ibid. Note that these totals are underestimates – see discussion in text. According to the FAO, in 2014 76,900 tonnes of hemp seed were produced.

<sup>173</sup> L Sarmiento et al., op. cit.

<sup>174</sup> Sources: Hemp Industries Association, [2014 Annual Retail Sales for Hemp Products Estimated at \\$620 Million](#), 12 March 2015 [online – accessed 16 February 2016]; Hemp Industries Association, [2013 Annual Retail Sales for Hemp Products Exceeds \\$581 Million](#), 28 February 2014 [online – accessed 16 February 2016]; Hemp Industries Association, [As Momentum Builds for Policy Change, U.S. Market for Products Made from Industrial Hemp Continues to Thrive: 2012 Annual Retail Sales for Hemp Products Hit \\$500 Million](#), 25 February 2013; Hemp Industries Association, [U.S. Market for Hemp Food, Body Care and Other Products Continues to Thrive with 2011 Annual Retail Sales Estimated at \\$452 Million: Data Demonstrates Strong Continued Growth of Market for Industrial Hemp in U.S. as Lawmakers Consider Legislation to Once Again Allow Hemp Farming](#), 19 September 2012

potential benefits of the removal of current restrictions on hemp cultivation. Other studies were less optimistic, citing uncertainty about long-run demand for hemp products; profitability concerns – hemp being slightly more profitable than traditional row crops, but less profitable than other specialty crops; and the highly speculative estimates of potential profitability. The Research Service paper concluded that:

Given the absence since the 1950s of any commercial and unrestricted hemp production in the United States, it is not possible to predict the potential market and employment effects of relaxing current restrictions on U.S. hemp production.<sup>175</sup>

With regards to the world market, the 3-year average to 2010 for hemp seed trade was 18,300 tonnes and for hemp fibre it was 14,600 tonnes (Table 11). Respectively, these were equivalent to 16.2% and 18.0% of total production. In total, the world market 3-year average for trade in industrial hemp was \$US35.2 million.

**Table 11: Key characteristics of the world market, 3-yr average to 2010<sup>176</sup>**

	Production (t)	World trade (t)	Value (\$US)	Key countries, by share of volume
Hemp seed	113,100	18,300	\$23.5 million	<b>Exporters:</b> Netherlands (38%), France (29%), Spain (8%), Belgium (7%), Germany (5%), Canada (5%), Italy (3%), Russian Federation (1%) <b>Importers:</b> Netherlands (30%), Belgium (18%), Italy (8%), Germany (8%), UK (6%), Chile (5%), Spain (5%), Japan (4%), Sweden (3%)
Hemp fibre	80,900	14,600 (imports)	\$11.7 million	<b>Importers:</b> Spain (46%), Czech Republic (15%), UK (15%), Germany (8%), Switzerland (2%)

## 7.2 Industrial hemp regulatory regimes

### 7.2.1 Growing industrial hemp

The US is the only country where commercial cultivation of industrial hemp is currently illegal, although the situation is relatively complicated and may change in the near future. A US Congressional Research Service [paper](#) sets out the regulatory regime in detail. In summary, under the Controlled Substances Act of 1970, hemp may only be grown with a permit from the US Drug Enforcement Administration (DEA). Although many States have legislation permitting farmers to grow hemp under certain conditions, the DEA generally does not appear to grant hemp growing licences. Even if the DEA granted a licence, the potentially onerous conditions could discourage hemp production; the DEA requires an applicant to demonstrate that an effective security protocol will be in place at the production site, such as security fencing around the planting area, a 24-hour

<sup>175</sup> R Johnson, op. cit., p.9

<sup>176</sup> Adapted from: M Foster and the Agricultural Commodities Section, ABARES, [Emerging animal and plant industries: Their value to Australia](#), RIRDC Publication No 14/069, September 2014, p.103

monitoring system, controlled access, and possibly armed guard(s) to prevent public access.

In 2014, the Federal [Agricultural Act of 2014](#) authorised an institution of higher education or a State department of agriculture to cultivate industrial hemp if:

- cultivated for purposes of research under an agricultural pilot program or other agricultural or academic research, and
- allowed under the laws of the state in which the institution or department is located and the research occurs (s 7606).

Industrial hemp was defined as the plant *Cannabis sativa* L. and any part of such plant, whether growing or not, with a THC concentration of not more than 0.3 percent on a dry weight basis.<sup>177</sup>

Currently, 27 States have legislation that deals with industrial hemp in at least one of three different ways:

- (1) Establishment of commercial industrial hemp programs;
- (2) Establishment of industrial hemp research programs; or
- (3) Authorisation of studies of industrial hemp or the industrial hemp industry.<sup>178</sup>

Some States' laws which establish commercial industrial hemp programs require either a change in federal law or waivers from the DEA before the programs can be implemented by the State.<sup>179</sup>

The Industrial Hemp Farming Act of 2015 ([H.R. 525](#); [S.134](#)) is currently before the 114<sup>th</sup> Congress. This bill was reintroduced from bills introduced in previous Congresses dating back to the 109<sup>th</sup> Congress. If enacted, it will facilitate the commercial production of industrial hemp in those States which permit commercial production. The bill proposes amendment of the Controlled Substances Act of 1970 to exclude industrial hemp from the definition of marijuana.<sup>180</sup> As of 13 May 2016, the bill remains with the Senate Committee on the Judiciary and the House of Representatives Subcommittee on Health.<sup>181</sup>

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<sup>177</sup> R Johnson, op. cit.

<sup>178</sup> National Conference of State Legislatures, [State Industrial Hemp Statutes](#), 10 February 2016 [online – accessed 18 February 2016]

<sup>179</sup> Ibid. In 2015, the Hemp Industries Association estimated that 741 ha of industrial hemp were licensed in the US “within the parameters of state agriculture departments and research institutions”; however, only 51 ha of industrial hemp were planted: Hemp Industries Association, [2014 Annual Retail Sales for Hemp Products Estimated at \\$620 Million](#), 12 March 2015 [online – accessed 16 February 2016]

<sup>180</sup> R Johnson, op. cit.

<sup>181</sup> Congress.gov, [S.134 – Industrial Hemp Farming Act of 2015](#), no date [online – accessed 18 February 2016]

## 7.2.2 Hemp as food

Consumption of hemp food products is legal in all countries except Australia and New Zealand, although New Zealand allows consumption of hemp oil (see Chapter 5 of this paper). Countries which permit consumption of hemp food products set either THC guidance values or limits for different food and drink products (Table 12).<sup>182</sup> The THC limits proposed by FSANZ are relatively similar to those used in other countries, and are included in Table 12 for comparative purposes.

**Table 12: THC guidance values and limits in food goods in selected countries**<sup>183</sup>

Country	Circumstances	Seed & flour	Edible oil	Non-alcoholic beverages	Alcoholic beverages	Other food & drink
Australia & NZ	Hemp food prohibited	5 mg/kg	10 mg/kg	0.2 mg/kg		0.2 mg/kg
Austria	THC levels expected to ensure exposure does not exceed 1-2 µg/kg bw/day					
Belgium	Limits set; some products on case by case basis	5 mg/kg	10 mg/kg			
Canada	No more than 10 mg/kg					
Germany	Guidance values		5 mg/kg	0.005 mg/kg	0.005 mg/kg	0.15 mg/kg
Italy	THC expected to be 0					
Netherlands	No specific laws					
Switzerland	Limits set	10 mg/kg	20 mg/kg	0.2 mg/kg	Alcoholic drinks 0.2 mg/kg; Spirits 5 mg/kg	Breads & pastries 2 mg/kg; Vegetable food 1 mg/kg
UK	Case by case basis					
USA	Industry pledge	1.5 mg/kg	5 mg/kg			

<sup>182</sup> See also: FSANZ, [Supporting Document 5 – Australian, New Zealand and international hemp regulations \(at Approval\) – Application A1039: Low THC Hemp as a Food](#), November 2012

<sup>183</sup> Adapted from: L Sarmento et al., op. cit., p.31. See also: FSANZ, [Supporting Document 1 – Safety assessment \(Approval\) – Application A1039: Low THC Hemp as a Food](#), November 2012.

## 8. CONCLUSION

Industrial hemp appears to be a crop with significant potential for NSW and Australia, given the presence of suitable growing conditions and the wide range of products that may be made. Trials first started in 1995/96 and commercial production was legalised by the *Hemp Industry Act 2008*. However, to date the industry has experienced relatively slow growth. A number of possible reasons have been identified as to why this is the case, including the significant infrastructure costs for hemp fibre production, the relative absence of manufacturing companies in Australia capable of using hemp fibre, the potential negative impacts of complex and costly licensing requirements, and the prohibition on using hemp seed as a food.

Some stakeholders argue that hemp seed production for human consumption is the way forward for the industry. Low THC hemp seed has well established health benefits. Its consumption is legal in every country except Australia and New Zealand. This may change in the next 12 months. Ongoing studies are investigating four information gaps identified by the Australia and New Zealand Ministerial Forum on Food Regulation: the impact on roadside and other drug testing; the marketing of hemp food; legal and treaty issues; and cannabinoids in cannabis. The Forum has also tasked Food Standards Australia New Zealand with developing a draft proposal on how low THC hemp could be legally designated as a food. A decision on whether or not low THC hemp will be approved as a food is expected to be made by 2017.

## APPENDIX 1: COMPARISON OF INDUSTRIAL HEMP REGULATORY REGIMES

### Legislation, objects and definitions

	Legislation	Objects	Definition of industrial hemp
ACT	<a href="#">Hemp Fibre Industry Facilitation Act 2004</a>	<ul style="list-style-type: none"> <li>Facilitate the processing, marketing and trade of industrial hemp fibre and fibre products</li> <li>Facilitate the processing, marketing and trade of industrial hemp seed and seed products, other than for consumption or smoking by anyone</li> </ul>	<ul style="list-style-type: none"> <li>Industrial hemp plant: a hemp plant with a THC concentration in its leaves and flowering heads of not more than 1%</li> <li>Certified hemp seed: seed harvested from a plant with a THC concentration in its leaves and flowering heads of not more than 0.5%</li> </ul>
NSW	<a href="#">Hemp Industry Act 2008</a> <a href="#">Hemp Industry Regulation 2008</a>	Long title: An Act to authorise and regulate the cultivation and supply of low-THC hemp for commercial production and other legitimate uses; to amend the <a href="#">Drug Misuse and Trafficking Act 1985</a> ; and for other purposes	<ul style="list-style-type: none"> <li>Low-THC hemp: any plant of the genus Cannabis that has a concentration of THC in its leaves and flowering heads of no more than 1%, and includes the seed of any such plant and any product (such as oil or fibre) derived from any such plant</li> <li>Seed: May only be used if supplied on the basis that it will not produce hemp that has a concentration of THC in its leaves and flowering heads of more than 0.5%</li> </ul>
QLD	<a href="#">Drugs Misuse Act 1986</a> <a href="#">Drugs Misuse Regulation 1987</a>	<ul style="list-style-type: none"> <li>Facilitate the processing, marketing and trade of industrial cannabis fibre and fibre products</li> <li>Facilitate the processing, marketing and trade of industrial cannabis seed and seed products, other than for consumption or smoking by any person</li> </ul>	<ul style="list-style-type: none"> <li>Industrial cannabis plant: a cannabis plant with a THC concentration in its leaves and flowering heads of not more than 1%</li> <li>Certified cannabis seed: seed that will produce cannabis plants with a THC concentration in their leaves and flowering heads of not more than 0.5%</li> </ul>
TAS	<a href="#">Industrial Hemp Act 2015</a> <a href="#">Industrial Hemp Regulations 2016</a>	N/A	<ul style="list-style-type: none"> <li>Industrial hemp: any plant of the Cannabis genus grown from certified hemp seed and with a concentration of THC in the leaves and flowering heads of no more than 1%, as well as the seed of such plant and any product derived from the plant</li> <li>Certified hemp seed: seed that (a) has been tested in accordance with an approved quality assurance program and (b) will, or is likely to, produce hemp plants with a concentration of THC in the leaves and flowering heads of no more than 0.5%</li> <li>Hemp: any plant of the Cannabis genus</li> </ul>
VIC	<a href="#">Drugs, Poisons and Controlled Substances Act 1981</a> <a href="#">Drugs, Poisons and Controlled Substances</a>	N/A	<ul style="list-style-type: none"> <li>Cannabis: A plant or any part of a plant of the genus Cannabis L</li> <li>Low-THC cannabis: Cannabis, the leaves and flowering heads of which do not contain more than 0.35% THC</li> </ul>

	Legislation	Objects	Definition of industrial hemp
	<a href="#">(Industrial Hemp) Regulations 2008</a>		
WA	<a href="#">Industrial Hemp Act 2004</a> <a href="#">Industrial Hemp Regulations 2004</a>	<ul style="list-style-type: none"> <li>Provide for the licensing of persons and partnerships to cultivate, harvest or process industrial hemp</li> </ul>	<ul style="list-style-type: none"> <li>Cannabis: a plant or part of a plant of the Cannabis genus</li> <li>Industrial hemp: a cannabis plant, the leaves and flowering heads of which do not contain more than 0.35% THC</li> <li>Industrial hemp seed: seed certified as having been produced from industrial hemp or which will produce industrial hemp</li> </ul>

### Licence types and penalties for breach of licence

	Licence types and purpose	Length	Penalties*
ACT	<ul style="list-style-type: none"> <li>Category 1 researcher licence: permission to possess, produce or supply to specified persons and for particular purposes the following: (1) industrial hemp plants and seeds (2) hemp plants with THC concentrations between 1% and 3% and (3) hemp plants with THC concentrations of over 3%</li> <li>Category 2 researcher licence: permission to possess, produce or supply to specified persons and for particular purposes the following: (1) industrial hemp plants and seeds and (2) hemp plants with THC concentrations between 1% and 3%</li> <li>Grower licence: permission to possess, produce or supply to specified persons the following: industrial hemp plants and seeds. Permission to possess or produce hemp plants and seed with THC concentrations of over 1% as part of a field trial supervised by a licenced researcher, and permission to supply hemp plants and seed with THC concentrations of over 1% to a licenced researcher</li> </ul>	No longer than 3 years	Breach of licence: \$15,000 (max)
NSW	<ul style="list-style-type: none"> <li>Licence: permission to cultivate or supply low-THC hemp for commercial production, use in a manufacturing process, and/or scientific research, instruction, analysis or study</li> </ul>	No longer than 5 years	Breach of licence: \$11,000 and/or imprisonment for 2 years (max)
QLD	<ul style="list-style-type: none"> <li>Category 1 research licence: permission to possess, produce or supply to specified persons and for particular purposes the following: (1) industrial cannabis plants and seeds (2) cannabis plants with THC concentrations between 1% and 3% and (3) cannabis plants with THC concentrations of over 3%</li> <li>Category 2 researcher licence: permission to possess, produce or supply to specified persons and for particular purposes the following: (1) industrial cannabis plants and seeds and (2) cannabis plants with THC concentrations between 1% and 3%</li> <li>Grower licence: permission to possess, produce or supply to specified persons the following: industrial cannabis plants and seeds. Permission to possess or produce cannabis plants and seed with THC concentrations of over 1% as part of a field trial supervised by a licenced researcher, and permission to supply cannabis plants and seed with THC concentrations of over 1% to a licenced researcher</li> <li>Authorisations: The Regulations authorise persons who transport cannabis, DPI researchers, inspectors, seed suppliers, denaturers, manufacturers, analysts, the family members of licensees and the employees of authorised persons to produce, possess and/or supply</li> </ul>	No longer than 3 years	No financial penalties for breach of licence



Licence types and purpose		Length	Penalties*
cannabis plants and seeds of specified THC concentrations for specified purposes			
<b>TAS</b>	<ul style="list-style-type: none"> <li>Industrial hemp licence: permission to possess, cultivate or supply industrial hemp for any one or more of the following: commercial production; use in any manufacturing process; food production; and scientific research, instruction, analysis or study</li> <li>Special licence: permission to possess, cultivate or supply hemp, that is not industrial hemp, for the purpose of scientific research, instruction, analysis or study</li> </ul>	No longer than 5 years	Breach of licence: \$15,400 and/or imprisonment for 2 years (max)
<b>VIC</b>	<ul style="list-style-type: none"> <li>Authority: Permission, for commercial or research purposes relating to non-therapeutic use, to (1) possess, process, sell or supply cannabis seed harvested from low-THC cannabis (2) cultivate and possess cannabis from seed harvested from low-THC cannabis and (3) possess, process, sell or supply cannabis which is substantially free of leaves and flowering heads and does not contain more than 0.1% THC</li> </ul>	No longer than 3 years	Breach of licence: \$15,167
<b>WA</b>	<ul style="list-style-type: none"> <li>Licence: permission for a person or partnership to cultivate, harvest and/or process industrial hemp</li> </ul>	No longer than 3 years	Breach of licence: \$5,000 Not having licence: \$10,000

\* All jurisdictions also provide for suspension and revocation of licences.

### Licence eligibility: conditions which must or may be met

Jurisdiction (licence type)	Conditions under which a licence must not be granted	Conditions under which a licence may be refused, or which must be considered or taken into account
<b>ACT (Researcher licence)</b>	<ul style="list-style-type: none"> <li>Person, or person in corporation, does not have the necessary educational or other qualifications and experience (s 15)</li> </ul>	n/a
<b>ACT (Researcher or Grower licence)</b>	<ul style="list-style-type: none"> <li>Person (ss 15, 16) or executive officer of the corporation (s 18) convicted or found guilty within the previous 5 years of an offence involving drugs</li> <li>Person (s 16) or executive officer of the corporation (s 18) is bankrupt or personally insolvent (s 16)</li> <li>Executive officer of the corporation is not a suitable person under section 17 (s 18)</li> </ul>	<p>For an individual person/executive officer of a corporation</p> <ul style="list-style-type: none"> <li>Person or any close associate of the person is not of good repute, having regard to character, honesty and integrity (s 17)</li> <li>Person has held a licence under the Act that was suspended or cancelled (s 17)</li> <li>Person has been convicted or found guilty of a relevant offence<sup>184</sup> (s 17)</li> </ul> <p>For an individual:</p> <ul style="list-style-type: none"> <li>The person's criminal history (s 17)</li> <li>Person cannot satisfactorily perform the duties of the licence (s 17)</li> </ul> <p>For a corporation:</p> <ul style="list-style-type: none"> <li>Corporation has been placed in receivership or liquidation (s 17)</li> </ul>

<sup>184</sup> Offence against the *Hemp Fibre Industry Facilitation Act 2004*, the *Drugs of Dependence Act 1989* or an offence under Chapter 4 of the *Medicines, Poisons and Therapeutic Goods Act 2008*.

Jurisdiction (licence type)	Conditions under which a licence must not be granted	Conditions under which a licence may be refused, or which must be considered or taken into account
<b>NSW</b>	<ul style="list-style-type: none"> <li>Person or any close associate<sup>185</sup> of the person is not a suitable person to be concerned in or associated with the cultivation or supply of low-THC hemp (s 9)</li> <li>Person or any close associate<sup>186</sup> is not of good repute, with regards to their character, honesty and integrity (s 9)</li> <li>Person or any close associate<sup>187</sup> has been found guilty of a drug-related offence (s 9)</li> </ul>	<ul style="list-style-type: none"> <li>Person or any close associate has been found guilty of an offence that, in the opinion of the Director-General, makes the person or close associate unsuitable to be concerned in or associated with the cultivation or supply of low-THC hemp (s 9)</li> <li>Any such grounds the Director-General considers appropriate (s 9)</li> <li>Person unable to demonstrate, to the satisfaction of the Director-General, a lawful and genuine purpose for the cultivation or supply of low-THC hemp (cl 6)</li> <li>Person or any close associate has previously been refused a licence or a corresponding authority<sup>188</sup> (cl 6)</li> <li>Person or any close associate has previously held a licence or corresponding authority that was cancelled or suspended (cl 6)</li> <li>Person or a close associate who will be concerned in or associated with the cultivation or supply of low-THC hemp is under 18 years of age (cl 6)</li> <li>With regards to a licence to cultivate low-THC hemp for scientific research, instruction, analysis or study, the person or any close associate who will be concerned in or associated with the cultivation or supply of low-THC hemp does not have the educational qualifications and other relevant qualifications and experience required to carry out the proposed scientific research, instruction, analysis or study (cl 6)</li> </ul>
<b>QLD (Researcher licence)</b>	<ul style="list-style-type: none"> <li>Person, or person in corporation, does not have the necessary educational or other qualifications and experience (s 57)</li> </ul>	n/a
<b>QLD (Researcher or Grower licence)</b>	<ul style="list-style-type: none"> <li>Person (s 57, 58), or executive officer of the corporation (s 59), has been convicted within the preceding 10 years of a serious offence<sup>189</sup></li> </ul>	<p>For an individual person/executive officer of a corporation</p> <ul style="list-style-type: none"> <li>Person has been convicted of an offence against the Act or an offence that, if</li> </ul>

<sup>185</sup> This applies to a close associate only if the Director-General is satisfied that the close associate is likely to be concerned in, or associated with, the cultivation or supply of low-THC hemp under the licence (s 9(1))

<sup>186</sup> See previous footnote

<sup>187</sup> See previous footnote

<sup>188</sup> Where a corresponding authority means an authority issued under a corresponding law that, in the opinion of the Director-General, is similar to a licence under this Act (s 3)

<sup>189</sup> Serious offence means (a) any of the following offences, whether or not prosecuted on indictment— (i)

Jurisdiction (licence type)	Conditions under which a licence must not be granted	Conditions under which a licence may be refused, or which must be considered or taken into account
	<ul style="list-style-type: none"> <li>Person (s 57, 58), or executive officer of the corporation (s 59), is affected by bankruptcy action</li> <li>Executive officer of the corporation is not a suitable person under section 60 (s 59)</li> </ul>	<ul style="list-style-type: none"> <li>committed in Queensland, would be an offence against the Act (s 60)</li> <li>Another thing the chief executive may consider under this part (s 60)</li> </ul> <p>For an individual</p> <ul style="list-style-type: none"> <li>Person or any close associate of the person is not of good repute, with regards to their character, honesty and integrity (s 60)</li> <li>Person has held a Queensland licence that was suspended or cancelled (s 60)</li> <li>The person's criminal history (s 60)</li> <li>The person is not capable of satisfactorily performing the activities of a licensee (s 60)</li> </ul> <p>For a corporation</p> <ul style="list-style-type: none"> <li>Corporation has been placed in receivership or liquidation (s 60)</li> <li>Whether each executive officer is a suitable person to hold a licence (s 60)</li> </ul>
<b>TAS (Industrial hemp licence or special licence)</b>	<ul style="list-style-type: none"> <li>Person is not a fit and proper person to be involved in the possession, cultivation or supply of hemp or industrial hemp (s 9)</li> </ul>	<ul style="list-style-type: none"> <li>Person has been found guilty of a drug-related offence (s 9)</li> <li>Person has been found guilty of an offence that, in the opinion of the Secretary, makes the person unsuitable to be involved in the possession, cultivation or supply of hemp or industrial hemp (s 9)</li> <li>Any other grounds that the Secretary considers appropriate (s 9)</li> <li>The regulations may make provision for further circumstances in which a licence may be refused (s 9)</li> <li>The person's criminal history (s 10)</li> </ul>
<b>VIC</b>	<ul style="list-style-type: none"> <li>Applicant or any associate has been found guilty of a serious offence<sup>190</sup> within the previous 10 years (s 64)</li> <li>Applicant and each associate is not a suitable person to be concerned in or associated with the cultivation,</li> </ul>	<ul style="list-style-type: none"> <li>Applicant and each associate is not of good repute, having regard to character, honesty and integrity (s 64)</li> <li>In the case of an applicant that is not a natural person, the applicant does not have a satisfactory ownership, trust or</li> </ul>

an offence involving fraud or dishonesty punishable by 3 or more years imprisonment; (ii) an offence against section 5, 6, 8 or 9D [namely, trafficking, supplying or producing dangerous drugs, or trafficking in relevant substances or things]; (iii) an offence against section 8A or 9 punishable by 3 or more years imprisonment [namely, publishing or possessing instructions for producing dangerous drugs, or possessing dangerous drugs]; (iv) an offence involving the use or threatened use of violence punishable by 3 or more years imprisonment; or (b) extortion; or (c) an offence against a provision of the Criminal Code mentioned in the schedule [namely, official corruption, official corruption not judicial but relating to offences, unlawful homicide, attempt to murder, rape, attempt to commit rape, kidnapping, kidnapping for ransom and extortion]; or (d) an offence that, if committed in Queensland, would be a serious offence under paragraph (a), (b) or (c).

<sup>190</sup> Serious offence means an indictable offence involving dishonesty, fraud or cultivation or trafficking in drugs of dependence where the maximum penalty exceeds 3 months imprisonment (s 61)

Jurisdiction (licence type)	Conditions under which a licence must not be granted	Conditions under which a licence may be refused, or which must be considered or taken into account
	<p>processing, sale or supply of low-THC cannabis (s 64)</p> <ul style="list-style-type: none"> <li>Applicant's property or premises will not be suitable for the cultivation, processing, sale or supply of low-THC cannabis in relation to location, facilities and proposed security arrangements (s 64)</li> </ul>	<p>corporate structure (s 64)</p> <ul style="list-style-type: none"> <li>Applicant is not of sound and stable financial background (s 64)</li> <li>Applicant has any business association with any person or body who or which, in the opinion of the Secretary, is not of good repute, having regard to character, honesty and integrity (s 64)</li> <li>Any director, partner, trustee, executive officer and secretary and any other person determined by the Secretary to be associated or connected with the ownership, administration or management of the operations or business of the applicant is not a suitable person to act in that capacity (s 64)</li> </ul>
<b>WA</b>	<p>For a person, relevant persons in a partnership, or relevant persons in a body corporate, a licence must be granted if the following conditions are met (ss 8, 10, 12):</p> <ul style="list-style-type: none"> <li>Applicant is over 18 years of age</li> <li>Applicant is of good character and repute</li> <li>Applicant is a fit and proper person to be involved or concerned in the management or conduct of an activity to be authorised by the licence</li> <li>Applicant, partnership or body corporate has sufficient material, human and financial resources</li> </ul> <p>For a person, relevant persons in a partnership, or relevant persons in a body corporate, a licence must not be granted if the following conditions are met (ss 8, 10, 12):</p> <ul style="list-style-type: none"> <li>Applicant has been found guilty of an external serious drug offence<sup>191</sup> or a serious drug offence within the previous 10 years</li> <li>Applicant has an association with a person who (1) is not of good character and repute or (2) has been found guilty of an external serious drug offence or a serious drug offence within the previous 10 years</li> <li>The means by which, the manner in which or the premises at which the applicant proposes to cultivate, harvest</li> </ul>	

<sup>191</sup> An external serious drug offence is defined in section 32A(3) of the *Misuse of Drugs Act 1981* to mean (a) an offence against a law of the Commonwealth, of another State, or of a Territory, which offence is prescribed to correspond to a crime under section 6(1), 7(1), 33(1)(a) or 33(2)(a); or (b) offence against (i) the repealed section 233B of the *Customs Act 1901* of the Commonwealth; or (ii) a law of the Commonwealth, which offence is prescribed to correspond to an offence against that repealed section.

Jurisdiction (licence type)	Conditions under which a licence must not be granted	Conditions under which a licence may be refused, or which must be considered or taken into account
	or process industrial hemp are not suitable	

## Criminal record checks

Jurisdiction	Criminal record checks
<b>ACT</b>	<ul style="list-style-type: none"> <li>The director-general <b>may</b> make investigations about any of the following people: the applicant; the corporation's executive officers; or a person stated by the applicant to be a close associate of the applicant (s 19(1))</li> <li>The director-general <b>may</b> ask the chief police officer for a written report about the criminal history of any of the people (s 19(2))</li> <li>The director-general <b>must</b> consider the person's criminal history (s 17)</li> </ul>
<b>NSW</b>	<ul style="list-style-type: none"> <li>The director-general is authorised to carry out such investigations and inquiries as they consider necessary (s 8(1))</li> <li>The director-general <b>must</b> conduct a criminal record check in relation to the applicant and <b>may</b> conduct a criminal record check in relation to any person who, in the opinion of the director-general, is a close associate of the applicant. It is the duty of the commissioner of police to assist in any such criminal record check (s 8(2))</li> </ul>
<b>QLD</b>	<ul style="list-style-type: none"> <li>The chief executive <b>may</b> make investigations about (a) the applicant (b) the corporation's executive officers or (c) any close associate of the applicant (s 61)</li> <li>The chief executive <b>may</b> ask the commissioner of police for a written report about the criminal history of any of the persons (s 61(2)). In this regard, the applicant must consent to their fingerprints being taken by a police officer (s 61(4))</li> <li>The chief executive <b>must</b> consider a person's criminal history (s 60)</li> </ul>
<b>TAS</b>	<ul style="list-style-type: none"> <li>The Secretary <b>may</b> carry out such investigations and inquiries as the Secretary considers necessary (s 8)</li> <li>The Secretary <b>must</b> take into account an applicant's criminal history (s 10)</li> </ul>
<b>VIC</b>	<ul style="list-style-type: none"> <li>The Secretary <b>must</b> cause to be carried out all investigations and inquiries that they consider necessary to properly determine the application (s 63)</li> <li>The Secretary <b>may</b> refer a copy of the application to the Chief Commissioner of Police (s 63)</li> </ul>
<b>WA</b>	<ul style="list-style-type: none"> <li>The Registrar is to carry out the investigations the Registrar considers necessary to determine the application (s 6)</li> <li>The Registrar <b>may</b> refer a copy of the application to the Commissioner of Police (s 6)</li> </ul>

## Determination of licence application and review of decisions

Jurisdiction	Determination of licence application
<b>ACT</b>	<ul style="list-style-type: none"> <li>The director-general may issue or refuse to issue a licence (s 21)</li> <li>The director-general may only issue a licence if: <ul style="list-style-type: none"> <li>(a) the applicant is eligible to hold the licence; and</li> <li>(b) the applicant is a suitable person to hold a licence; and</li> <li>(c) if the applicant is a corporation—each executive officer of the corporation is a suitable person to hold a licence; and</li> <li>(d) if the applicant intends performing activities under the licence in partnership or with others—each member of the partnership, or each person with whom the applicant intends performing activities under the licence, is a suitable person to hold a licence (s 21)</li> </ul> </li> <li>If the director-general refuses to issue the licence, they must give the applicant written notice within 14 days of the decision being made (s 21)</li> <li>If the director-general makes a reviewable decision, they must give a review decision notice to each relevant entity (s 57A)</li> </ul>

Jurisdiction	Determination of licence application
	<ul style="list-style-type: none"> <li>• A person may apply to the ACAT for review of a reviewable decision (s 58)</li> <li>• A reviewable decision includes (1) refusal to issue a licence (2) refusal to renew a licence (3) amendment or refusal to amend a licence (4) suspension or cancellation of a licence (5) immediate suspension of a licence and (6) immediate cancellation of a licence (Schedule 1)</li> </ul>
<b>NSW</b>	<ul style="list-style-type: none"> <li>• The director-general may issue or refuse to issue a licence (s 10)</li> <li>• The director-general is to give the applicant written notice of the determination of the application. However, the director-general is not required to give any reasons for their decision (s 10)</li> <li>• The director-general's decision is final and is not subject to review (s 10)</li> <li>• A person may apply to the Civil and Administrative Tribunal for an administrative review under the Administrative Decisions Review Act 1997 of a decision by the director-general to (a) impose conditions on a licence or vary licence conditions (b) refuse to renew a licence or (c) suspend or revoke a licence (s 38)</li> </ul>
<b>QLD</b>	<ul style="list-style-type: none"> <li>• The chief executive may issue or refuse to issue a licence (s 63)</li> <li>• The chief executive may only issue a licence if: <ul style="list-style-type: none"> <li>(a) the applicant is a suitable person to hold a licence; and</li> <li>(b) if the applicant intends performing activities under the licence in partnership or in conjunction with others—each member of the partnership, or each person with whom the applicant intends performing activities in conjunction, is a suitable person to hold a licence; and</li> <li>(c) if the applicant is a corporation—each executive officer of the corporation is a suitable person to hold a licence; and</li> <li>(d) the applicant is eligible to hold the licence; and</li> <li>(e) the application is properly made (s 63)</li> </ul> </li> <li>• If the chief executive refuses to issue the licence, they must give the applicant written notice within 14 days of the decision being made (s 63)</li> <li>• A person who is dissatisfied with a decision of the chief executive under this part may apply, as provided under the QCAT Act, to QCAT for a review of the decision (s 85)</li> <li>• The chief executive must give a person an information notice for a decision only if this Act so requires (s 85)</li> </ul>
<b>TAS</b>	<ul style="list-style-type: none"> <li>• The Secretary may issue or refuse to issue a licence (s 12)</li> <li>• The Secretary is to give the applicant written notice of the determination, including reasons for the refusal if the application is refused (s 12)</li> <li>• An applicant may apply to the Minister for a review of a decision by the Secretary (s 20)</li> <li>• The Minister must make a determination (a) substituting the decision with another decision (b) confirming the decision or (c) revoking the decision. The Minister must notify the applicant of the determination made, findings on material questions of fact, the evidence on which the findings are based, and the reasons for the determination (s 21)</li> </ul>
<b>VIC</b>	<ul style="list-style-type: none"> <li>• The Secretary may issue or refuse to issue an authority (s 65)</li> <li>• The Secretary must notify the applicant in writing of the decision (s 65)</li> <li>• A person may apply to the Victorian Civil and Administrative Tribunal for a review of a decision of the Secretary (a) to refuse to issue an authority (b) to refuse to renew an authority or (c) to suspend, cancel or amend an authority (s 69B)</li> <li>• An application for review must be made within 28 days after the later of (a) the day on which the decision was made and (b) if, under the <i>Victorian Civil and Administrative Tribunal Act 1998</i>, the person requests a statement of reasons for the decision, the day on which the statement of reasons is given to the person or the person is informed under section 46(5) of that Act that a statement of reasons will not be given (s 69B)</li> </ul>
<b>WA</b>	<ul style="list-style-type: none"> <li>• The Registrar must give an applicant notice of any refusal of an application (s 13)</li> <li>• Within 30 days of receiving notice of a decision, a person may appeal to the Minister for a review of a decision by the Registrar to (1) refuse to issue a licence (2) refuse to renew a licence (3) refuse to transfer a licence (4) suspend or cancel a licence or (5) amend a</li> </ul>

Jurisdiction	Determination of licence application
	<p>licence (s 36)</p> <ul style="list-style-type: none"> <li>• The Minister may determine the appeal by confirming, varying or reversing the decision (s 36)</li> <li>• The Minister's decision is final (s 36)</li> <li>• The Minister must provide the determination, together with reasons for the determination, to the appellant within 7 days (s 36)</li> </ul>
<b>Definition of close associate</b>	
Jurisdiction	Definition of close associate
<b>ACT</b>	<p>A person is a close associate if:</p> <ul style="list-style-type: none"> <li>(a) the person holds or will hold an executive position (however described) in the related person's business; or</li> <li>(b) the director-general is satisfied that the person is or will be able to exercise a significant influence in relation to the conduct of the related person's business because the person holds or will hold a financial interest, or is entitled to exercise a relevant power, in the business (s 8)</li> </ul>
<b>NSW</b>	<p>A person is a close associate if the person:</p> <ul style="list-style-type: none"> <li>(a) holds or will hold any relevant financial interest, or is or will be entitled to exercise any relevant power (whether in his or her own right or on behalf of any other person), in the business of the licence applicant or holder, and by virtue of that interest or power is or will be able (in the opinion of the Director-General) to exercise a significant influence over or with respect to the conduct of that business, or</li> <li>(b) holds or will hold any relevant position, whether in his or her own right or on behalf of any other person, in the business of the licence applicant or holder (s 4)</li> </ul>
<b>QLD</b>	<p>A close associate of an applicant means any of the following:</p> <ul style="list-style-type: none"> <li>(a) a person who— <ul style="list-style-type: none"> <li>(i) holds or will hold any relevant financial interest in the business of the applicant or licensee; and</li> <li>(ii) because of the interest, is or will be able to exercise a significant influence over or in relation to the conduct of that business;</li> </ul> </li> <li>(b) a person who— <ul style="list-style-type: none"> <li>(i) is or will be entitled to exercise any relevant power (whether in his or her own right or on behalf of any other person), in the business of the applicant or licensee; and</li> <li>(ii) because of the power, is or will be able to exercise a significant influence over or in relation to the conduct of that business;</li> </ul> </li> <li>(c) a person who holds or will hold any relevant position, whether in his or her own right or on behalf of any other person, in the business of the applicant or licensee (s 46)</li> </ul>
<b>TAS</b>	Term not used in legislation
<b>VIC</b>	<p>A person is an associate of an applicant if the person:</p> <ul style="list-style-type: none"> <li>(a) holds or will hold any relevant financial interest, or is or will be entitled to exercise any relevant power (whether in right of the person or on behalf of any other person) in the business of the applicant to which the authority relates, and by virtue of that interest or power, is able or will be able to exercise a significant influence over or with respect to the management or operation of the business to which the authority relates; or</li> <li>(b) holds or will hold any relevant position, whether in right of the person or on behalf of any other person in the business of the applicant to which the authority relates; or</li> <li>(c) is a relative of the applicant, where relative means spouse (including de facto spouse), parent, child or sibling (whether of the full or half blood) (s 61)</li> </ul>
<b>WA</b>	"An association with a person" (ss 8, 10, 12) is not defined in the Act

## APPENDIX 2: TIMELINE – INDUSTRIAL HEMP AS A FOOD IN AUSTRALIA AND NEW ZEALAND

DATE	EVENT
July 1998	Ecofibre Industries Association of Australia submits application to amend the Food Standards Code to permit the use of products from low-THC <i>Cannabis</i> spp., such as hemp seed and hemp seed oil, as food ( <b>Application A360</b> )
Dec 2001	FSANZ releases <a href="#">draft assessment report</a> for Application A360 – Hemp as a novel food
April 2002	FSANZ releases <a href="#">final assessment report</a> for Application A360 – Hemp as a novel food, in which it recommended removal of the total prohibition on the use of <i>Cannabis</i> spp. in food and the establishment of maximum levels for THC in specified foods.
May 2002	Australia New Zealand Food Standards Council <a href="#">Joint Communiqué</a> – Council rejects FSANZ proposal to remove total prohibition on use of <i>Cannabis</i> spp. in food
2002	Hemp seed oil permitted for use as food in New Zealand under the <a href="#">Food (Safety) Regulations 2002</a>
Dec 2009	Dr Andrew Katelaris submits application to amend the Food Standards Code to permit the use of <i>Cannabis sativa</i> with low THC levels, in both seed and seed oil, as a food ( <b>Application A1039</b> )
Mar 2011	FSANZ release a <a href="#">consultation paper</a> on A1039 – Low THC hemp as a food, together with a <a href="#">risk assessment report</a>
Dec 2011	FSANZ release an <a href="#">assessment report</a> on A1039 – Low THC hemp as a food, which contained a draft variation to the Food Standards Code permitting consumption of low-THC hemp seed and seed oil as a food
Oct 2012	FSANZ approve draft variation of Food Standards Code
Nov 2012	FSANZ <a href="#">notifies</a> the COAG Legislative and Governance Forum on Food Regulation of their decision to approve the draft variation of the Food Standards Code
Dec 2012	COAG Legislative and Governance Forum on Food Regulation <a href="#">seek a review</a> of the proposed standard for low-THC hemp as a food; Ministers to seek advice from the Standing Council on Police and Emergency Services
Dec 2014	FSANZ release a <a href="#">review</a> of A1039 – Low THC hemp as a food, in which they re-affirm their approval of the variation to the Food Standards Code
Jan 2015	Australia and New Zealand Ministerial Forum on Food Regulation <a href="#">reject proposed variation</a> to the Food Standards Code [ <a href="#">Rejection Notice</a> ]. Forum agrees to do further work on law enforcement, roadside drug testing and marketing concerns in consultation with relevant Ministers
Nov 2015	Australia and New Zealand Ministerial Forum on Food Regulation <a href="#">note progress</a> on work into the adoption of low THC hemp as a food. Forum to consider a report in March 2016 on the cannabinoid levels, legal and treaty issues, and concerns regarding the marketing of hemp food



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- Feb 2016 The NSW Greens MLC Jeremy Buckingham moves a [motion](#) in support of hemp food products, which was supported by the Animal Justice Party, the Christian Democratic Party and the Labor Party. The Government opposed the motion on the basis that it was already working proactively on the matter.
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- Mar 2016 Australia and New Zealand Ministerial Forum on Food Regulation [note progress](#) on work into the adoption of low THC hemp as a food. Forum yet to consider reports from any of the four studies addressing issues with the legalisation of hemp as a food. Forum tasked FSANZ with developing a draft proposal on how low THC hemp could be legally designated as a food.
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- May 2016 NSW Government releases [Review of the Hemp Industry Act 2008](#). While the review made no reform recommendations, it noted that legal amendments may be necessary in future if approval be given for the use of low THC hemp as a food.

### APPENDIX 3: COST-BENEFIT ANALYSIS OF LEGALISING HEMP FOOD

In 2011, FSANZ commissioned a [cost-benefit analysis](#) of different regulatory options for the legalisation of hemp foods. Four options were considered (Table A):

- Option 1 – Reject the Application
- Option 2A – Permit the use of low THC hemp seed oil products only
- Option 2B – Permit use of low THC processed hemp seed products (which includes hulled seed but excludes viable hempseed)
- Option 2C – Permit use of low THC whole hemp seeds and hemp seed products.

**Table A: Analysis of four regulatory options for legalising hemp food<sup>192</sup>**

Option	Analysis
Option 1: Reject the Application, thus not approving the use of low THC foods	n/a
Option 2A: Prepare draft variations to permit the use of low THC hemp seed oil products only as food with maximum limits in the Code	Option 2A limits the potential market to oil products only, without any safety concerns for hemp food. A rather small number of new businesses and increase in revenue will be assumed. If the supply and demand for hemp seed oil fails to develop sufficiently government costs, as governments will have large start-up costs due to training and investments in compliance and enforcement plans, may exceed benefits.
Option 2B: Prepare draft variations to permit the use of low THC processed hemp seed products (which includes hulled seed but excludes viable hempseed) as a food with maximum limits in the Code	Option 2B provides an opportunity for a much larger range of products without additional safety concerns. A larger number of new businesses and larger revenue is assumed than achieved under option 2. Start-up costs for governments are based on time for training and investment in new compliance plans, which will be the same for this option.
Option 2C: Prepare draft variations to permit the use of low THC whole hemp seeds and hemp seed products as food with maximum limits in the Code.	Option 2C provides for the largest range of hemp food products. However, there are also stricter compliance and enforcement measures necessary that increase costs. Costly viability testing would possibly need to be introduced, which may make option 4 less attractive. Given the uncertainty around additional enforcement costs, option 4 might not provide as large a net benefit as option 3. Whether this is the case is not clear from available evidence.

A range of benefits and costs were identified (Table B). Key benefits include net profits for hemp seed producers, manufacturers and retailers and consumption of a nutritious food product by consumers. Key costs include regulatory costs borne by new entrants to the industry, including police checks, security requirements, testing and record keeping, and government costs such as testing of THC content, training staff with regard to the new regulatory requirements and the cost of additional enforcement measures.<sup>193</sup>

<sup>192</sup> FSANZ, [Supporting Document 3 – Approach for impact assessment – Application A1039: Low THC Hemp as a Food](#), December 2011

<sup>193</sup> FSANZ, [Supporting Document 2 – Economic Analysis \(Approval\) – Application A1039: Low](#)

**Table B: Impacts from permitting low THC hemp food to be considered<sup>194</sup>**

Impacts to be considered		Benefit (+) Cost (-)
Producers	Net profits to hemp seed producers	+
	Net profits to low THC hemp food manufacturers and retailers	+
	Good rotational crop in relation to soil health and other benefits	+
	Additional compliance costs (through licencing etc.)	-
Consumers	Consumer benefit from low THC hemp food as a result of its nutritious benefits and other perceived attributes	+
Government	An additional number of businesses may need to be regulated in relation to the growing of hemp seed and manufacturing of hemp based food (some or all costs may be recovered through licencing and other fees)	- / neutral
	The possibility of road drug tests and work place drug tests being compromised due to the consumption of low THC hemp food (not quantified nor clear evidence provided)	-
	Potential that low THC hemp food may cause evidentiary problems in relation to drug enforcement activity (not quantified nor clear evidence provided)	- / not determined

FSANZ notes that, whereas other economic analyses prepared by FSANZ have been able to recommend a 'best solution' based on reliable data, a comprehensive cost benefit analysis has not been possible in the case of hemp foods due to the uncertainty surrounding almost all the costs and benefits. The costs and benefits are therefore detailed largely in qualitative terms, with quantitative evidence provided where possible.<sup>195</sup> Nevertheless, FSANZ concluded that option 2B should be preferred as it provides larger commercial potential than 2A with a smaller range of regulatory problems than 2C:

... it is reasonable to assume that benefits to growers and food producers will be positively related to the number of food products that are permitted. Likewise, it is reasonable to assume that regulatory costs will be positively correlated with the number of growers and producers and the number of products on the market. Therefore the option that allows the widest range of low THC products could arguably be preferred. However, whilst option 2C offers industry and consumers a wider range of products it may also cause a wider range of regulatory problems. These include the need for seed viability testing and the potential for seed to be confused with other varieties of cannabis seed causing difficulties with illicit drug law enforcement activities. As a result of the above it is suggested that option 2B should be preferred above option 2C.<sup>196</sup>

*THC Hemp as a Food*, November 2012

<sup>194</sup> Adapted from: *Ibid.*, p.10

<sup>195</sup> *Ibid.*

<sup>196</sup> *Ibid.*, p.10

## APPENDIX 4: 2014 REVIEW OF THE APPROVAL OF HEMP AS A FOOD<sup>197</sup>

In December 2012, the COAG Legislative and Governance Forum on Food Regulation (the Forum) requested that Food Standards Australia New Zealand (FSANZ) review its recommendation supporting legalisation of low THC hemp as a food. The Table below sets out the issues the Forum wanted addressed, together with FSANZ's response.

COAG Legislative and Governance Forum on Food Regulation Issue	Summary of FSANZ's reponse
<b>Public health and safety</b>	
<p>Impact on drug reduction strategies – the Forum was concerned that the availability of hemp foods may contribute to a public perception that low levels of cannabis are acceptable and safe to consume</p>	<p>FSANZ has not identified any scientific studies investigating the effect of hemp in food products on consumer perceptions and demand for illicit cannabis products. However, FSANZ received feedback from international jurisdictions in which hemp foods are permitted indicating that this concern did not appear to be well-founded</p>
<p>The Forum also asked FSANZ to investigate the following matters relating to the marketing of hemp foods:</p> <ul style="list-style-type: none"> <li>• Feasibility of prohibiting the use of hemp leaf images in any advertising relating to hemp foods</li> <li>• Type of appropriate regulatory measures for the marketing of hemp foods that would reduce the risk of consumers perceiving that hemp food products contain cannabis</li> <li>• Whether the literature provides any evidence demonstrating that the use of hemp in food products has led to an increase in the demand for illicit cannabis products.</li> </ul>	<p>FSANZ identified possible regulatory measures that may be introduced in the Code (or other legislation) to prohibit the use of cannabis leaf images in advertising and to reduce the risk of consumers believing that foods derived from hemp seeds can produce psychoactive effects.</p> <p>FSANZ evaluated these possible measures in the context of the statutory requirements under which FSANZ decisions must be made (including FSANZ Act and administrative law requirements). FSANZ does not consider there is sufficient evidence for FSANZ to include additional controls in the approved variation to address the marketing of hemp foods.</p> <p>FSANZ did not identify any scientific studies investigating the impact of hemp in food products on demand for illicit cannabis products.</p>
<p>Roadside drug testing – impact of hemp foods</p>	<p>No additional evidence has become available since FSANZ's Approval Report. At Approval, FSANZ extrapolated the results of an unpublished study which suggested it is unlikely that consumption of hemp foods will trigger a positive result for an oral fluid drug test when the Australian Standard (AS/NZS 4308-2008) cut-off levels are utilised. However, this evidence is not definitive, and this issue remains uncertain.</p>
<b>Impact on enforcement</b>	
<p>Distinguishing between hemp and illicit cannabis –the Forum asked FSANZ to investigate:</p> <ul style="list-style-type: none"> <li>• The feasibility of prohibiting trade and consumption of whole hemp seeds, noting that consideration should be given to the feasibility of only permitting the trade and consumption of ground hemp seeds and whole hemp seeds that have been hulled</li> </ul>	<p>The variation approved by FSANZ sets out clear requirements that seeds must be hulled and non-viable before they can be offered for sale as foods or as ingredients in foods (in addition to maximum permitted levels of THC that are also prescribed). This would preclude the legal consumption of whole hemp seeds.</p> <p>Roasting of seeds, in addition to these requirements, does not appear to be necessary and may limit the variety of hemp food products that could be marketed, in addition to impacting on the nutritional profile of some hemp food products.</p>

<sup>197</sup> Adapted from: Food Standards Australia New Zealand, *Review – Application A1039: Low THC Hemp as a Food*, 16 December 2014, pp.2-3

COAG Legislative and Governance Forum on Food Regulation Issue	Summary of FSANZ's reponse
and roasted  In the context that low THC hemp oil is already commercially available in Australia for purposes other than human consumption, how that currently does or does not create difficulties for law enforcement agencies, marketing or workplace occupational health and safety drug testing.	Existing industrial hemp legislation in Australia and New Zealand should be sufficient to prevent the illegal trade in cannabis seeds. If additional controls on the trade of whole hemp seeds are considered necessary by other stakeholders, it may be appropriate for industrial hemp legislation to be amended to incorporate these controls. FSANZ received feedback from police, a hemp licensing authority and a forensic analytical laboratory indicating that non-food uses of hempseed oil has not created any issues for these agencies.
Consistency with international drug control conventions	FSANZ considers this issue to be outside of the considerations that FSANZ is able to take into account when developing food regulatory measures. FSANZ notes that hemp foods are permitted to be sold in a number of international jurisdictions that are also signatories to UN conventions on narcotic drugs.
Consistency with domestic legislation	The FSANZ assessment noted that the consumption of delta-9 tetrahydrocannabinol (THC) is prohibited in other legislation in Australian states and territories and in other Australian and New Zealand legislation. This legislation would require amendment before hemp foods with quantifiable amounts of THC could be approved for human consumption (in addition to the variation to Standard 1.4.4 approved by FSANZ). Consideration of potential amendments to other relevant legislation may provide an opportunity to address some of the concerns raised by the Forum and other stakeholders in an alternative context to the Code.