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Community perceptions of Australia's forest, wood and paper industries: implications for social license to operate

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Introduction

To operate successfully in day-to-day activities, the forest industry needs to have a social license to operate. This report examines whether key parts of the Australian forest industry have a social license to operate, and how the extent of this license varies across different region and amongst different groups. This is done through comparing social acceptability of three specific activities, two in the forest industry and one providing a comparison:

- Planting trees on good agricultural land for wood and paper production (timber plantations)
- Harvesting of native forests for wood and paper products (native forest harvesting)
- Planting trees on good agricultural land for environmental purposes (environmental tree planting).

The report also examines whether the costs and benefits experienced by those who live near forestry operations – on neighbouring land, or in communities in which the industry operates - influence its social license to operate.

Understanding social license

While many people identify the importance of having a social license to operate, what a social license is and how it can be measured often remains poorly defined. A 'social license to operate', or social license, is most simply defined as the extent to which an activity – such as development of a new mine, or the day to day operations of the forest industry - is considered socially acceptable. This means that community perceptions must be examined to understand what level of social license an activity has at a given point in time.

Social license can have many levels with six levels defined in this report:

- Blocked: societal values means that social license will never be granted, even if an industry operates in a highly responsible manner
- Withheld/withdrawn: social license is has been withheld or withdrawn, but there is potential for change through industry action
- Tolerance: While having concerns about the activity, its presence is tolerated
- Acceptance: People accept the activity as appropriate, although they may criticise some aspects of it, and do not actively work to support it
- Approval: People approve of the activity and actively work to support it
- Psychological identification: The activity is considered an important and 'loved' part of a person or community's identity and actively promoted as such.

The same level of social license may not be needed from every person for an industry or organisation to operate successfully. It is important to carefully identify what level of social license is needed from different stakeholders and communities for an activity to be carried out successfully.

Social license may need to be achieved at a number of scales: there is no 'single' social license for an activity but rather a series of social licences that can be granted at scales from the micro scale (i.e. neighbouring landholders or a local community with a nearby forestry operation) to the macro scale

(i.e. key stakeholders setting policy and influencing public debate about an industry nationally). This means that in addition to identifying the level of social license needed from different groups, it is important to identify at what scale that license is needed. For example, to be able to operate effectively, a company may need acceptance not only from local communities in which it operates, but also from peak stakeholder groups who influence market demand for its products at a national scale.

Three interacting factors have been identified as key to achieving a social license:

- Legitimacy: Being viewed as an organisation or industry who are conducting a legitimate activity, which provides economic benefit (economic legitimacy) and is fair and contributes positive to wellbeing (socio-political legitimacy)
- Trust: Being trusted by those from whom social license is sought, with trust in turn often identified as strongly influenced by the quality of engagement and communication by the organisation seeking social license
- Credibility: Being viewed as 'believable' in the sense that the activity is trusted as having benefits and as not having unacceptable negative impacts on things a person or group care about.

Previous studies suggest that in the forest industry, it is particularly important to examine how social license changes over time and across the often large geographic range across which the industry operates. They also highlight that it is important to examine whether the industry operates in ways consistent with key values held by people that drive what they feel is acceptable and unacceptable. In a review of past studies, key values identified as influencing acceptability of the industry included whether the industry was viewed as a 'good neighbour' by other rural landholders, and the extent to which it was perceived to have a range of social, environmental and economic impacts for local communities and neighbouring landholders. In particular, to be perceived as a good neighbour, forest and plantation managers need to meet social expectations of helping out neighbours, consulting neighbours, and managing issues such as boundary fences and pest animals/weeds that can impact neighbours. To be perceived as a positive contributor to local communities, ideally the industry should be perceived as contributing positively to local employment, environmental health, landscape amenity, friendliness and to reducing bushfire risk; while not having negative impacts on land prices, cost of living, human health, or traffic and road quality.

Methods

Social license was examined using data collected in a nationwide survey of adult Australians, the Regional Wellbeing Survey. Data were collected in 2016. Over 11,500 rural and regional Australians answered questions about acceptability of forestry related activities. Over 2,000 indicated that forestry was an important industry in their local community and answered questions about the perceived positive and negative impacts of the forest industry in their local community. Of the 3,113 rural landholders included in the survey, 159 neighboured a native forest that is sometimes logged, 261 neighboured an area of timber plantation or an area of land leased to a plantation company, and 393 neighboured a National Park; these answered questions about their experiences of the having these activities on neighbouring land. Survey data were weighted to correct for biases, with all data weighted to be representative of the adult population unless otherwise noted.

Social license of the forest industry

Social license will vary for different activities within the forest industry: for example, social debate and controversy most commonly focus on the on-ground management of native forest and plantations, and less often on activities occurring further along the supply chain in processing of many wood and paper products. Past work also suggests differences in (i) social license for harvesting of native forest compared to management of plantations for wood and paper production and (ii) in planting trees on agricultural land for timber production versus for environmental purposes such as carbon sequestration, particularly when undertaken on good agricultural land. Based on this, the three activities focused on in this report were selected for study (timber plantations, native forest harvesting, and environmental tree planting).

The 'acceptability' level of social license was assessed through asking survey participants how acceptable or unacceptable they found each of these three activities on a seven-point scale:

- Native forest logging was considered unacceptable by 65% of rural/regional and 70% of urban residents across Australia, and acceptable by 17% of rural and 10% of urban residents. Eleven per cent of rural/regional and 9% of urban residents found this neither acceptable or unacceptable, and 8% and 11% respectively were unsure whether it was acceptable.
- Tree planting for wood/paper production on good agricultural land was considered unacceptable by 29% of both rural/regional and urban residents, and acceptable by 47% of rural/regional and 43% of urban residents, with the remainder (24% and 28% respectively) either neutral or unsure.
- Tree planting for environmental purposes on good agricultural land was considered unacceptable by only 12% of rural/regional and 9% of urban residents, and acceptable by 72% and 73% respectively, with 16% of rural/regional and 18% of urban residents unsure or neutral.

There are therefore much lower levels of social license for native forest logging than for producing timber using plantations. Additionally, views were very strong about unacceptability of native forest harvesting, with most of those who indicated it was unacceptable choosing the response of 'very unacceptable' rather than moderately or slightly unacceptable.

A significant proportion of people - close to one-third - find timber plantations unacceptable if established on good agricultural land, indicating low social license amongst relatively large segments of the population. However, these typically found timber plantations only slightly or moderately unacceptable, indicating higher potential for change in views than for native forest harvesting. Tree planting for environmental purposes is considered acceptable by most, even when on good agricultural land.

When compared to other sometimes controversial land and water management activities, environmental tree planting was amongst the most acceptable activities, with only controlled burning to reduce bushfire risk having higher acceptability. Timber plantations were similar in acceptability to subdivision of agricultural land. Native forest harvesting was one of the four least unacceptable practices, with the other three mining activities such as coal-seam gas mining. Overall, the findings suggest that native forest logging is equated by many Australians with depletion or 'mining' of resources, as it is clustered with coal-seam gas extraction and open-cut mining in terms of

acceptability. The findings also suggest that it is not associated with ideas of renewability, with solar farms and wind farms – producing renewable energy – having much higher acceptability than native forest harvesting, as do other practices often associated with sustainability and environmental protection.

When views of people in different regions were compared, there were few differences in social license between regions. Environmental tree planting was slightly less acceptable in Tasmania (particularly the Cradle Coast and Northern regions) and Queensland, and slightly more in the Northern Territory (NT). Timber plantations were more acceptable in Western Australia (54% finding them acceptable) and the NT (60%), and less acceptable in Tasmania (40%). People were also more likely to find this activity unacceptable if they lived in the Central Highlands and Gippsland regions of Victoria, south east Queensland, and North East and South East/Southern Inland parts of New South Wales.

Native forest harvesting was least acceptable in South Australia (SA) (70% finding it unacceptable), and Queensland (68%), and less unacceptable in Tasmania (61%) and the NT (58%). In general, people living in regions in which native forest harvesting occurred were somewhat more likely to find this activity acceptable, with between 23% and 29% living in native forest harvesting regions finding the activity acceptable compared to a average of 17% across rural and regional Australia but not substantially so.

Farmers were less likely than other people to find environmental tree planting acceptable, with only 47% finding it acceptable and 36% unacceptable. Acceptability was also somewhat lower for men than women, for older than younger people, and for those who had not completed high school compared to those with higher levels of formal education. Farmers were also least likely to of any group to find timber plantations acceptable, with 50% finding this activity unacceptable and only 31% finding it acceptable. Acceptability decreased with age, declining from 52% finding timber plantations on good agricultural land acceptable amongst those aged 18-39, to 38% for those aged 65 and older. Farmers were the group most likely to find native forest harvesting acceptable, with 31% finding it acceptable and 49% unacceptable (Figure 13). Men found this more acceptable than women (22% compared to 13%), as did those who had not completed high school (23%). Those most likely to find logging of native forests unacceptable were those living in major cities (74%) and with a university degree (71%).

Being a good neighbour: Does it influence social license?

The views of landholders neighbouring forestry operations can affect social license to operate at local, regional and national scales. This means that it is important to understand how landholders neighbouring forestry activities view their forestry neighbours. Rural landholders who lived next door to a timber plantation, a native forest that was sometimes harvested, and National Parks, were asked how they found these different types of neighbours, as well as how they found neighbouring farmers and rural residential properties.

Overall, the forest industry and managers of national parks were not viewed as being as good a neighbour as having a farmer or 'hobby farmer' living next door. When asked if their neighbours were 'good neighbours', farmers were considered the best neighbours, with 85% of rural landholders reporting that neighbouring farmers were 'good neighbours', more than felt this way about

neighbouring rural residential landholders (73%), national parks (48%), harvested native forest (47%), or timber plantations (47%). This may be in part due to lack of a strong presence of neighbouring land managers for national parks, native forest used for timber harvesting, or timber plantations, with these types of neighbours less likely than farmers or rural residential neighbours to be reported to help out or consult their neighbours, or to do well in managing issues such as pest animals, weeds, bushfire risk and boundary fences. Plantations were also viewed as being pleasant to look at by only 42% of neighbouring landholders (compared to 61% for neighbouring native forest and 81% for neighbouring farms).

Views about whether timber plantations were good neighbours were similar across most groups, although women had more negative views of neighbouring timber plantations that were associated with feeling these neighbours did not help out or consult adequately. Views of native forest managed for timber harvest were relatively similar across regions and groups, with the exception that those living in Victoria, who had more negative views, while those aged 65 and older had more positive views. When examining views of neighbours of native forest managed for timber production, the most consistent differences were between people living in different states and of different ages, with those living in Victoria reporting more negative perceptions than those in other states, and those aged 65 and over having more positive perceptions. National Parks were less often viewed as good neighbours by those living in Western Australia and by farmers.

Past studies suggest that views about the costs and benefits of an activity and how appropriately it is conducted will influence overall views of acceptability - in other words, social license.

If a landholder felt their neighbouring timber plantation was managed well, and that the plantation manager was a 'good neighbour', they were significantly more likely to consider timber plantations acceptable in general. In other words, social license for timber plantations is influenced by experiences landholders have had of neighbouring plantations. The strongest predictors of overall acceptability were believing that timber plantation managers took good care of their land, were good at reducing bushfire risk, the plantation was pleasant to look at, and that plantation managers overall good neighbours.

As expected, experiences of neighbouring timber plantations did not strongly predict how acceptable a person found environmental tree planting, although they did predict them somewhat. Experiences of living next to a native forest managed for timber production, however, did not strongly predict how acceptable or unacceptable a rural landholder found native forest harvesting.

Being a good local industry: does it predict social license?

Perceptions of neighbours are important, but neighbouring landholders represent only a small proportion of the people who live in the rural, regional and urban communities in which the forest industry operates, and the industry has impacts (positive and negative) across larger regions as well as for neighbouring landholders. People living in regions in which the forest industry operated were asked their views about the costs and benefits of the forest industry for their local region, and these views compared to perceptions of other industries commonly present in rural and regional communities (agriculture, tourism and mining).

The forest industry was generally viewed as having positive impacts on local jobs (76%), although the strength of opinion was no high, with most viewing the industry as slightly to moderately, rather than very, positive for jobs. Agriculture (87%), tourism (91%) and mining other than coal-seam gas (84%) were viewed as having more positive impacts on local employment than the forest industry.

Views about other impacts of the industry in local regions were more mixed. The most common response when asked about impacts on cost of living, friendliness of the community, and health of local residents, was 'neither positive or negative impact', with 46% to 47% giving this response. Of those who did report a positive or negative impact, positive impacts were more common:

- 27% felt the industry had positive impacts on costs of living compared to 7% reporting negative impacts;
- 29% felt the industry had a positive impact on friendliness and only 10% that it was negative
- 23% felt it was positive for health of local residents and 15% that it was negative.

For all three of these issues, forestry was viewed more positively than mining industries and less positively than agriculture or tourism.

When asked about impacts on land prices, local water quality, bushfire risk and health of the local environment, views were more mixed, and were slightly to moderately more likely to be negative than positive:

- 17% felt the industry was positive for local land prices and 18% that it was negative
- 15% felt the industry was positive for local water quality, 25% that it had negative impacts and 44% that it was neither impacting positively or negatively
- 29% felt the industry had a positive impact on bushfire risk (e.g. reducing it), 34% that it was negative and 27% were neutral
- 19% felt the industry had positive impacts on local environmental health, 35% that it had negative impacts and 34% were neutral.

Again, in general agriculture and tourism were viewed more positively, and mining industries more negatively, than the forest industry.

In three areas, people were much more likely to report negative than positive impacts:

- 45% felt the forest industry had negative impacts on attractiveness of the local landscape and only 22% that it had positive impacts; agriculture and tourism were viewed as having more positive impacts, and mining somewhat more negative impacts
- 53% felt the industry impacted negatively on local traffic (and 16% positively); similar proportions reported negative impacts on traffic from tourism and mining activities, and 30% from agriculture
- 58% felt the industry had negative impacts on local road quality while 16% felt it had positive impacts; mining was also viewed as having negative impacts, while agriculture and tourism were viewed as having slightly more positive impacts.

Overall, the forest industry is viewed as having more positive impacts than the mining industry, but more negative impacts than agriculture or tourism. Almost all industries were viewed as impacting negatively on roads, and positively on employment. Both forestry and mining were more often

viewed as having negative impacts on landscape amenity than tourism and agriculture. For most other issues – including environmental and human health, water quality, friendliness, cost of living, and land price impacts - forestry was viewed as having fewer positive impacts and more negative impacts than agriculture and tourism, but as having fewer negative impacts than mining.

People living in regions with some of the highest proportions of people employed in the industry typically viewed the industry as having more positive impacts on employment, including those living in the South West Slopes and Central Tablelands (NSW), Green Triangle, and Great Southern and Esperance. However, in many of these regions a higher than average proportion of residents also held negative views about some aspects of the industry, particularly impacts on roads.

Women were less likely than men to feel the forest industry had positive impacts on local jobs (72.0% compared to 80.6%). Farmers were more likely to feel the forest industry had negative impacts for employment, friendliness, traffic, road quality, water quality, bushfire risk and land prices than non-farmers, although they were also more likely to feel the industry contributed positively to friendliness and human health. Those who had not completed high school were more likely to express positive views about impacts of the industry on cost of living, friendliness, traffic, road quality, landscape amenity, water quality and bushfire risk. Those with a university degree were more likely to feel the industry impacted negatively on traffic, landscape amenity, water quality and health of the environment. In most cases differences in views between groups were relatively small.

Local experiences of the industry strongly influence social license for timber plantations: people who lived in regions with timber plantations were more likely to find timber plantations acceptable if they also felt they had more positive (or fewer negative) local impacts. In regions where there is little plantation-based industry, this association was not present, as expected. The strongest predictors of acceptability were perceptions of impacts of the industry on health of the local environment and local employment, suggesting these are two key areas to focus on in order to build social license.

There was also a reasonably strong association between social license for native forest harvesting and experiences of costs and benefits of this activity. As expected, this association was much stronger for people living in regions in which there is harvesting of native forests, and much weaker for those living in regions where the industry is wholly or mostly based on plantations.

Discussion and conclusions

There are much higher levels of social license for timber plantations than for native forest harvesting. Many of those who do not find native forest harvesting acceptable are likely to be at the blocking or withheld level of social license, rather than the tolerance level. Planting trees on good agricultural land for wood and paper production, however, has higher levels of social license. Both native forest harvesting and timber plantations are not strongly associated with activities involving renewable/environmentally friendly practices, suggesting messages that help increase awareness of forest industry activities as renewable rather than extractive may assist in building social license at the national scale. However, some caution is needed, with low social license of native forest harvesting likely to be in part a result of changing social values – which are not readily influenced by new messaging, and where there is potential to increase conflict if communication about the industry is seen to conflict with these values. Additionally, while concern about environmental impacts most strongly predict social license of native forest harvesting (and to a lesser extent

plantations), these concerns are often about issues other than renewability of the resource (for example concerns about impacts on animal habitat, plant diversity, water quality and soil health). The impact of the industry on employment was the second strongest predictor of acceptability of both native forest harvesting and timber plantations, suggesting a need to build more consistent communication about how the jobs generated by the industry contribute to communities, as well as recognition of those communities in which the industry manages large areas of land but does not generate large numbers of jobs.

While the findings suggest that social license at local scale is in part a result of broader 'narratives' about the industry that are generated at larger scales and communicated through the media, they also suggest that, consistent with multiple past studies, practices at local scale influence social license, particularly for timber plantations. To build social license therefore requires addressing local scale concerns, as well as larger-scale responses to concerns communicated at the national or state level via media and peak stakeholder groups. The most effective strategies for building social license will involve specific actions at local scale to improve practices and ensure they are consistent with social values, which then provides a basis for larger scale communication to improve understanding of the industry and its practices. This is particularly important for obtaining social license from rural landholders, with investment needed in ensuring the industry manages land in ways consistent with rural values about being a good neighbour and a good land manager.

1.0 Introduction

Australia's forest, wood and paper industries are changing rapidly, as are many other parts of Australia's economy. Perceptions of the industry, including the extent to which its operations are viewed as appropriate and acceptable, also change over time. To operate successfully in day-to-day activities, the industry needs to have a 'social license to operate'. An industry with high levels of active support from the communities in which it operates, from key stakeholder groups and governments, is likely to operate more successfully than one which is regularly the source of controversy and debate. It is important to understand community perceptions of the industry in order to assess the extent to which the industry has a license to operate.

This report examines whether key parts of the Australian forest industry have a social license to operate, and how the extent of this license varies across different region and amongst different groups. It also examines whether the costs and benefits experienced by those who live near forestry operations – on neighbouring land, or in communities in which the industry operates - influence its social license to operate.

This report deliberately focuses on the 'primary production' stage of the industry – in which trees are grown and harvested for wood and paper production - as this is often the primary focus of public debates about the industry. We focus on understanding the social acceptability of two key primary production activities that form part of the forest industry, as well as a third comparison activity:

- Growing and harvesting of plantations for wood and paper production
- Harvesting of native forests for wood and paper products
- Planting trees on cleared agricultural land for environmental purposes.

The views of people living in regions across Australia in which the forest industry operates are examined using data collected as part of the nationwide annual Regional Wellbeing Survey (RWS).

The next section defines what a social license is, identifies different levels and types of social license, and reviews the factors known to influence social license, including findings of previous work examining social license in the forest industry. Following description of the methods used to collect and analyse data, the study findings are presented in three sections:

- First, the overall extent to which native forest harvesting, timber plantations and environmental tree plantings have a social license is examined, including how this varies between regions and amongst different groups of people.
- Second, views of people who live on rural properties neighbouring plantations or native forest about their forest industry neighbours are then examined, focusing on the costs and benefits they believe result from neighbouring forest industry activities compared to from other types of neighbours such as farmers or rural residential landholders.
- Third, perceptions of the costs and benefits of the forest industry for the local communities in which it operates are analysed, based on the views of people who live in these communities.

The discussion then focuses on understanding implications of the findings for building social license.

2.0 Understanding social license

While many people identify the importance of having a social license to operate, what a social license is and how it can be measured often remains poorly defined. There has been limited work exploring social license. Most studies to date have focused on defining and describing social license, while fewer have examined what works to achieve or maintain a social license. A large proportion of studies have focused on studying an activity (often mining) taking place at a single defined geographic site (e.g. one mine site): some caution is needed as their findings will not always be relevant to forest industries that undertake their business activities at multiple sites across often large geographic areas (Dare et al. 2014). This section examines what a social license is, the levels of social license that may occur, the widely varying nature of social license that may be needed from different groups and at different scales, and factors known to influence whether or not a social license is given for an activity. Findings of previous studies examining the forest industry are reviewed, followed by identifying key issues that should be examined to better understand social license for key Australian forest industry activities.

2.1 What is a social license?

A 'social license to operate', or social license, is most simply defined as the extent to which an activity is considered socially acceptable. An 'activity' may be a development such as a new mine, the building of new abattoir or other manufacturing factory, or new road infrastructure. Alternatively, the activity can be the day-to-day operations of a business, such as a farm, forestry operation or mine site operation. Activities can also be industry-wide, with the day-to-day activities of multiple businesses forming part of an industry grouped together, and a person forming a judgment about how acceptable or unacceptable that industry is as a whole.

Contemporary use of the term social license originated with James Cooney in 1997 in response to community concerns about the mining industry (Boutilier 2014). Since then, the social license concept has spread rapidly, and is now used across many primary industries (i.e. mining, coal seam gas, forestry, agriculture). It is commonly used in discussions and debates in which groups of people seek to influence business practices and/or public policy by making public claims that a specific activity or practice (such as fracking, clearfelling trees for timber production, or live export of livestock) is not acceptable.

A social license is important for businesses, enabling ongoing access to resources (natural, financial and human), strong community and stakeholder relationships, and providing positive corporate reputation and associated market competitiveness (Joyce & Thompson 2000; Gunningham et al. 2004; Esteves & Vanclay 2009). Without a social license, stakeholder pressure associated with lack of acceptance of an activity can lead to increased public scrutiny, additional regulation or reduced market access (Gunningham et al. 2004; Vanclay 2014), which can be time consuming, expensive and significantly damage the reputation of individual businesses or of an entire industry.

Social license is often defined, interpreted and measured differently across studies (Owen and Kemp 2013; Bice 2014), leading to some criticism of social license as an overly inflated and poorly defined concept (Owen and Kemp 2013). Gunningham and colleagues defined social license to operate as being the "demands on and expectations for a business enterprise that emerge from neighbourhoods, environmental groups, community members, and other elements of the

surrounding civil society" (2004, p. 308). More recently, following research in the Australian mining sector, Moffat and Zhang (2014) defined social license as an intangible and temporal indicator of the community's acceptance of a company's activities. These definitions emphasise the role of multiple communities or stakeholder groups in the making of social license claim(s), and the dynamic nature of social license (Dare et al. 2014). Despite differences in how social license is defined, a key commonality is that it is typically defined as being the extent to which a person, group or community accepts or approves a particular activity, with acceptance/approval taking forms from tolerance to active support. This means that community perceptions must be examined to understand what level of social license an activity has at a given point in time.

2.2 Defining levels of social license

Most analyses of social license draw on the influential work of Thomson and Boutilier (2011), who put forward a model arguing that social license has four levels: withheld/ withdrawn, acceptance, approval and psychological identification. The withheld/ withdrawn level of social license means that there is no social license; if there was once one it is no longer granted. The acceptance level implies a conditional approval for the activity to occur, but aspects of it may be criticised, and it will be heavily scrutinised. The approval level is one at which there is approval of the activity that translates into stakeholders or community members supporting that activity, or even actively helping facilitate it. On rare occasions psychological identification can be achieved: in these circumstances social license is so strong that stakeholders or communities co-identify with the activity/organisation, going beyond support to feel a strong personal connection to the activity, industry or a particular organisation (Boutilier et al. 2015).

This model has formed a basis for making arguments about what is needed to 'move up' between levels of social license, and what leads to an activity losing social license, for example moving from approval down to acceptance or to having social license withdrawn completely.

In their 15-year study of a Bolivian mine, Thomson and Boutilier identified three central components that contributed to social license: legitimacy, credibility and trust. In order to move up one or more levels of social license (for example from withdrawn to acceptance, or from acceptance to approval), they argued that an organisation (or an industry) must establish the legitimacy and credibility of the activities they engage in. This legitimacy and credibility is required to gain acceptance and approval. Once credibility is established, they argued that they must then gain the trust of the community and other stakeholders in order for stakeholders to co-identify with the organisation and hence achieve psychological identification (Thomson and Boutilier 2011; Moffat and Zhang 2014).

In practice this model has some limitations, in particular the assumption that the actions of an organisation can always overcome concerns about credibility of a practice, and that views of stakeholders or communities about the activities of an organisation will 'jump' from withholding a license to overall acceptance. In particular, this model does not recognise that in some cases societal values may change such that a given activity will not be tolerated irrespective of the actions of an organisations (e.g. Ford and Williams 2016). Given this, we propose a more detailed model of social license to operate in which we add two extra levels to Thomson and Boutilier's model: a 'blocked' level that represents deeply held perceptions that are extremely unlikely to change no matter the efforts of individual organisations or an industry as they are based on deeply held values about what is right or wrong that cannot readily be changed by an industry; and a 'tolerance' level at which a

community does not necessarily accept an activity, but do not feel strongly enough about it to actively oppose or block that activity. At this 'tolerance' level, stakeholders or communities understand the activity is legitimate from a legal viewpoint, but do not accept or approve of the perceived benefits of the activity. This revised model is shown in Figure 1.

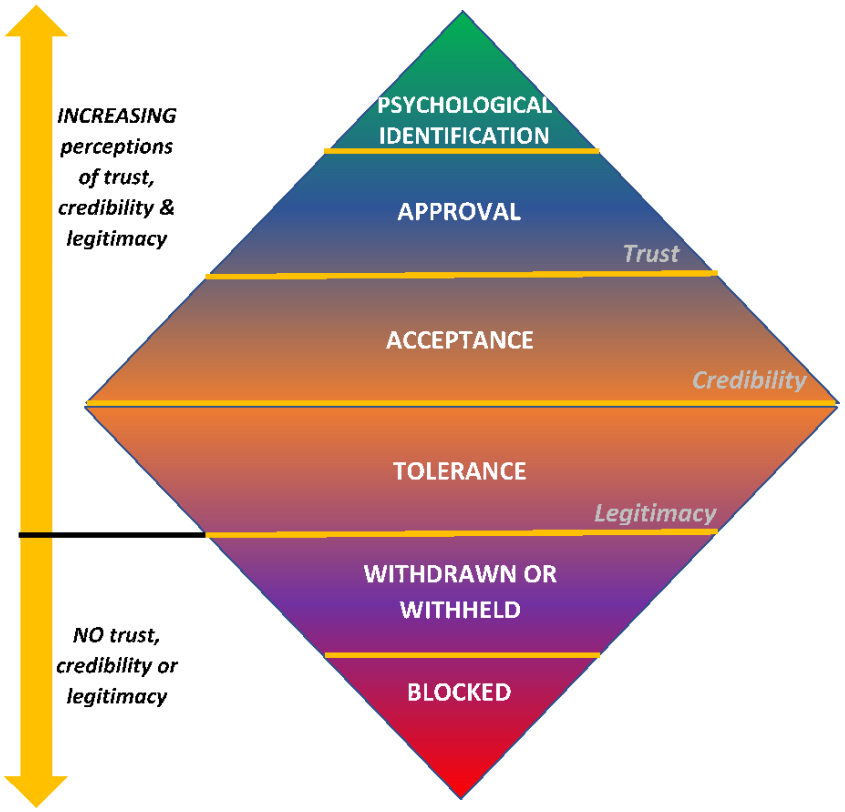

Figure 1 Six levels of social license (adapted from Thomson and Boutilier 2011)

An organisation or industry does not need all stakeholders to grant the same level of social license to be able to operate effectively. As social license has many levels, it follows that the same level of social license may not be needed from every person for an industry or organisation to operate successfully. It is important to carefully identify what level of social license is needed from different stakeholders and communities for an activity to be carried out successfully. For example, a plantation company may be able to operate effectively if they have tolerance or low acceptance from environmental non-government organisations, as this means they will receive robust feedback but are unlikely to have their plantation management activities actively opposed. However, they may need a higher level of social license from farmers whose land they seek to establish plantations on in order to operate effectively: local farmers may be unlikely to be willing to work with plantation companies through actions such as joint ventures to grow plantations unless they reach the level of approval of the activity.

2.3 Achieving social license at different scales

Social license may need to be achieved at a number of scales: there is no 'single' social license for an activity but rather a series of social licenses that can be granted at scales from the micro scale (i.e. neighbouring landholders or a local community with a nearby forestry operation) to the macro scale (i.e. key stakeholders setting policy and influencing public debate about an industry nationally), as shown in Figure 2 (see Dare et al. 2014).

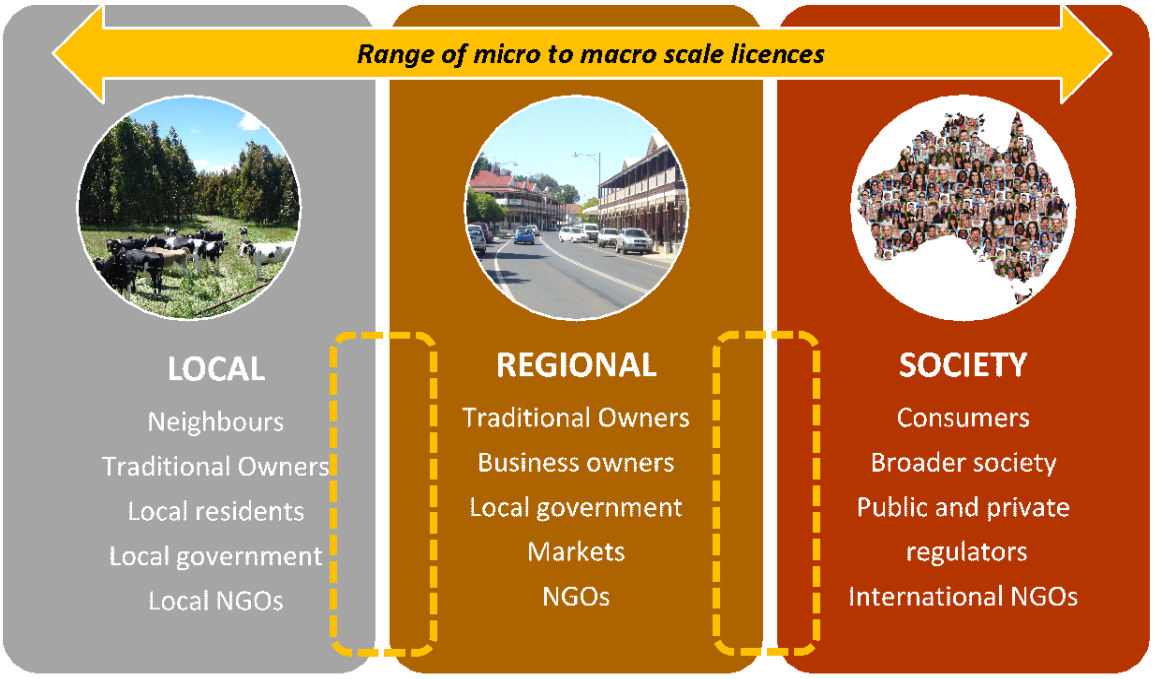

Figure 2 Multiple scales of social license (*adapted from Dare, Schirmer & Vanclay 2014)*

This means that in addition to identifying the level of social license needed from different groups, it is important to identify at what scale that license is needed. For example, to be able to operate effectively, a company may need acceptance not only from local communities in which it operates, but also from peak stakeholder groups who influence market demand for its products at a national scale and who may have potential to disrupt local operations if they oppose particular practices, despite not being local residents. Social license also crosses scale: gaining social license at one scale can help improve levels of social license at other scales. For example, if social license is gained locally, local residents or stakeholders at local scale are more likely to provide positive feedback to stakeholders operating at national scales, increasing the likelihood of achieving social license at these larger scales (Dare et al. 2014).

2.4 Factors known to influence social license

In addition to measuring social license and identifying social license objectives (the levels of social license being sought from different groups and at different scales), the factors influencing current levels of social license for the industry should be examined.

Most research identifying factors influencing social license has focused on the mining sector, and often on processes occurring at the local scale around a specific mine site, rather than examining license across scales. Three core areas have emerged from this work around what is needed for social

license. Building on the work of Thomson and Boutilier (2011), further developed in specific studies (e.g. Moffat and Zhang 2014, Gehman et al. 2017), three interacting factors have been identified as key to achieving a social license:

- Legitimacy: Being viewed as an organisation or industry who are conducting a legitimate activity
- Trust: Being trusted by those from whom social license is sought, with trust in turn often identified as strongly influenced by the quality of engagement and communication by the organisation seeking social license
- Credibility: Being viewed as 'believable' in the sense that the activity is trusted as having benefits and as not having unacceptable negative impacts on things a person or group care about.

Legitimacy is a multi-faceted concept that is broken into two forms by Thomson and Boutilier (2011), economic legitimacy and socio-political legitimacy. Economic legitimacy means the activity is believed to provide economic benefits to a person or community beyond the benefits received by the company, for example through distribution of profits or creation of jobs. This has clear overlap with credibility, which examines the broader range of benefits and costs an activity is perceived to have. Socio-political legitimacy focuses on whether the activity is viewed as having positive impacts on the overall wellbeing of a region, and is conducted in ways that are respectful and fair. This again has overlap with the idea of being a credible operator, as if an organisation is believe to act in a non-legitimate manner, for example failing to employ people from particular groups, or harming culturally important assets, it is unlikely to be viewed as credible. While economic legitimacy will be high is an industry is viewed as providing jobs or financial benefit, socio-political legitimacy will be high it is viewed as managing its activities to protect all relevant values (including non-economic) and be equitable in the benefits and costs resulting from the activity.

Trust, like legitimacy, is a complex concept and can be broken into differing types of trust. The types of trust most commonly discussed in the social license literature are interactional trust and institutionalised trust (Thomson and Boutilier 2011, Dare et al. 2014). Interactional trust is achieved when an organisation's or industry's representatives have positive, high quality interactions with the people granting social license; these positive interactions build trust even if there may be some disagreements about some aspects of the operations of an organisation. However, while this may build social license in the form of localised trust of specific activities that are undertaken by people with whom good relationships are developed, ideally institutionalised trust is also needed. Institutionalised trust occurs when these relationships are formalised into processes that are maintained over time by the organisations involved, rather than relying on individual people. Having positive interactions with multiple organisations within an industry, through formalised processes such as agreed processes of engagement, can build confidence that the industry as a whole – rather than just some specific individuals within the industry - can be trusted to interact in a positive and responsible manner (see also Dare et al. 2014). In the forest industry, for example, interactional trust would be achieved by an individual employee of a forestry business if they have positive interactions with landholders neighbouring the plantation or forest areas they manage. Institutionalised trust would occur if all companies in that region agreed to follow a 'good neighbour agreement' that sets out rights and responsibilities and codifies expected behaviours that follow what the individual employee was doing, and requires this across the industry over time.

Credibility is achieved if an activity is viewed as understandable, appropriate and trustworthy. This in turn depends on whether a person feels they understand the costs and benefits of an activity, feels these costs and benefits are appropriate, and trusts the organisations undertaking the activity. This means that credibility often requires trust – for example, perceptions of costs versus benefits are likely to be more negative in situations where there is low trust, or where the legitimacy of the organisation or industry in providing key benefits such as jobs or other benefits is in question. For example, Thomson and Boutilier (2011) argued that credibility was achieved by a mining company over many years through building strong relationships that created institutionalised trust, through fulfilling expectations around benefits related to jobs, and through fulfilling expectations around how the company would manage issues important to the local community. This ability to build 'embedded credibility' over a long time period, through gradually building a relationship between a single community and a single company, however, does not necessarily apply to the forest industry, in which perceptions of credibility may be made based on what is read in the media about the industry as a whole, rather than based on direct interaction with industry representatives from a single company.

The way these three concepts can be applied to the forest industry is shown in Figure 3, which suggests key needs related to legitimacy, trust and credibility in the forest industry.

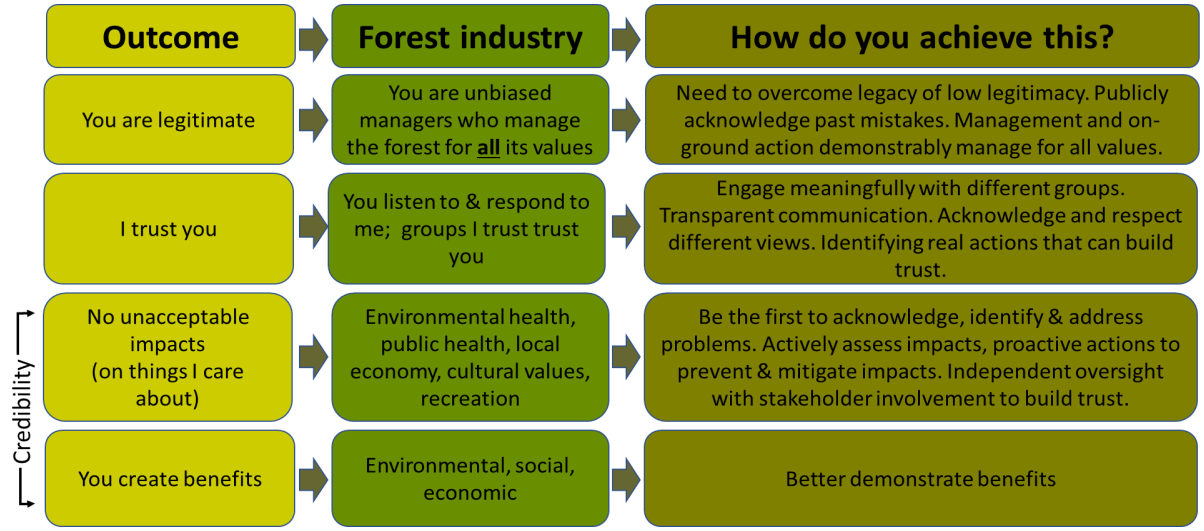

Figure 3 Factors influencing social license outcomes

This report examines social license with a focus on assessing whether perceptions of the forest industry identified as important for legitimacy, credibility and trust in previous studies (see Section 2.5) are positive or negative.

2.5 Social license in the forest industry: lessons from previous studies

A relatively small number of studies have examined social license in the forest industry (e.g. Cashore et al. 2001; Dare et al. 2014; Edwards and Lacey 2014; Ford and Williams 2016; Lacey et al. 2016; Lester 2016; Moffat et al. 2016). Many of these studies have identified similar lessons to the broader literature, in other words have reinforced the importance of trust, legitimacy and credibility for achieving social license at acceptance or higher levels. However, these studies have also identified that achieving a social license in the forest industry is likely to have some differing requirements to other social license situations.

Forest management occurs over an extended time period, in many instances over multiple generations (Moffat et al. 2016), and also occur over more diverse and geographically spread locations (Dare et al. 2014). This means it is important to recognise the temporary nature of associated social license(s), with levels of social license likely to change over time as community and societal expectations change, as well as differing needs of diverse communities in which the industry operates (Dare et al. 2014; Edwards and Lacey 2014; Ford and Williams 2016).

Studies of the forest industry, due to their focus on an industry as a whole rather than on single companies, have also highlighted the important role government plays in establishing a legislative and policy space that can either support or reduce potential for social license (Lacey et al. 2016). Most of these have identified that industries need to go 'above and beyond regulatory compliance' to achieve high levels of social license, but have rarely examined how regulatory and policy environments could be better used to support building trust, legitimacy or credibility, for example through ensuring the industry is viewed as one that has substantial oversight from independent regulators. Moffat et al. (2016) pointed out that the potential for this varies depending on the scale of operation of an industry and its supply chain, for example between regulation of locally managed community forests and regulation of international import and export of harvested forest product.

Studies of the forest industry have also highlighted the important role of the media in influencing social license, something less commonly focused on in studies of the mining sector. The media can influence social license through its selection and framing of news and the way information is shaped for audiences (Lester 2016). Lester (2016) argued that social license claims are a poorly defined and easily contested 'symbol', making them readily influenced by media reports. Similarly, Dare et al. (2014) argued that the role of the media in shaping how claims about social license are viewed by an "amorphous 'affected public'" (2016, p. 549) needs to be better examined in order to understand the social license of the industry. The lack of focus on the role of the media in the social license literature is likely in part due to the focus on local communities, rather than license at larger scales, in much of the literature. Lester argued that the concept of a social license needs to move beyond the rhetoric of a 'local community', in which it is assumed that it is only what happens in that community that influences social license, if it is to become more meaningful in the forest sector context (see also Ford and Williams 2016; Moffat et al. 2016). Similarly, Dare et al. (2014) identified that rather than individual companies being able to establish a social license that was independent of views about the industry as a whole, most forest managers felt that perceptions of the forest industry as a whole, often received through the media, were strong influences on social license at the local scales at which they were conducting on-ground forestry activities.

Ford and Williams (2016) argue that in the forest industry context, understanding social license is likely to require examining values in more depth than typically occurs in much of the social license literature. While many studies have identified the importance of building trust (Dare et al. 2014; Moffat and Zhang 2014), ensuring procedural fairness (Lacey and Lamont 2014), and engaging positively with the community (Dare et al. 2014), little has examined how a person's overall value positions – argued by Ford and Williams (2016) to be a key starting point to negotiating social licenses – influence overall social license judgments. They further argue that existing social license literature focuses too much on the high level ideals 'needed' to achieve a social license (ie. trust, procedural fairness), and that too little emphasis has been given to how to achieve these normative ideals in day-to-day practice within an industry that operates across extended geographic and

temporal scales. They argued that better understanding expectations of individuals and communities that emerge from their values can provide a better basis for designing strategies that succeed in building the trust, legitimacy and credibility required for social license.

These studies highlight the importance of examining views of the industry as a whole and understanding broader community views as well as specific local experiences of the industry. The need to understand values and cultural context is also clear. A key gap in previous studies is that none have sought to identify the level of social license held in Australia for the forest industry across a large sample of people, or examined perceptions of costs and benefits of the industry related to known social values important to rural communities that may be contributing to the level of social license currently held.

2.6 Perceptions likely to influence social license of the forest industry

This study examines current levels of social license for three activities, two of which are specific to the forest industry (harvesting timber in native forests, and establishing trees on good agricultural land to produce wood and paper) and one which involves activities undertaken for non-commercial purposes (planting trees on good agricultural land for environmental purposes). It also examines key factors contributing to current levels of social license, by examining perceptions of the costs and benefits of the industry. The costs and benefits asked about were identified based on review of previous studies that have examined key concerns raised about forest industry activities, as well as identifying benefits of the industry. In particular, previous studies that help provide insight into *expectations* around costs and benefits were reviewed, as these help identify the social norms and expectations in rural communities that need to be met by the industry in their day-to-day practices if they are to achieve legitimacy, trust and credibility. These social norms and expectations emerge from stakeholder values about what it means to be a good citizen and to have a good community and healthy environment.

Based on review of past studies, two scales of costs and benefits likely to be relevant to understanding social license were identified:

- Neighbour perceptions: costs and benefits the forest industry was believed to have for neighbouring landholders.
- Community perceptions: costs and benefits the industry is believed to have for the local communities in which it operates.

These ‘small scale’ perceptions are likely to be important contributors to social license not only at the neighbour or local community scale, but also at larger scales, with past studies noting that localised issues and concerns are often drawn on to drive large-scale national debates about the industry (see for example Schirmer 2013).

2.6.1 Being a ‘good neighbour’

Past studies have identified that a key area influencing support versus opposition to expansion of plantations on agricultural land in rural communities is perceptions of whether plantation companies are ‘good neighbours’. In particular, past studies have identified that concern about perceived failure of plantation companies to follow practices expected of good neighbours in rural communities was a key driver of social conflict about plantation expansion in rural communities (e.g. Schirmer and Tonts 2003; Leys and Vanclay 2010), with this conflict an indicator of low levels of social license.

There are often strong social and cultural expectations and values amongst residents of rural communities about the actions that a good rural landholder should engage in. Specifically, past studies have identified that the following activities are important to assess to understand whether forest industry activities are consistent with being a good neighbour (Charnley 2006; Dare et al. 2011a,b; Gordon et al. 2012, 2013; Leys and Vanclay 2010; Schirmer 2007, 2013; Schirmer and Tonts 2003; Schirmer et al. 2015; Tonts and Schirmer 2005; Williams 2011, 2014; Williams and Schirmer 2012):

- **Being a 'good neighbour':** The overall perception of whether the forest industry is viewed as a 'good neighbour' should be examined, as a common finding in past work was that social concern about plantation expansion is often associated with concerns about plantation companies not being good neighbours, with this term embodying a range of social norms and expectations about appropriate behaviours and practices in rural communities
- **Helping out neighbours:** Providing assistance to neighbours when needed is an important social norm in rural communities, and a key aspect of being a good neighbour; past studies have identified poor perceptions of plantation companies resulting from perceived failure of those companies to provide assistance to neighbours in the same way that neighbouring farmers often helped each other.
- **Managing pest/feral animals, weeds, bushfire risk and boundary fences:** Views about whether a neighbour is appropriately managing these issues on their property influence overall perceptions of their acceptability as a neighbour, as the extent to which a landholder manages these issues on their own properties affects the extent to which they present a problem or risk for their neighbours.
- **Consulting before undertaking activities:** Good neighbours are typically expected to let their neighbour know before undertaking activities that might be different to usual, or might have potential to cause disruption or concern for their neighbour.
- **Impact on landscape amenity:** Some studies have identified that plantations are not viewed as pleasant to look at compared to farmland by many residents of rural communities, and that neighbours can feel isolated due to views across landscape being reduced by growing plantations.
- **Taking care of land and water quality:** Rural landholders are expected to conform to expected social norms for taking care of land and water quality on their property, with this management having potential to impact neighbours (for example through affecting the quality of watering entering a neighbour's property).
- **Dust, smoke and noise:** Previous studies have identified that concerns over the amount of dust, smoke or noise generated by a neighbour can affect perceptions of their activities.
- **Negative impacts and property damage:** Many of the issues listed above focus on whether a neighbour is managing their land in ways expected to minimise risk of negative impacts, costs or damage to their neighbours. Some past studies have also identified instances in which conflict about expansion of plantations has been associated with claims about direct negative impacts or property damage believed to have been caused to neighbouring landholders by plantation companies.

2.6.2 Contributing positively to local communities

Several past studies have identified that perceptions about the costs and benefits of the forest for local communities in which it operates influence how positively or negatively it is perceived. The

costs and benefits identified as important in past studies include (Charnley 2006; Dare et al. 2011a,b; Gordon et al. 2012, 2013; Leys and Vanclay 2010; Schirmer 2007, 2013; Schirmer and Tonts 2003; Schirmer et al. 2015; Tonts and Schirmer 2005; Williams 2011, 2014; Williams and Schirmer 2012):

- **Jobs:** The extent to which the industry is viewed as contributing positively to jobs, versus causing net loss of jobs, is a key issue affecting perceptions of the industry. Past expansion of plantations in Australia was accompanied by social debate about whether plantations created the same or fewer jobs as the agricultural land uses they replaced, for example.
- **Land prices:** Expansion of plantations on good agricultural land has been argued to lead to rapid growth in rural land prices, and has been associated with concern about negative impacts for farmers competing in the land market against plantation companies paying high prices (as well as recognition of benefits for farmers who receive higher prices when selling land).
- **Cost of living:** An industry undergoing rapid change, particularly expansion of processing facilities, can create increased demand that in turn increases costs of living in rural communities. For example, rapid increases in rental prices of homes in communities experiencing industry expansion and associated rapid in-migration of new workers have caused concern in the past.
- **Friendliness:** Shifting from agricultural land uses to timber plantations has been associated with concern about changes in friendliness and social networks in rural communities, with previous residents of land converted to plantations sometimes shifting elsewhere, and new residents not always integrating successfully into the rural community. Loss of friendliness can also be associated with concerns about whether expansion of plantations is associated with net loss of population in rural communities.
- **Human health:** Concerns about the use of chemicals or other practices that are viewed as impacting human health will affect social license.
- **Local water quality, bushfire risk, landscape amenity:** Similar concerns to those occurring at neighbour scales have been identified as occurring at the scale of the local community
- **Health of local environment:** Concerns about impacts of the forest industry on health of the environment are often cited as a key issue driving perceptions of overall acceptability of the industry.
- **Road traffic and road quality:** Concerns about impacts of log trucks on local roads, in terms of both traffic volume and associated safety, and impacts on road quality and maintenance costs, have been identified in several previous studies.

2.7 Conclusions

To understand social license of the forest industry, it is important to identify the types of activities that will be assessed, the level of social license to be assessed, and to assess the perceptions that may be contributing to low or high legitimacy, credibility or trust in the forest industry.

3.0 Methods

Social license was examined using data collected in a nationwide survey of adult Australians, the Regional Wellbeing Survey. Quantitative data were collected via the University of Canberra's annual Regional Wellbeing Survey (RWS). Since 2013, the RWS has examined wellbeing, resilience and liveability in Australia's rural and regional areas, including how people experiences different industries, policies and the impacts of changes occurring in their local regions. Since 2013, the survey has expanded to include a sample of people living in major cities as well as those living in regional and rural areas.

Incorporating questions about the forest industry in a larger 'omnibus' survey reduced potential for survey results to be biased to those with a particular interest in the forest industry, as questions about the forest industry formed a small part of the survey, and survey materials did not specifically identify the forest industry as a particular focus in 2016, the year the survey asked questions about the industry. However, only a limited number of questions about the forest industry could be asked due to the large number of questions on other topics also included in the survey.

3.1 Survey question design

Survey items relevant to the forest industry were initially drafted by the project team. Draft survey items were then tested in focus groups, revised, professionally formatted, and formally pilot tested with a sample of 77 people. Following pilot testing, a final revision of items was undertaken before the survey was launched.

3.2 Collecting survey data

The Regional Wellbeing Survey is open to adult residents of Australia. Most survey participants are from rural and regional Australia, defined as all areas of Australia outside the capital cities of Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra. A comparison sample was also collected from these large cities. In 2016, participants could complete the survey between October 12th and December 1st. They could complete the survey online or on paper.

Questions about the forest industry were not asked of every survey participant, and therefore the total sample size varies for different questions analysed in this report. Omnibus surveys such as the RWS typically have large numbers of participants, and not all survey questions are asked of every participant. In 2016, in the RWS, online survey participants were given the option of choosing to complete a short or regular-length version of the survey. The short version contained 'core' survey items that were included in all survey panels. The regular length version also included some questions that did not need to be asked of all participants in order to obtain a robust sample. Paper survey participants were assigned to one of four survey 'panels'. Panel 1 was completed by all non-farmers and included all survey items other than those that were relevant only to farmers. Farmers completed one of three 'farmer panels' (Panel 2, 3 and 4 of the survey). Each farmer panel included all questions that appeared on the short online survey, as well as one-third of other topics in the regular length online survey. Forestry-related questions were asked of the following sub-samples of survey participants:

- Acceptability of three activities (native forest harvesting, timber plantations, environmental tree planting): Asked of every survey participant (online and paper)

- Experiences of the forest industry in local community: Asked of all those completing the regular-length online survey, and those completing three of the four paper survey panels (the fourth survey panel was sent to farmers living in areas with little to no forest industry activity)
- Experiences of the forest industry as a neighbour: Asked of all rural landholders who completed the regular-length online survey, and those completing three of the four paper survey panels (the fourth survey panel was sent to those living in areas with little/no forest industry activity).

3.3 Sample frame

When recruiting survey participants, a sampling frame was first established. In 2016, the sampling frame for the RWS included a random sample from across Australia, stratified by population density (with more intensive sampling of regional and rural populations compared to urban populations). In addition, several regions were specifically oversampled, with a larger number of respondents sought than in other locations across Australia. In 2016, intensively sampled regions were those where a large sample was needed for the purposes of different studies which were collecting data via the RWS, and included over-sampling of (i) Victorian rural and regional areas (supported by funding from the Victorian government), (ii) communities in Victoria, Tasmania, South Australia, Western Australia, Queensland and the South West Slopes of NSW with high numbers of jobs in the forest industry (for this study); and (ii) three locations where mechanical fuel load reduction trials were being conducted (near Wauchope NSW, Cann River Victoria and Collie Western Australia), with intensive sampling from the local government areas within a one hour drive of these locations (supported by funding from the NSW Department of Industry). In addition, farmers were deliberately over-sampled. The sample frame thus involved recruiting stratified random samples from different regions and groups. Weighting of the data set (described in detail in later parts of this section) was then used to correct deliberate biases introduced due to the stratification of the sample, as well as to correct unintentional biases.

3.4 Recruitment of survey participants

Participants were recruited using the following methods:

- **Flyers and printed surveys delivered to letterboxes**. These were delivered to randomly selected residences. In intensively sampled regions, flyers were delivered to every letterbox in designated postal areas. In non-intensively sampled regions, flyers were sent to addresses selected at random from the publicly available mailing database 'Aus-On-Disc'. Printed surveys were mailed directly to a random sample of farmers selected from the FarmBase database.

- **Email promotion**. Previous Regional Wellbeing Survey participants who had given permission to be contacted about the survey again were emailed an invitation to participate in the survey. In addition, rural and regional organisations throughout Australia were asked to promote the survey to their online networks by forwarding an email encouraging participation in the survey.

- **Newsletter, social media and traditional media promotion**. Some organisations chose to post a notice about the survey on their social media sites (Facebook, Twitter), an online

version of the flyer on the homepage of their website, or included an item in their newsletter. While this was not a primary means of recruiting participants, it acted to increase awareness of the survey and in particular to increase responses from those sent flyers and printed surveys as part of the random sampling process.

- **Prize draw**. To increase survey participation, a prize draw was offered. This can reduce bias in responses as some participants will complete a survey in order to enter a prize draw even when not highly interested in the survey topic/s being asked about. A prize pool of $9,000, comprised of 20 gift cards to differing values, was offered. Winners could choose a Flight Centre, Coles- Myer, WISH or Bunnings gift card.

3.5 Survey responses

A total of 13,302 people took part in the 2016 Regional Wellbeing Survey. Over 11,500 rural and regional Australians answered questions about acceptability of forestry related activities (planting trees on good agricultural land for environmental purposes, planting trees on good agricultural land to produce wood and paper products, and logging of native forests for wood production). Over 2,000 indicated that forestry was an important industry in their local community and answered questions about the perceived positive and negative impacts of the forest industry in their local community. Of the 3,113 rural landholders included in the survey, almost all had farming or rural residential land neighbouring them, while 159 also neighboured a native forest that is sometimes logged, 261 neighboured an area of timber plantation or an area of land leased to a plantation company, and 393 neighboured a National Park. Individual response figures are given when results are presented for each question throughout this report.

As the RWS uses non-traditional survey recruitment methods, it is not possible to estimate the total number of people who received a request asking them to consider taking part in the survey, and hence it is not possible to accurately estimate a survey response rate. Response rates are also a relatively poor indication of the quality or representativeness of survey responses (Johnson and Wislar, 2012). Instead, representativeness was first examined by comparing the characteristics of survey respondents to those of people living in rural and regional Australia, followed by weighting of the data to correct intentional and unintentional biases. This analysis considered both the groups and regions that are deliberately oversampled in the survey. As intended, the survey sample over-represented farmers and Victorians (Table 1). There was also an unintended bias towards older and female respondents, an issue that is observed in many surveys. While the biases identified are expected, they need to be addressed when analysing data. The methods used to do this are described in the next section.

3.6 Data analysis

Prior to data analysis, Regional Wellbeing Survey data were processed and cleaned. This involved entering data from paper surveys into the online survey form, and checking data for errors; formatting survey data (both online and paper), with responses to each survey item checked for consistency, coded numerically where appropriate, and any missing data identified; and removal of invalid surveys. All surveys in which a participant had completed fewer than 10 items were removed. Duplicate surveys (for example, in which a participant began the survey more than once) were also removed, as were any responses in which participants had deliberately completed the survey multiple times. The cleaned data set was then analysed. Analysis of data for this report was

undertaken using Microsoft Excel and SPSS. In bivariates analysis used to explore differences in views among different groups of people, Spearman's rho (r_s) was used to examine correlations between two ordinal/continuous variables.

Table 1 Comparison of Regional Wellbeing Survey respondents to characteristics of rural and regional Australians

Characteristic		Rural and regional Australia, 2016[1]	Regional Wellbeing Survey, 2016
State	NSW & ACT	28.3%	27.0%
	Vic	20.5%	28.4%
	Qld	25.5%	16.1%
	SA	6.7%	11.6%
	WA & NT	11.3%	9.2%
	Tas	7.7%	7.7%
Gender	Female	50.6%	54.7%
	Male	49.4%	45.3%
Age	18-39	32.0%	12.6%
	40-54	25.9%	23.9%
	55-64	17.8%	27.7%
	65+	24.3%	35.8%
Working as a farmer	Farmer	2.5%	40.7%
	Non-farmer	97.5%	59.3%

[1]Data source: Australian Bureau of Statistics *Census of Population and Housing* 2016. Data accessed via TableBuilderPro. Data were calculated for rural and regional Australia and exclude people living in the cities of Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra.

3.7 Data weighting

A key part of data analysis was the weighting of data where appropriate. Weighting has been applied to all analyses in this report, unless otherwise specified. 'Weighting' refers to a statistical process in which known biases in the responses received are corrected for. Weighting was used to correct for both intentional over-sampling (of farmers and some regions), and non-intentional biases (the bias towards female and older respondents). The weighting of responses involves adjusting the relative contribution each survey respondent makes to the whole when analysing survey results, so analysis of the sample more accurately represents the population from which it was drawn (in this case, people living in rural and regional Australia). Weighting doesn't change the answers people gave to survey items.

Data were weighted using GREGWT, a generalised regression weighting procedure developed by the Australian Bureau of Statistics. GREGWT is a SAS macro that generates survey weights so that survey estimates agree with external benchmarks, which were obtained from the 2011 Australian Bureau of Statistics (ABS) Census of Population and Housing. To control for extreme weights, weights were Winsorised at the 95th percentile, thus limiting the effect of unrealistically high weights.

4.0 Social license of the forest industry

This section examines levels of social license held by different parts of the forest industry. First, the choice to examine social license for three specific activities is explained, followed by examining overall findings, and comparing levels of social license by socio-demographic group and by region.

4.1 Types of social license examined

There is no single level of social license for the entire forest industry, with the industry encompassing activities ranging from on-ground management of native forest and plantations, to production of wood and paper products in a range of processing facilities located around the country, and import and sale of wood and paper produced in other countries. The level of social license held by the industry depends on what *part* of the forest industry is examined, with differing levels of social license likely to be present for different parts of the industry. Key points of differentiation likely to affect levels of social license include:

- Supply chain location
- Type of forest/plantation
- Purpose of forest/plantation.

4.1.1 Supply chain differences

Social license changes through the supply chain. In general, debate and conflict about the forest industry is focused on the 'forest floor' – particularly the point of forest management and harvest. In comparison, media discussions about wood and paper processing facilities tend to be more positive and there is substantially less social conflict around the processing of wood and paper products, although there have been some high profile social conflicts focused on establishment of pulp mills - most notably about the proposed pulp mill in Wesley Vale in the late 1980s, and the proposed Gunns pulp mill in the 2000s - and more recent concern about proposals to establish biomass energy facilities using native forest materials as feedstock. Social license challenges therefore appear to be predominantly focused on the first part of the supply chain, the management and harvest of forest and plantations. In general, there appears to be greater social license for processing of wood and paper products, and for the resulting products, with the exception of specific high profile disputes about the establishment of specific processing facilities.

4.1.2 Type of forest/plantation

Much of the public debate about forest management in Australia has historically focused on debate about management of native forests for timber harvest (Dargavel 1995). Less commonly, there has been debate about the appropriateness of expansion of timber plantations and their management (Dargavel 1995, Schirmer 2007, Schirmer 2013). In particular, plantations have been criticised when established on land cleared of native forest for the purpose of establishing a plantation (Dargavel 1995), and when established on what is viewed as high quality agricultural land (Schirmer 2007).

This suggests that social license will vary depending on the type of forest/plantation being considered, with social license likely to be lower for native forest harvesting, and possibly higher for plantations, although with some social license issues apparent for the latter as well based on past reports.

4.1.3 Purpose of forest/plantations

The forest industry is largely associated with production of wood and paper products, but forests and plantations are managed for many purposes, not all of which involve wood and paper production. In particular, tree planting for environmental purposes and for carbon sequestration are common activities (e.g. Schirmer and Bull 2011, 2014). Forest management and tree planting for environmental purposes rarely attracts conflict or debate in the media compared to management of forests and plantations for wood and paper production, suggesting that the purposes for which a forest or plantation is managed is an important factor influencing the level of social license.

4.1.4 Parts of forest industry and type of social license examined in this report

Only a limited number of questions could be included in the Regional Wellbeing Survey. Given that social license challenges are often (although not always) focused on the 'primary production' part of the supply chain, and that social license for primary production activities was considered likely to differ depending on the purpose of management and the type of forest/plantation being managed, we compared social license for three activities: (i) management of native forest for wood production, (ii) planting trees on agricultural land for wood/paper, and (iii) planting trees on agricultural land for environmental purposes.

As past studies indicate that there is almost 100% acceptance of tree planting on marginal agricultural land, but that views differentiate more when trees are established on good agricultural land (Schirmer 2007; Schirmer and Bull 2011, 2014), we specifically asked survey respondents how they felt about planting trees on *good* agricultural land. This is important as a key criticism of plantation expansion on agricultural land in the past has been that the expansion has occurred on what is considered *good* rather than *marginal* agricultural land, while a key challenge for those in the forest industry has been sourcing adequate land of suitable quality to support good tree growth (Schirmer and Tonts 2003; Schirmer et al. 2015). This means that it is critical to understand views about tree planting on good agricultural land, as past experience suggests that many people view the land plantations are established on as good agricultural land, and views will vary more about the appropriateness of this practice than about tree planting on 'marginal' agricultural land of lower productivity. Thus asking about views of tree planting on good agricultural land provides better insight into where differences of view exist about social acceptability of tree plantings.

In addition to deciding which parts of the forest industry to ask about, the survey questions needed to measure a specific level of social license. The level focused on was 'acceptance', as this provides understanding of whether different parts of the forest industry have social license that exceeds basic tolerance, while not necessarily being strongly supported or identified with, thus representing a 'mid' level of social license.

Therefore survey respondents were asked, on a scale from very unacceptable (1) to very acceptable (7):

- How acceptable do you find planting trees on good agricultural land for environmental purposes?
- How acceptable do you find planting trees on good agricultural land to produce wood and paper products?
- How acceptable do you find logging of native forests for wood production?

4.2 Social license – overall findings

There is very low social license for native forest logging, a diversity of views about acceptability of wood/paper plantations on good agricultural land, and high social license for planting trees for environmental purposes on good agricultural land. When asked how acceptable they would find (i) logging of native forests for wood production, (ii) planting trees on good agricultural land for wood/paper production, and (iii) planting trees on good agricultural land for environmental purposes, with respondents asked to answer how they would feel if this occurred near where they lived (even if it didn't currently) (Figures 4 and 5):

- Native forest harvesting was considered unacceptable by 65% of rural/regional and 70% of urban residents across Australia, and acceptable by 17% of rural and 10% of urban residents. Eleven per cent of rural/regional and 9% of urban residents found this neither acceptable or unacceptable, and 8% and 11% respectively were unsure whether it was acceptable.
- Timber plantations considered unacceptable by 29% of both rural/regional and urban residents, and acceptable by 47% of rural/regional and 43% of urban residents, with the remainder (24% and 28% respectively) either neutral or unsure.
- Environmental tree planting was considered unacceptable by only 12% of rural/regional and 9% of urban residents, and acceptable by 72% and 73% respectively, with 16% of rural/regional and 18% of urban residents unsure or neutral.

There are therefore much lower levels of social license for native forest harvesting than for producing timber using plantations. However, a significant proportion of people - close to one-third - find timber plantations unacceptable if established on good agricultural land, indicating low social license amongst relatively large segments of the population. Tree planting for environmental purposes is considered acceptable by most, even when on good agricultural land.

Questions about acceptability were asked on a seven-point scale to enable understanding of how strongly respondents felt about their answers. Examining the *strength* of acceptability and unacceptability:

- Native forest harvesting was most commonly considered *very* unacceptable, with 38% of rural/regional residents considering it very unacceptable versus 15% rating it moderately unacceptable and 11% slightly acceptable; in urban areas 44% found it very unacceptable, 16% moderately unacceptable and 10% slightly unacceptable. Of the smaller proportion of people finding it acceptable, there was no clear trend in strength, with similarly proportions reporting slight, moderate and high acceptance. This suggests very strongly held views amongst those who find this activity unacceptable.
- Timber plantations had a more even spread of views: people were a little more likely to consider it very acceptable than slightly or moderately acceptable, and a little more likely to find it slightly unacceptable than moderately or very unacceptable. This suggests many of those who find this activity unacceptable may have some tolerance of the practice, as they are in the 'slight' or 'moderate' rather than high level of unacceptability.
- Environmental tree plantings were much more commonly considered 'very acceptable' (40% rural/regional and 41%) urban) than slightly (12% for both groups) or moderately (19% rural/regional and 21% urban) acceptable. This indicates very high acceptance that is

suggestive of many having a higher level of social license – approval – in the form of active support for this practice.

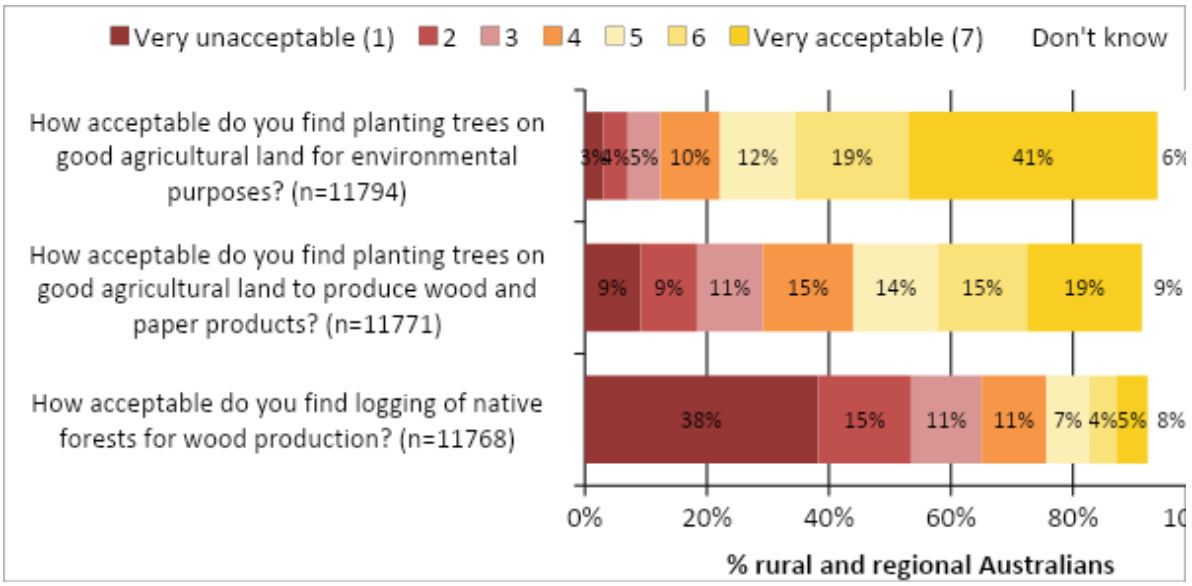

Figure 4 Acceptability of forestry related activities - rural and regional Australians

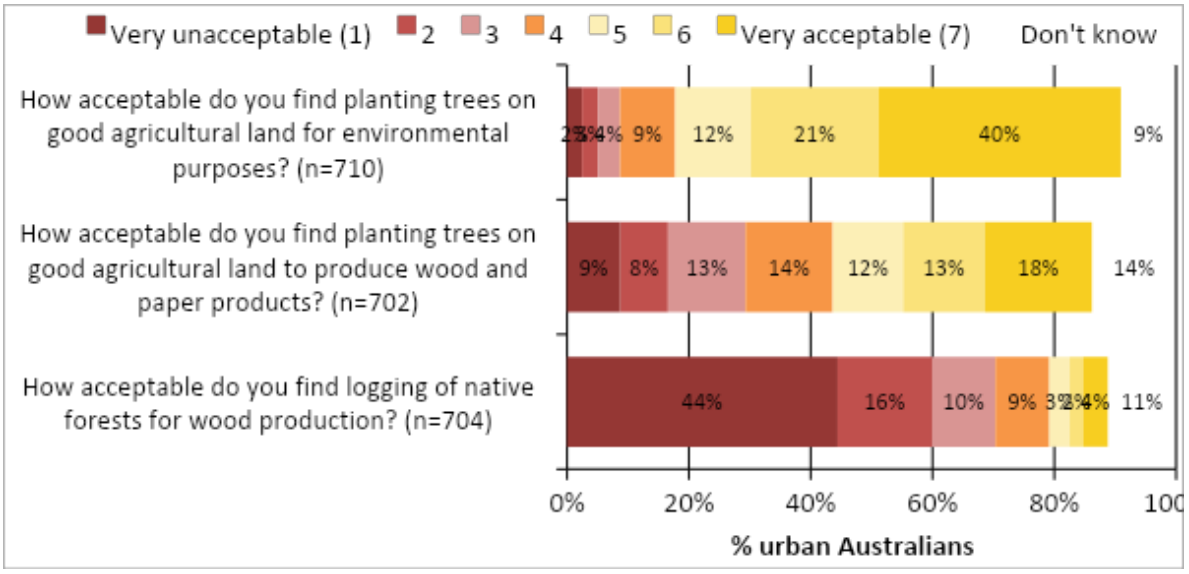

Figure 5 Acceptability of forestry related activities - urban Australians

It was possible to compare views about these three forestry activities to other sometimes controversial land and water management activities, as the survey asked about acceptability of a number of other land and water management practices. As shown in Figures 6 and 7 (with more detailed data provided in Appendix 1, Figures A1 and A2):

- Environmental tree planting had very high acceptance compared to all other practices, with controlled burning to reduce bushfire risk the only practice with slightly higher acceptance
- Timber plantations were one of several activities that a significant proportion of the population find unacceptable while many also find acceptable, including subdivision of agricultural land for rural residential development, and reducing bushfire fire by using machinery to remove vegetation.
- Native forest harvesting was one of the four most unacceptable practices, with the other three being mining practices.

Overall, the findings suggest that native forest logging is equated with depletion or 'mining' of resources, as it is clustered with coal-seam gas extraction and open-cut mining in terms of acceptability. The findings also suggest that it is not associated with ideas of renewability, with solar farms and wind farms – producing renewable energy – having much higher acceptability, as do other practices often associated with sustainability and environmental protection.

In general, practices that are associated with protection of human health and wellbeing (controlled burning to reduce fire risk) and with protection of the environment or sustainability (planting trees for environmental purposes, solar farms, wind farms, restricting vegetation clearing) have higher acceptability than those that are associated with economic production (economic legitimacy) but not also with environmental benefits (socio-political legitimacy) - timber plantations, subdivision of agricultural land, and growing genetically modified crops in particular. Those associated with loss of resources or often claimed to have negative environmental impacts have the lowest acceptability (mining-related practices, intensive livestock production), and logging of native forests appears to be strongly grouped by most people with this group of practices.

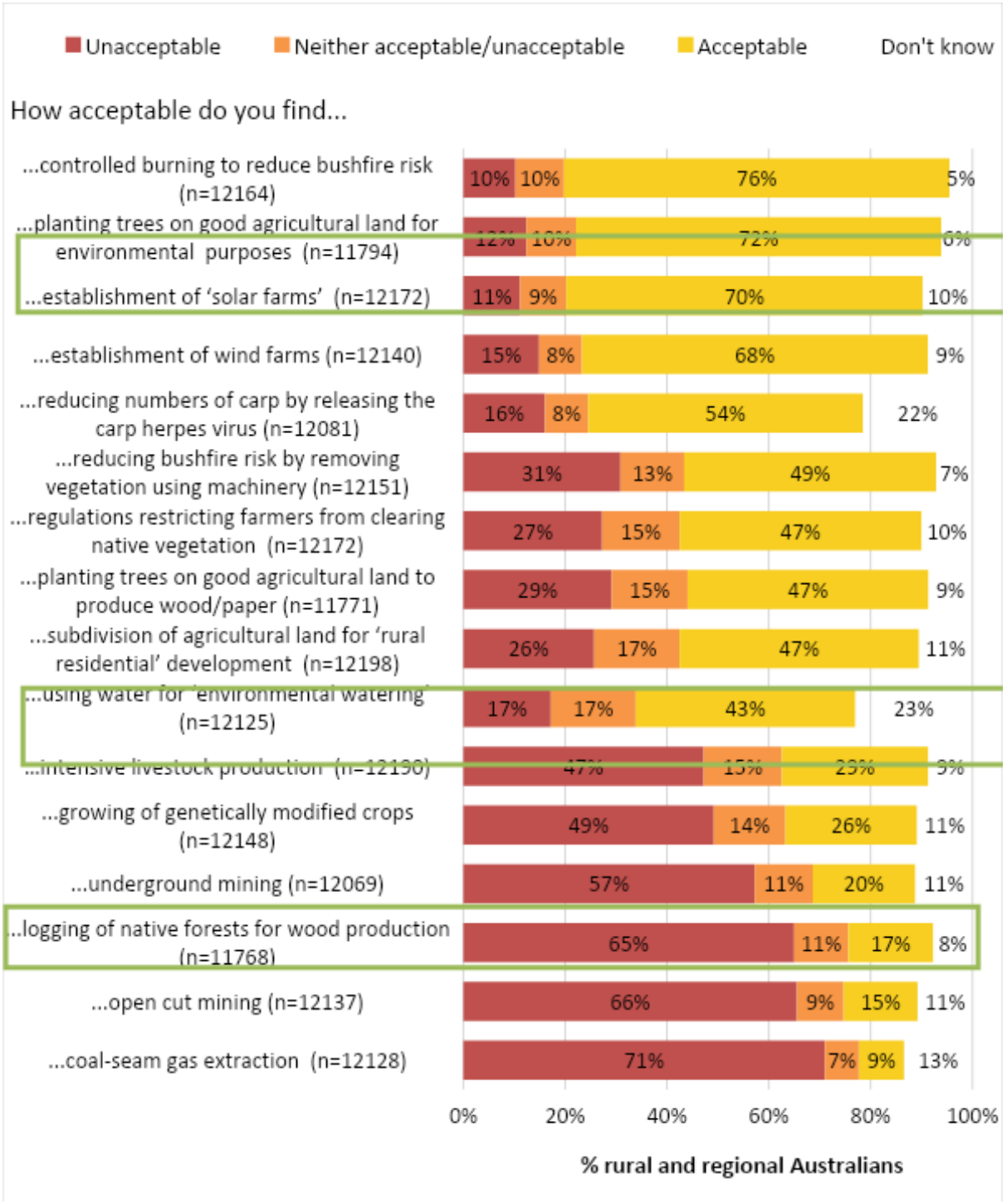

Figure 6 Acceptability of forestry related activities compared to other sometimes controversial activities – rural and regional Australians

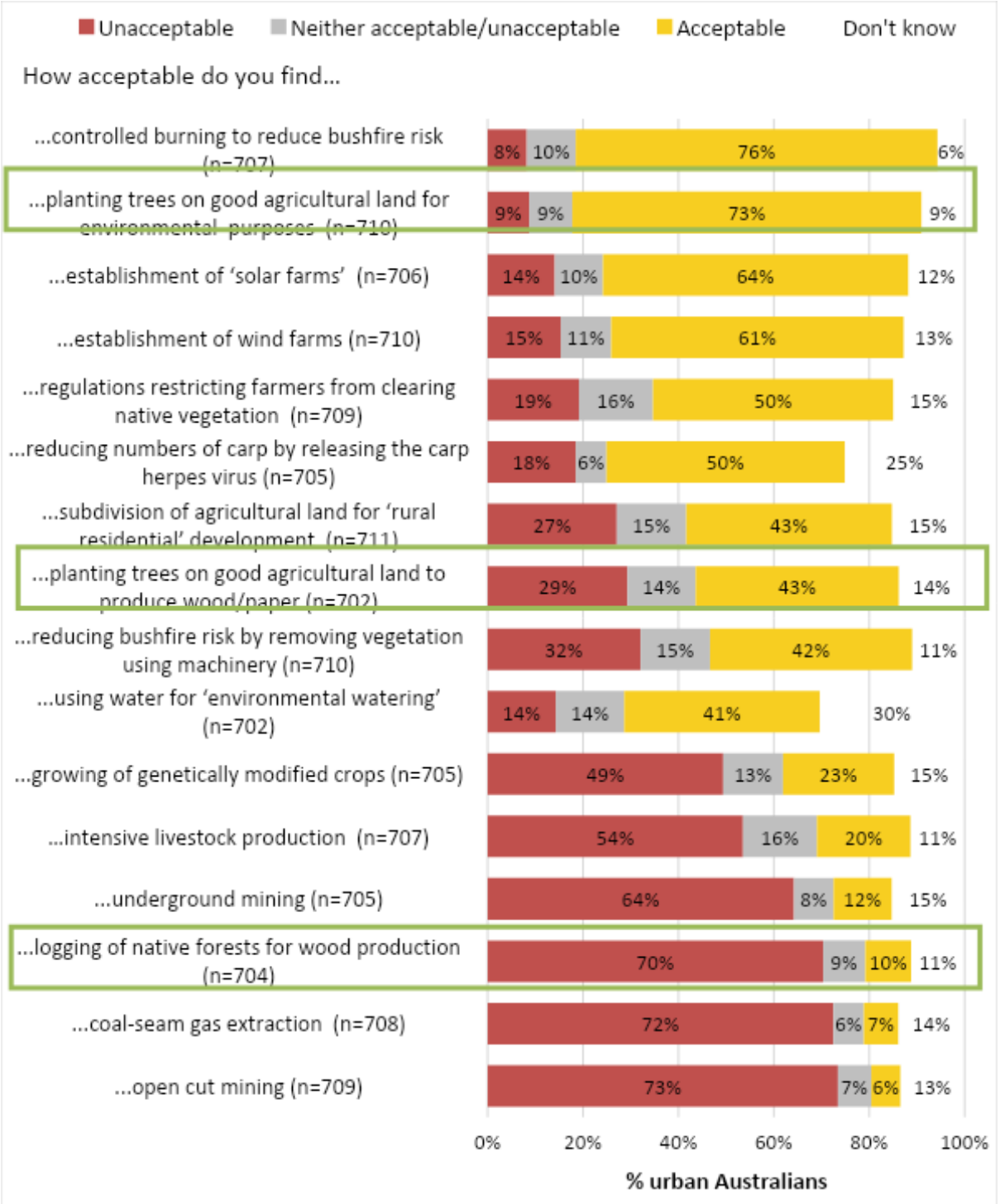

Figure 7 Acceptability of forestry related activities compared to other sometimes controversial activities – urban Australians

4.3 Social license – by region

Social license was examined by region. First, views of people living in different states and territories were compared (Figures 8 to 10; more detailed data is provided in Appendix 1, Figures A3 to A5). Overall, there were few differences in views of people living in different states and territories:

- Tree planting for environmental purposes on good agricultural land (referred to as 'environmental tree planting' from this point on): This was considered slightly less acceptable in Tasmania and Queensland and slightly more acceptable in the Northern Territory (NT) (Figure 8)
- Tree planting for wood/paper on good agricultural land ('timber plantations'): This was considered more acceptable in Western Australia (WA) (54% finding it acceptable) and the NT (60% finding it acceptable) and least acceptable in Tasmania (40% finding it acceptable), with unacceptability higher in Tasmania (36%) than any other state or territory (Figure 9)
- Native forest logging for wood production ('native forest harvesting'): This was least acceptable to South Australians (SA) (70% finding it unacceptable), where there has been no commercial logging of native forests for some time, and to those in Queensland (68%). Those in Tasmania and the NT were somewhat less likely to find this unacceptable (61% and 58% finding it unacceptable respectively). Acceptability was lowest in SA (10%) and highest in Tasmania (21%) (Figure 10).

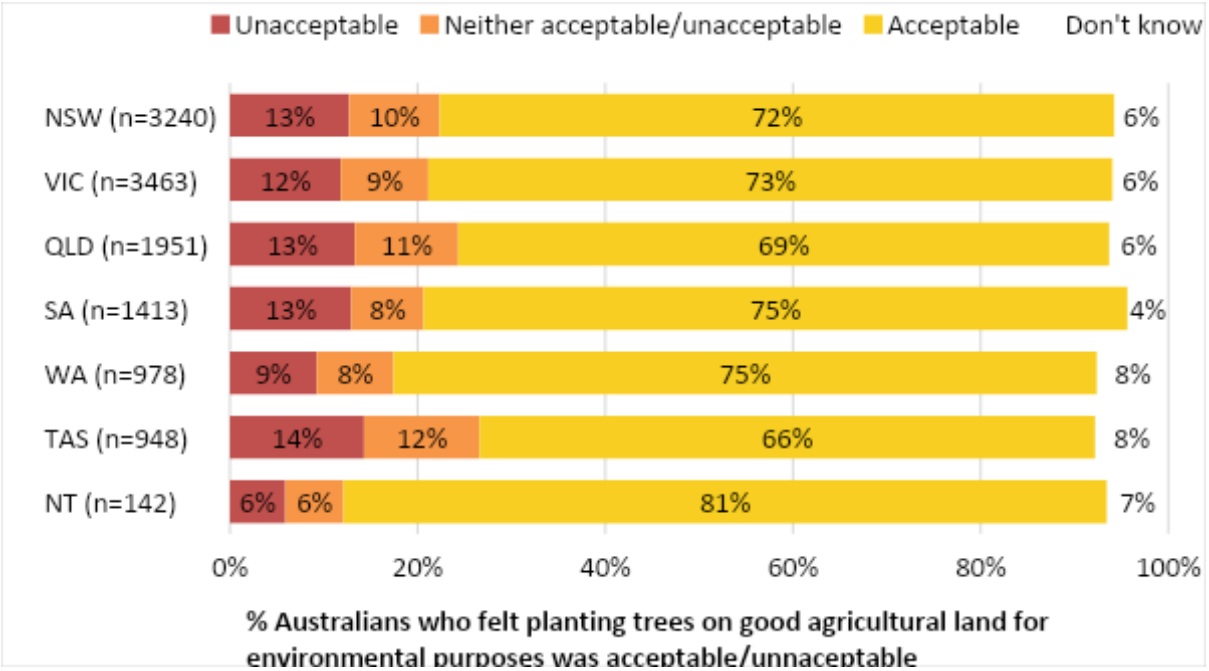

Figure 8 Acceptability of planting trees on good agricultural land for environmental purposes, by state

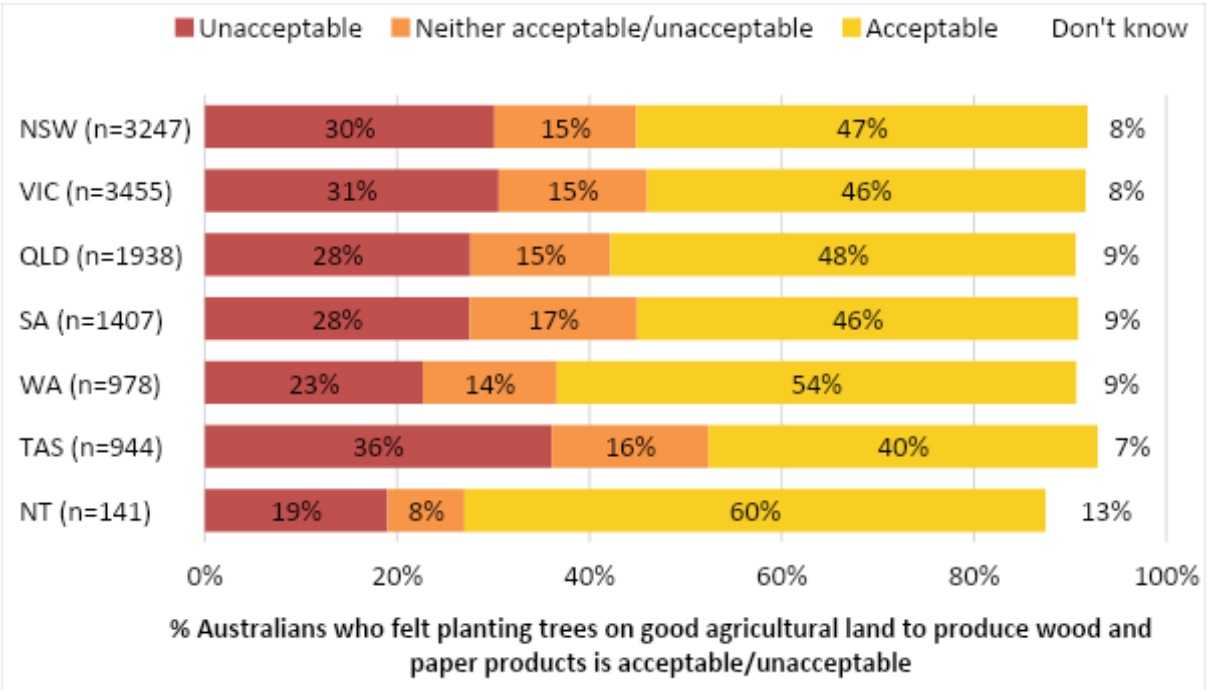

Figure 9 Acceptability of planting trees on good agricultural land to produce wood and paper products, by state

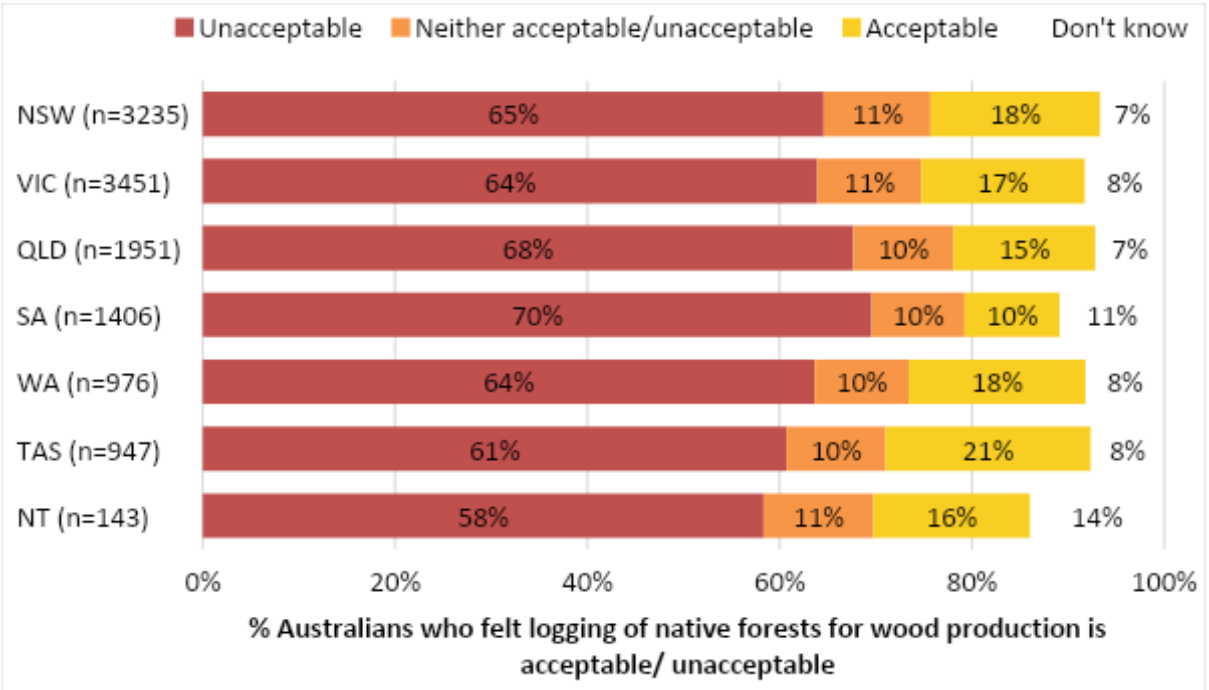

Figure 10 Acceptability of logging of native forests for wood production, by state

Forest industry activities are often clustered in particular regions, and given this some variation in views may be expected between regions. Different 'forestry regions' around the country were identified, using the same boundaries as those used in recent reports examining employment and expenditure by the forest industry (see Schirmer et al. 2017a,b; 2018 a,b,c). The specific definitions of each region are provided in Appendix 2.

Table 2 compares acceptability of the three activities by region. Orange shading indicates lower acceptability than the average for Australia as a whole, and purple shading indicates higher acceptability than the average.

As shown in Table 2, there were few differences between regions in views about the acceptability of environmental tree planting, although this activity was slightly less acceptable to those living in North and Southern regions of Queensland, and those living in in the Cradle Coast and to a lesser extent Northern region of Tasmania.

Views about the acceptability of timber plantations varied more between regions. People were more likely to find this activity unacceptable if they lived in the Central Tablelands, North East and South East/Southern Inland regions of New South Wales (NSW); in the Central Highlands and Gippsland region of Victoria; the South East region of Queensland; and all parts of Tasmania, particularly the Cradle Coast. These regions include some of those where there have been failed plantation establishment projects in the past (particularly north east NSW and south-east Queensland where failed hardwood plantations have been controversial), and many with relatively limited areas of cleared agricultural land or where there was public criticism of rapid expansion of hardwood plantations prior to collapse of Managed Investment Schemes companies in the 2000's (Tasmania, parts of Gippsland and South East NSW). This suggests that past experience of plantation expansion, particularly where that expansion has not been accompanied by establishment of subsequent harvesting, replanting and processing, may be a predictor of lower acceptability. Regions that experienced rapid expansion of hardwood plantations in the 2000's but which have ongoing harvesting, replanting and jobs generated in woodchip or other processing have either typical or above average support, including the Great Southern and South West regions of WA, the Green Triangle region of Victoria and SA, and the Western region of Victoria. Regions with higher acceptability include the River red gum region of southern inland NSW, all parts of Queensland except the South East, all of which have not had substantial areas of new timber plantations in recent decades.

Native forest harvesting was more likely to be considered unacceptable by people living in the Central Tablelands of NSW, Western parts of Victoria, north Queensland, South East Queensland, and the SA part of the Green Triangle. Most of these regions have little or no commercial harvest of native forests, or have plans to phase out harvesting of public native forest in future. Native forest harvesting was more likely to be considered acceptable by people living in North East NSW, the river red gum region of NSW, the South West Slopes of NSW, Wide Bay Burnett region of Queensland, South West WA, and the Cradle Coast and Northern parts of Tasmania. The proportion of residents who found native forest logging acceptable in these regions ranged from 23% to 29%, higher than the average of 17% in rural and regional Australia but not substantially so. These regions all have active native forest-based industries, which may contribute to higher acceptance of this activity.

Table 2 Acceptability of forestry related activities in different forestry dependent regions

State	Region[1]	Commercial timber industry type[2]	Acceptability of planting trees on good agricultural land for environmental purposes[3]			Acceptability of planting tr on good agricultural land f wood/paper[3]		
			% Unacce-pt able	% Accept-abl e	% Don't know	% Unacce-pt able	% Accept-abl e	% D k
Australia – rural/regional			12%	72%	6%	29%	47%	
NSW	South West Slopes (n=317)	SWD	9%	71%	5%	26%	47%	
	Central Tablelands (n=197)	SWD	11%	76%	3%	**41%**	**36%**	
	North East (n=239)	NF, HWD	14%	72%	5%	**40%**	**41%**	
	Mid North Coast (n=266)	NF, HWD	15%	71%	7%	29%	51%	
	Hunter & Central Coast (n=276)	NF	10%	72%	10%	25%	50%	
	South Coast & Southern Inland (n=213)	NF, SWD	14%	75%	3%	**42%**	**37%**	
	Cypress (n=549)	NF	16%	68%	5%	31%	45%	
	River Red Gum (n=390)	NF	15%	71%	3%	**24%**	**57%**	
VIC	Green Triangle (n=379)	SWD, HWD	12%	74%	2%	28%	44%	
	Western (n=730)	SWD	10%	74%	7%	33%	43%	
	North Central (n=1187)	SWD, NF	12%	73%	6%	25%	50%	
	Central Highlands & Gippsland (n=883)	NF, HWD	13%	71%	6%	**34%**	45%	
QLD	Wide Bay Burnett Region (n=307)	NF, SWD, HWD	10%	69%	7%	**24%**	**54%**	
	Central Region (n=237)	NF, SWD, HWD	12%	68%	7%	**19%**	**55%**	
	North Region (n=300)	NF, SWD	**17%**	**67%**	7%	25%	**53%**	
	Southern Region (n=484)	NF	**19%**	68%	2%	28%	**55%**	
	South East Region (n=346)	NF	11%	72%	6%	**37%**	**36%**	
SA	Green Triangle (n=219)	SWD, HWD	11%	75%	4%	27%	43%	
WA	Great Southern & Esperance (n=265)	HWD	10%	70%	7%	27%	51%	
	South West WA (n=266)	NF, SWD, HWD	12%	74%	3%	**23%**	**54%**	
TAS	Cradle Coast (n=250)	NF, SWD, HWD	**22%**	**56%**	7%	**39%**	**37%**	
	Northern (n=305)	NF, SWD, HWD	14%	**62%**	8%	**34%**	**42%**	
	Southern (n=388)	NF, SWD, HWD	11%	72%	8%	**36%**	**42%**	

[1] See Appendix 2 for details of local government areas included in each region.

[2] SWD = softwood plantation, HWD = hardwood plantation, NF = native forest

[3] Measured on a scale of 1 to 7, from not at all unacceptable (1) to very acceptable (7). In this table, a score of 1, 2 or 3 is reported as 'unacceptable' and a 'acceptable'. Responses of 'don't know' are also presented. The remaining proportion of respondents not presented in the table selected 4 (neither unacc

4.4 Social license – by socio-demographic group

Different groups of people may have differing views about the acceptability of forest industry activities. The extent to which levels of social license vary between people was examined by comparing acceptability of the three forestry activities for the following groups, all of which have been shown in other studies to sometimes vary in their views about acceptability of different land and water management activities:

- Gender: Men and women
- Age: Views of people aged 18-39, 40-54, 55-64 and 65 and older were compared
- Farming: The views of farmers and non-farmers were compared; this is particularly important as farmers manage agricultural land trees may be planted on, and often neighbour native forests that are harvested for timber
- Remoteness: The views of people living in major cities, inner regional, outer regional, and remote areas were compared. These regions are based on remoteness indexes: major cities include only the largest capital cities and exclude smaller cities such as Hobart and Launceston; inner regional areas include areas within relatively short distances of major cities and smaller cities; outer regional areas are typically within reach of a smaller regional city but further away from major populated areas and include many rural areas; while remote areas often are a long distance from even regional cities.
- Education: The views of those whose highest level of education was year 12 or equivalent, a post-high school certificate or diploma, or a university degree, were compared.

Figures 11 to 13 show findings, with more detailed data provided in Appendix 1, Figures A6 to A8.

Acceptance of environmental tree planting was very high amongst almost all groups (Figure 11), with one main exception: farmers were much less likely to find this acceptable, with 36% finding it unacceptable and only 47% acceptable. Acceptability was also somewhat lower for men than women, for older than younger people, and for those who had not completed high school compared to those with higher levels of formal education; however, in all cases except farmers differences between groups were relatively small.

Farmers were also least likely to of any group to find timber plantations acceptable, with 50% finding this unacceptable and only 31% finding it acceptable (Figure 12). Acceptability decreased with age, declining from 52% finding timber plantations on good agricultural land acceptable amongst those aged 18-39, to 38% for those aged 65 and older. Those living in remote areas were also more likely to find this activity acceptable compared to those living in major cities, inner and outer regional areas.

When native forest harvesting was examined, farmers were the group most likely to accept this practice, with 31% finding it acceptable and 49% unacceptable (Figure 13). Men found this more acceptable than women (22% compared to 13%), as did those who had not completed high school (23%). Those most likely to find logging of native forests unacceptable were those living in major cities (74%) and with a university degree (71%).

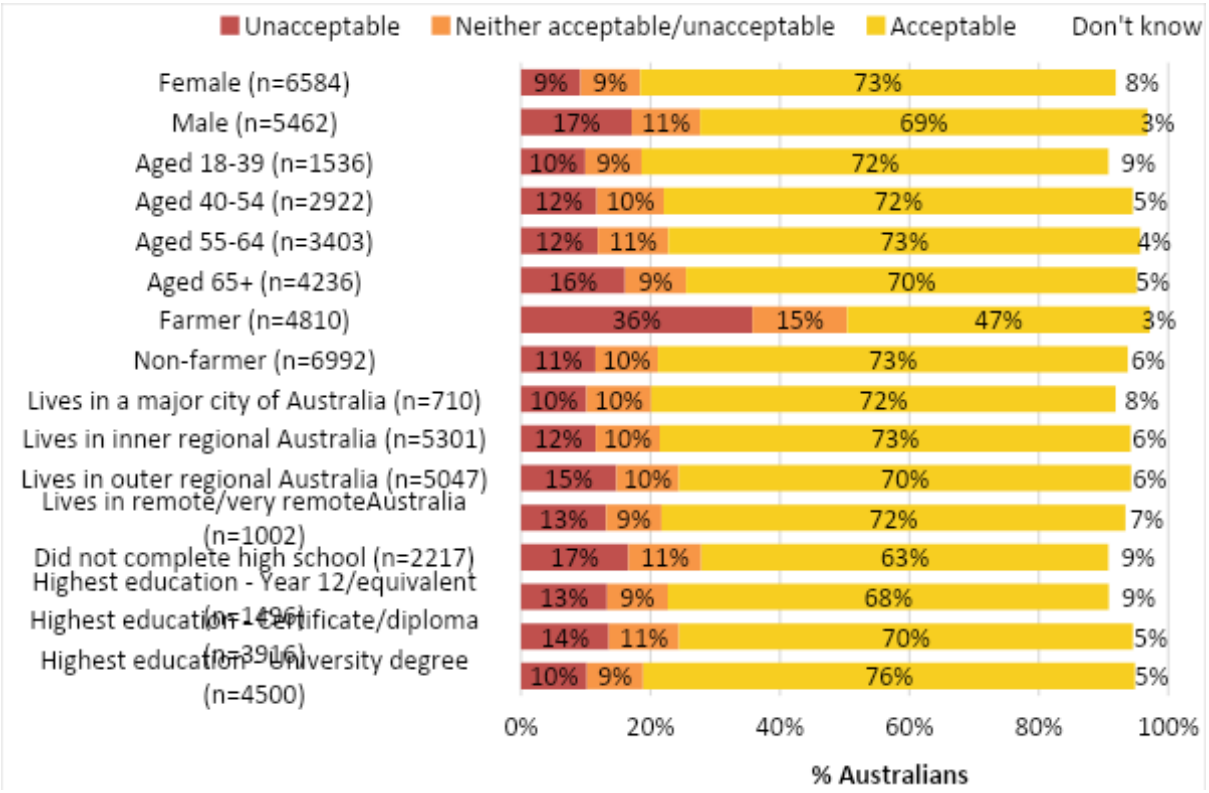

Figure 11 Acceptability of planting trees on good agricultural land for environmental purposes by different socio-demographic groups

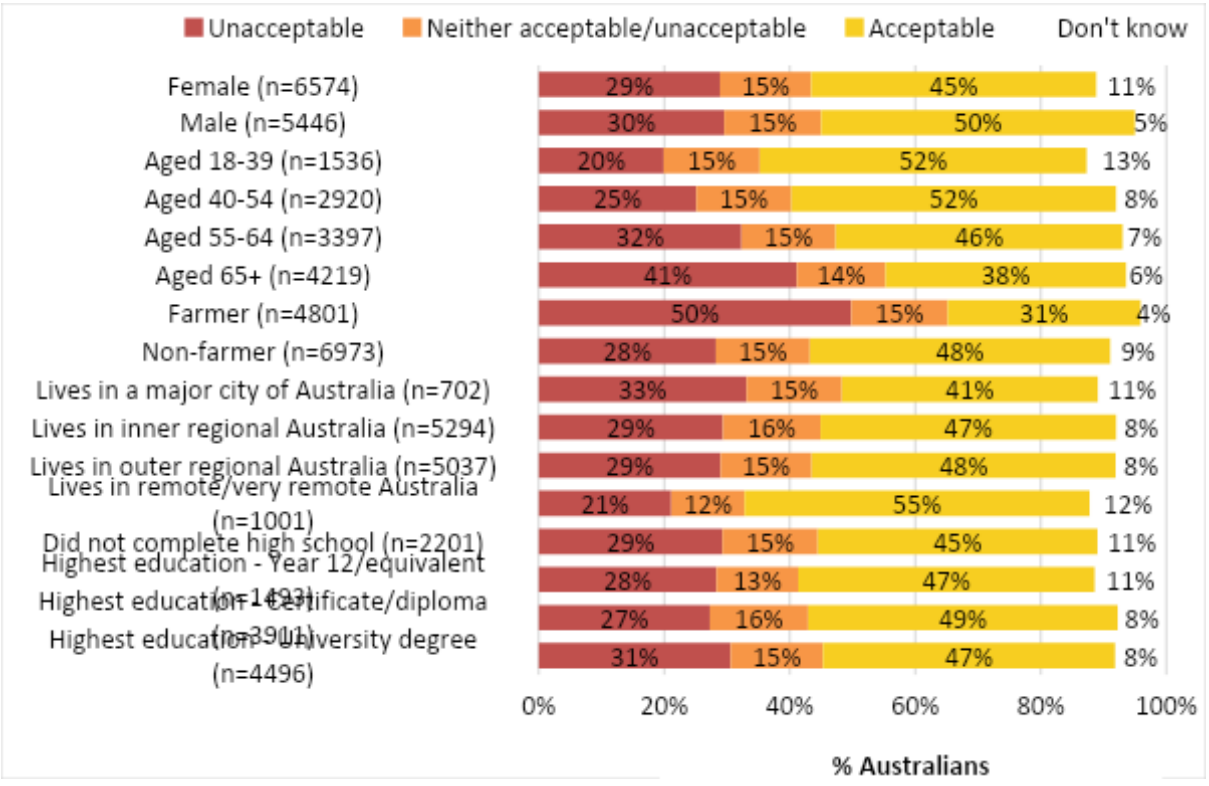

Figure 12 Acceptability of planting trees on good agricultural land to produce wood and paper products by different socio-demographic groups

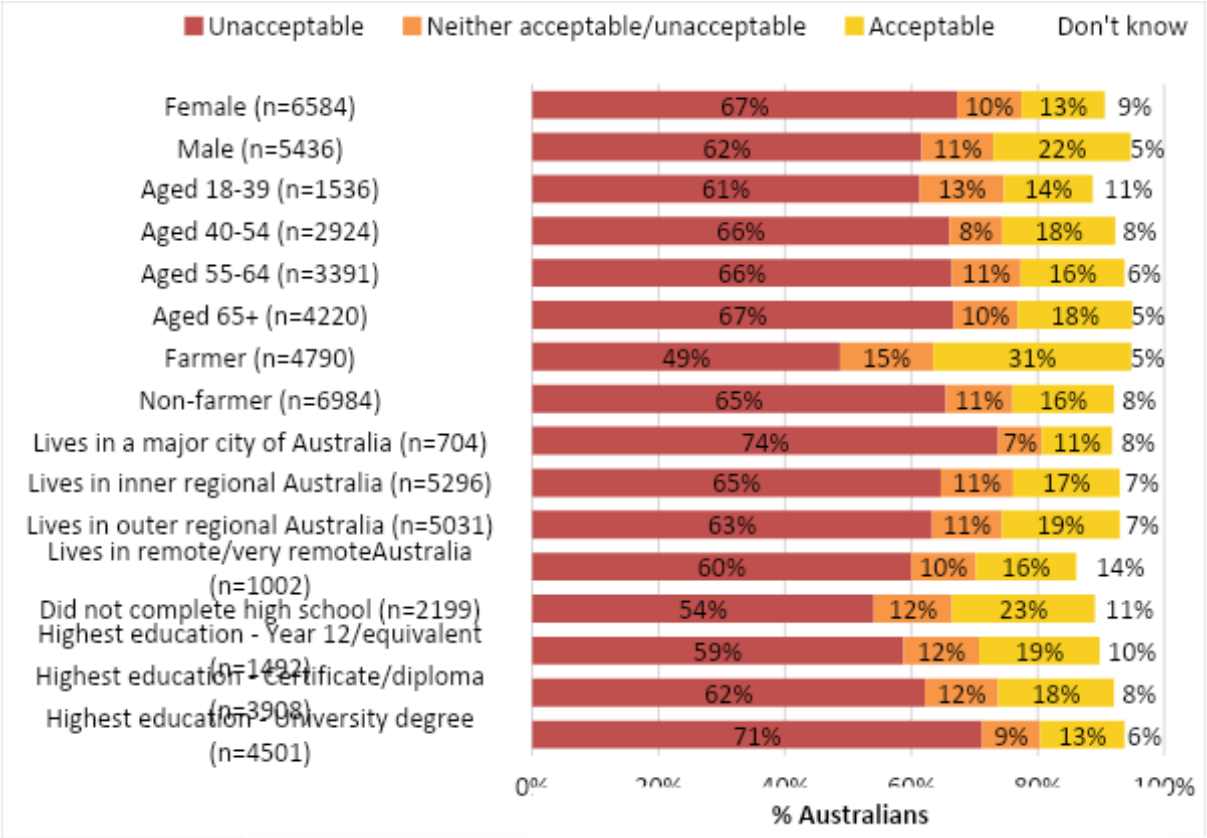

Figure 13 Acceptability of logging of native forests for wood production by different socio-demographic groups

4.5 Conclusions

The activity of harvesting timber from native forests has very low levels of social license in Australia, both in regions where this activity occurs and in those where it doesn't. Even amongst the groups who have the highest levels of acceptance of this activity (farmers), and in the regions with highest acceptance (mostly those in which there is higher economic dependence on native forest logging), more people find this activity unacceptable than acceptable. The similarity of views about logging of native forest with views about mining activities suggests that it is viewed as an activity that is non-renewable or unsustainable, rather than as having some of the positive environmental attributes of actions such as establishing solar or wind farms. The strength of views of many people about native forest harvesting suggests potential that this activity is considered incompatible with values held by many people.

Plantations grown for wood and paper production have varying social license, with particularly low social license amongst the group most critical to achieving plantation expansion: the farmers who manage much of the land on which plantation expansion has potential to occur. Past experiences of plantation expansion are likely to be driving views, with lower social license in regions with histories of either some failed plantation establishment efforts in recent decades (northern NSW and south-east Queensland), or of concern about rapid plantation expansion in the 2000s (Tasmania), and higher social license in regions in which there is an ongoing plantation industry with activity harvesting, replanting and processing, typically associated with larger numbers of jobs generated by plantations (Great Southern and South West WA, Green Triangle).

At least part of the social license challenges of timber plantations is related to the product being grown, as all groups were more likely to accept planting of trees for environmental purposes on good agricultural land, including farmers, than planting of trees for wood and paper production on good agricultural land. This suggests that there are differences in views of the benefits and costs of timber plantations, or about the legitimacy and acceptability of the outcome being achieved (environmental outcomes versus wood and paper products).

5.0 Being a good neighbour: Does it influence social license?

The views of landholders neighbouring forestry operations have the potential to affect social license at local, regional and national scales. This can happen in a range of ways: in particular, the experiences of neighbours can be readily shared across scales using both traditional and social media, meaning that a negative experience in one location can have a large impact on social license if it informs larger-scale dialogue and views about forestry activities. Experiences at the neighbour scale can be and are used by regional and national groups to confer or withhold legitimacy, acting as examples that are drawn on at these larger scales to form and reinforce views.

This means that it is important to understand how landholders neighbouring forestry activities view their forestry neighbours. This section examines how landholders experience neighbouring activities that involve the forest industry or forest management, and whether their views about whether forest and plantation managers are good neighbours influence the extent to which they find forestry activities acceptable – in other words, whether social license for forestry is influenced by whether the forest industry is viewed as a good neighbour.

5.1 What was examined?

All rural landholders who participated in the survey (including farmers and non-farmers living on rural properties) were asked what types of activities were undertaken on neighbouring land, including whether they neighboured farms, rural residential properties, national park, plantations grown for wood/paper, or native forest that is sometimes logged. They were also asked whether part of their property was leased to or otherwise managed by a plantation company.

Of 3,113 people living on rural properties, 82% had one or more neighbours who were farmers, 53% had a rural residential neighbour, 13% neighboured a national park, 9% neighboured a timber plantation, 6% neighboured a native forest that was sometimes logged, and 1% leased part of their land to a plantation company.

Rural landholders were then asked to rate how good or poor each of their neighbours were in a range of areas. These questions were only asked about the types of neighbours a landholder had. Views about different types of neighbours were then compared.

The data presented in this section are not weighted as they examine relatively small groups of landholders, who are themselves not representative of the broader population of Australia.

5.2 Is the forest industry viewed as a good neighbour?

Table 3 shows the proportion of landholders who agreed, disagreed or were unsure whether different types of neighbours acted in a number of ways consistent with being a ‘good neighbour’.

When asked if they overall felt that different types of neighbouring land users were ‘good neighbours’ most felt that neighbouring farmers (85%) and rural residential landholders (73%) were good neighbours. A much lower proportion felt that managers of national parks (48%), harvested native forest (47%), or timber plantations (47%) were good neighbours. Overall, the forest industry – and managers of national parks – were not viewed as being as good a neighbour as having a farmer or ‘hobby farmer’ living next door. However, there was little difference in the proportion viewing harvested native forest and plantations as good neighbours, suggesting that the large differences in

acceptability of these two activities identified in the previous section are caused at least in part by factors other than perceptions of whether they are good neighbours.

Past studies suggest that key reasons why forest-related activities are less likely to be viewed as 'good neighbours' than farmers is that in many cases neighbouring farms or rural residential properties have people living on them (although not always), whereas it is relatively common to have no-one living in national parks or harvested native forest, and plantation properties often have either tenants living in housing on the property or no-one living on it, rather than a land manager living on the property. When the land next door has no-one living on it, or does not have a land manager living on it, this can contribute to a sense of isolation and lack of communication with managers of neighbouring land, an issue identified in many past studies. These past studies have identified that having no land managers living on neighbouring land, or having a lack of communication channels or engagement with managers of neighbouring land, is associated with higher concern about and low support for plantations on agricultural land (Schirmer and Tonts 2003; Gordon et al. 2013, Dare et al 2011a,b, Dare et al. 2012, Dare et al. 2014, Williams and Schirmer 2012).

The findings of these past studies are supported by some of the perceptions reported in Table 3: in particular, the types of land managers least likely to be reported as consulting neighbours before engaging in activities that might affect them were managers of harvested native forest (35%), timber plantations (40%) and national parks (41%), while those most likely to consult their neighbours were rural residential landholders (52%) and farmers (69%). Communication is critical to ensuring activities undertaken by one landholder do not affect another, and to reducing potential for misunderstanding about activities being undertaken on a property. Additionally, whereas 83% of farmers and 68% of rural residential landowners were reported to sometimes help out their neighbours, only 33% of national parks, 37% of plantation companies and 32% of native forest managed for timber production were reported to do this. These results suggest that lack of communication and engagement in activities that are considered an expected part of being a good neighbour in rural areas contribute to forest and plantation managers being less often viewed as 'good neighbours'.

When asked about various common land management actions that have potential to either directly impact neighbours or to contradict common views about what a land manager needs to do to be a good neighbour, forest managers (whether managing national parks, plantations or native forest managed for timber production) were rated more negatively than farmers and rural residential neighbours in almost all cases:

- Good control of pest/feral animals: 70% of farmers were viewed as good neighbours in this respect, compared to 48% of rural residential landholders, 29% of national park managers, 26% of timber plantation managers and 24% of those managing native forest for timber production
- Good management of weeds: 66% of farmers were viewed as good neighbours, compared to 47% of rural residential landholders, 24% of national park managers, 26% of timber plantation managers and 22% of those managing native forest for timber production

Table 3 Experiences of different types of neighbours

	Neighbours farm land (n=3111)			Neighbours a rural residential property/hobby farm (n=1871)			Neighbours a national park (n=395)			Ne plant pla
	% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree
These neighbours have been good neighbours	85%	7%	1%	73%	13%	2%	48%	29%	6%	47%
These neighbours have helped me out sometimes	83%	10%	1%	68%	21%	1%	33%	42%	8%	37%
These neighbours are good at controlling pest/feral animals	70%	15%	4%	48%	31%	9%	29%	54%	6%	26%
These neighbours are good at managing weeds	66%	20%	2%	47%	35%	6%	24%	59%	6%	26%
These neighbours are good at reducing bushfire risk	74%	13%	3%	55%	28%	5%	31%	52%	5%	29%
These neighbours consult me before doing activities that might affect me	69%	21%	2%	52%	33%	4%	41%	36%	9%	40%
This neighbouring land is pleasant to look at from my property	81%	9%	1%	69%	19%	1%	72%	16%	4%	42%
These neighbours take good care of their land	78%	12%	1%	61%	23%	2%	38%	40%	5%	36%
These neighbours take good care of water quality	70%	9%	10%	52%	15%	18%	39%	25%	17%	31%
These neighbours take good care of boundary fences	67%	20%	2%	51%	32%	3%	22%	53%	11%	27%
These neighbours sometimes cause dust, smoke, noise or pollution problems	29%	57%	2%	29%	53%	3%	26%	52%	6%	41%
These neighbours have negative impacts on my property	20%	70%	2%	23%	62%	2%	28%	54%	5%	38%
The actions of these neighbours have damaged my property or access to it	10%	82%	1%	11%	77%	2%	17%	65%	6%	16%

Measured on a scale of 1 to 7, from strongly disagree (1) to strongly agree (7). A don't know option was also provided. In this table, a score or 3 is reported as 'disagree'. Responses of 'don't know' are also presented. The remaining proportion of respondents not presented in the

- Good management of bushfire risk: 74% of farmers were viewed as good neighbours, compared to 55% of rural residential landholders, 31% of national park managers, 29% of timber plantation managers and 39% of those managing native forest for timber production
- Maintaining good water quality: 70% of farmers were viewed as good neighbours, compared to 52% of rural residential landholders, 39% of national park managers, 31% of timber plantation managers and 29% of those managing native forest for timber production
- Caring for boundary fences: 67% of farmers were viewed as good neighbours, compared to 51% of rural residential landholders, 22% of national park managers, 27% of timber plantation managers and 21% of those managing native forest for timber production
- Taking good care of land: 78% of farmers were viewed as good neighbours, compared to 61% of rural residential landholders, 38% of national park managers, 36% of timber plantation managers and 29% of those managing native forest for timber production
- Causing dust, smoke or pollution problems: While only 29% of farmers and rural residential properties were viewed as causing this type of problem, and 26% of national park neighbours, 41% felt neighbouring plantations caused this, and 42% that neighbouring native forest managed for timber production did
- Having negative impacts on a neighbour's property: While only 20% of farmers and 23% of rural residential properties were viewed as causing this type of problem, 28% felt neighbouring national parks did, as well as 38% of those neighbouring timber plantations and 29% of those neighbouring native forest for timber production
- Causing damage to a property or to access to that property: While only 10% of farmers and 11% of rural residential properties were viewed as having specifically caused damage to the land of the person answering the survey, 17% of landholders neighbouring national parks, 16% of those neighbouring timber plantations and 16% of those neighbouring native forest managed for timber production viewed them as having caused damage.
- Amenity of neighbouring land: neighbouring farms were viewed as pleasant to look at by 81% of landholders, rural residential properties by 69%, national park by 72%, native forest managed for timber production by 61%, and timber plantations by only 42%.

5.3 Do views about having forestry neighbours differ between landholders?

The views of different types of landholders were compared to identify whether some types of landholders were more or less likely to view forest managers as good neighbours. In some cases there were too few responses to report, and in others relatively small numbers of landholders in a group, which means that in Tables 4 to 6 in most cases only relatively large differences in view are flagged as being significantly different to the average.

Only the following five of the 13 questions asked about neighbours are presented in Tables 4 to 6, to reduce the complexity of the data shown, with the remainder presented in Appendix 3; these five were chosen as they represented the full range of variance in views at the national scale, and as such show the variability that exists in views of different types of landholders.

Overall, there were relatively few differences in the views of different groups of rural landholders about whether different types of neighbours acted in ways consistent with being good neighbours. However, some differences were apparent, described further below.

Views about whether timber plantations were good neighbours were most different between men and women, with women having a more negative view of neighbouring timber plantations that was associated with feeling these neighbours did not help out or consult adequately:

- Being good neighbours: Timber plantations were less likely to be viewed as good neighbours by people living in NSW and women, and more likely to be viewed as good neighbours by men and non-farmers
- Helping out: Women were less likely to feel that timber plantation neighbours had helped them out (30%) compared to men (45%), and non-farmers were less likely to disagree with this statement (29% compared to 41% across all landholders)
- Consulting: Women were less likely to report they had been consulted by plantation neighbours (33%) than men (47%)
- Pleasant to look at: There were no significant differences between groups, although the results indicate people in WA and Tasmania, and younger people, may be less likely to enjoy viewing neighbouring plantations compared to those in other states and older people
- Negative impacts on my property: Younger landholders, and those who were not farmers, were less likely to report that plantation neighbours had negative impacts on their property than other landholders.

Table 4 Perceptions about neighbouring a timber plantation by different socio-demographic groups

Socio-demographic characteristics		n	These neighbours have been good neighbours			These neighbours have helped me out			These neighbours consult me			This p
			% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree
Australia		261	47%	26%	5%	37%	41%	5%	40%	48%	5%	42%
State	NSW	55	**33%**	**36%**	2%	34%	46%	4%	38%	46%	5%	43%
	VIC and SA	99	50%	23%	7%	41%	43%	7%	40%	48%	6%	44%
	QLD	*Too few responses to report*										
	WA	39	44%	21%	8%	36%	38%	8%	41%	49%	3%	36%
	TAS	59	53%	29%	5%	32%	37%	3%	42%	49%	3%	37%
Gender	Female	134	**42%**	26%	10%	**30%**	41%	8%	**33%**	**53%**	8%	43%
	Male	125	**52%**	27%	1%	**45%**	41%	2%	**47%**	**43%**	1%	41%
Age	< 45 years	43	44%	26%	9%	35%	35%	12%	26%	51%	14%	37%
	45-64 years	158	45%	25%	5%	35%	41%	6%	43%	48%	3%	41%
	65+ years	58	54%	29%	3%	44%	47%	0%	44%	47%	2%	46%
Farming status	Farmer	197	44%	31%	4%	37%	46%	4%	41%	50%	4%	40%
	Not a farmer	58	**55%**	**10%**	9%	38%	**29%**	12%	36%	47%	9%	47%
Education	High school or lower	63	52%	27%	5%	45%	39%	5%	42%	52%	0%	44%
	Certificate or diploma	89	47%	24%	2%	36%	41%	3%	48%	43%	4%	39%
	University degree	109	44%	28%	8%	34%	43%	7%	33%	50%	7%	43%

Measured on a scale of 1 to 7, from strongly disagree (1) to strongly agree (7). A don't know option was also provided. In this table, a score or 3 is reported as 'disagree'. Responses of 'don't know' are also presented. The remaining proportion of respondents not presented in the

When examining views of neighbours of native forest managed for timber production (Table 5), the most consistent differences were between people living in different states and of different ages, with those living in Victoria reporting more negative perceptions than those in other states, and those aged 65 and over having more positive perceptions:

- Being good neighbours: Those living in Victoria and aged under 65 were more likely to feel native forest managed for timber production was not good as a neighbour, and those aged 65 and older, and with lower levels of formal education, more likely to report positive perceptions
- Helping out: There were very few differences, although those in Victoria were more likely to feel this type of neighbour hadn't helped them out (50%), and those aged 65 and over more likely to feel they had been helped by this type of neighbour (44%)
- Consulting: Those living in Victoria were less likely to feel they were consulted by managers of native forest managed for timber production (26%) as were those aged under 65 (26%), while those aged 65 and over were more likely to feel consulted (48%) as were those with lower levels of formal education (48%)
- Pleasant to look at: There were no significant differences between groups
- Negative impacts on my property: Men were slightly more likely to report they felt these neighbours had negative impacts on their property (36%) than women (22%), as were those with lower levels of formal education (39%).

Table 5 Perceptions about neighbouring a native forest that is sometimes logged by different socio-demographic groups

Socio-demographic characteristics		n	These neighbours have been good neighbours			These neighbours have helped me out			These neighbours consult me			This neig pleas	
			% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% di
Australia		159	47%	25%	3%	32%	41%	9%	35%	45%	4%	61%	25
State	NSW	43	53%	19%	2%	33%	37%	12%	37%	40%	12%	62%	26
	VIC	42	**38%**	**36%**	2%	29%	**50%**	14%	**26%**	**57%**	2%	67%	26
	QLD	*Too few responses to report*											
	WA	*Too few responses to report*											
	TAS	*Too few responses to report*											
Gender	Female	76	45%	25%	5%	27%	42%	16%	35%	44%	5%	63%	22
	Male	82	48%	24%	1%	36%	40%	4%	35%	46%	4%	60%	27
Age	< 45 years	*Too few responses to report*											
	45-64 years	89	**35%**	29%	6%	25%	46%	10%	**26%**	**52%**	3%	56%	30
	65+ years	58	**60%**	**17%**	0%	**44%**	**29%**	8%	**48%**	**34%**	5%	71%	17
Farming status	Farmer	101	47%	24%	3%	32%	39%	9%	35%	41%	5%	57%	25
	Not a farmer	50	48%	26%	2%	32%	44%	10%	36%	56%	2%	72%	24
Education	High school or lower	31	**63%**	22%	3%	34%	34%	9%	**48%**	**32%**	6%	63%	22
	Certificate or diploma	48	42%	31%	2%	31%	48%	4%	31%	48%	0%	55%	31
	University degree	79	43%	22%	4%	31%	39%	13%	33%	49%	6%	65%	19

Measured on a scale of 1 to 7, from strongly disagree (1) to strongly agree (7). A don't know option was also provided. In this table, a score 2 or 3 is reported as 'disagree'. Responses of 'don't know' are also presented. The remaining proportion of respondents not presented in th

When examining views of neighbours of national parks (Table 6), the most consistent differences were between farmers and non-farmers and those of different ages, while there were also some differences amongst those living in different states:

- Being good neighbours: Landholders were less likely to feel national parks were good neighbours if they lived in Western Australia (26%), were farmers (39%) or had lower levels of formal education (42%) and more likely to if they were aged under 45 (56%), had a university degree (51%) or were not a farmer (66%).
- Helping out: Landholders were less likely to feel neighbouring national park managers had helped them out if they lived in Victoria or SA (28%) or WA (24%) or had lower levels of formal education (26%), and more likely to if they were younger than 45 (39%), although differences were small.
- Consulting: Landholders were less likely to feel national parks consulted with them if they lived in Queensland (49% disagreeing compared to a national average of 36%) and more likely to report being consulted if they lived in NSW (51% reporting being consulted)
- Pleasant to look at: Landholders were more likely to find national parks pleasant to look at if they were not a farmer (82%) or had a university degree (82%) and less likely to if they lived in Queensland (58%) or were a farmer (66%).
- Negative impacts on my property: Landholders were more likely to feel national parks neighbouring them had negative impacts on their property if they lived in Queensland (37%), were male (37%) or were a farmer (37%) and less likely to if they were not a farmer (10%).

Table 6 Perceptions about neighbouring a national park by different socio-demographic groups

Socio-demographic characteristics		n	These neighbours have been good neighbours			These neighbours have helped me out			These neighbours consult me			This nei pleas	
			% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% disagree	% don't know	% agree	% d
Australia		393	48%	29%	6%	33%	42%	8%	41%	36%	9%	72%	1
State	NSW	119	50%	24%	5%	40%	33%	4%	**51%**	**28%**	7%	70%	1
	VIC and SA	137	51%	31%	6%	**28%**	**47%**	10%	35%	38%	10%	78%	1
	QLD	63	49%	32%	3%	35%	51%	5%	38%	**49%**	5%	**58%**	**2**
	WA	42	**26%**	**38%**	10%	**24%**	45%	12%	40%	37%	9%	72%	1
	TAS	*Too few responses to report*											
Gender	Female	217	48%	23%	9%	31%	37%	12%	41%	33%	13%	75%	1
	Male	175	49%	36%	2%	36%	47%	2%	41%	40%	3%	68%	1
Age	< 45 years	80	**56%**	**16%**	16%	**39%**	**24%**	21%	38%	30%	22%	67%	1
	45-64 years	205	47%	32%	4%	30%	**49%**	4%	40%	41%	6%	75%	1
	65+ years	106	45%	32%	2%	35%	41%	4%	45%	31%	3%	69%	2
Farming status	Farmer	259	**39%**	**38%**	5%	29%	**49%**	5%	41%	39%	5%	**66%**	**2**
	Not a farmer	125	**66%**	**10%**	10%	41%	26%	13%	42%	30%	15%	**82%**	**6**
Education	High school or lower	99	**42%**	**38%**	2%	**26%**	**55%**	4%	45%	36%	5%	63%	2
	Certificate or diploma	123	49%	28%	7%	34%	44%	6%	40%	37%	9%	64%	2
	University degree	170	51%	**23%**	8%	37%	**32%**	11%	41%	35%	11%	**82%**	**8**

Measured on a scale of 1 to 7, from strongly disagree (1) to strongly agree (7). A don't know option was also provided. In this table, a score or 3 is reported as 'disagree'. Responses of 'don't know' are also presented. The remaining proportion of respondents not presented in the

5.4 Do views about neighbours predict acceptability of forestry activities?

Past studies suggest that views about the costs and benefits of an activity and how appropriately it is conducted will influence overall views of acceptability - in other words, social license (Dare et al. 2014, Moffat and Zhang 2014). We examined whether perceptions of forestry as a neighbour predicts acceptability of forestry activities, focusing on understanding:

- **Do views about whether timber plantations are good neighbours predict views about acceptability of timber plantations?** This was expected to have a direct relationship with acceptability, as a person's direct experience of plantations on neighbouring land was considered likely to influence views of acceptability.
- **Do views about whether timber plantations are good neighbours predict views about acceptability of environmental tree planting?** These two things were not expected to have a strong relationship, as experience of timber plantations will not necessarily influence views about environmental plantings. It was included to better test whether experiences of *any* neighbouring trees may influence views about acceptability, even if they are not managed for the same purpose.
- **Do views about management of neighbouring native forest managed for timber production predict views about acceptability of native forest harvesting?** This was expected to have a direct relationship with acceptability, as a person's direct experience of nearby harvesting of native forest was considered likely to influence views of acceptability.

If a landholder felt their neighbouring timber plantation was managed well, and that the plantation manager was a 'good neighbour', they were significantly more likely to consider timber plantations acceptable in general (Table 7). All but one of the 13 aspects of being a good neighbour was a statistically significant predictor of acceptability. Landholders were significantly more likely to find timber plantations on good agricultural land acceptable in general if they felt their timber plantation neighbours were good neighbours, helped them out, were good at controlling pest/feral animals and managing weeds, were good at reducing bushfire risk, consulted them before doing activities that might affect then, were pleasant to look at, took good care of their land and of water quality, took good care of boundary practice, and did not have negative impacts on their property or cause damage to it. The only issue that did not predict acceptability was views about dust, smoke and noise pollution: while 41% of landholders felt that their timber plantation neighbours sometimes caused dust, smoke, noise or pollution problems, this was not significantly associated with views about the overall acceptability of plantations.

The strongest predictors of overall acceptability were believing that timber plantation managers took good care of their land, were good at reducing bushfire risk, the plantation was pleasant to look at, and were overall good neighbours.

This suggests that social license does depend in part on what happens at the smallest of scales: ensuring that land is managed to the standards expected in rural areas, and in particular ensuring that issues with potential to impact neighbours are managed well, appears to influence social license for plantations from rural landholders.

Table 7 Does experience of neighbouring a timber plantation predict views about the acceptability of planting trees on good agricultural land?

Perceptions about neighbouring a timber plantation/has area of land leased to a plantation company	Relationship with acceptability of planting trees on good agricultural land for environmental purposes			Relati trees wood
	n	Effect size and significance (r_s, p)	Significant relationship?[1]	n
These neighbours have been good neighbours	245	0.18, 0.00	✓	246
These neighbours have helped me out sometimes	246	0.08, 0.19	✗	247
These neighbours are good at controlling pest/feral animals	246	0.19, 0.00	✓	247
These neighbours are good at managing weeds	246	0.18, 0.01	✓	247
These neighbours are good at reducing bushfire risk	248	0.21, 0.00	✓	249
These neighbours consult me before doing activities that might affect me	248	-0.00, 0.95	✗	248
This neighbouring land is pleasant to look at from my property	257	0.25, 0.00	✓	257
These neighbours take good care of their land	248	0.23, 0.00	✓	249
These neighbours take good care of water quality	214	0.10, 0.17	✓	215
These neighbours take good care of boundary fences	244	0.20, 0.00	✓	244
These neighbours sometimes cause dust, smoke, noise or pollution problems	249	0.07, 0.29	✗	250
These neighbours have negative impacts on my property	244	-0.12, 0.07	✗	245
The actions of these neighbours have damaged my property or access to it	247	-0.12, 0.07	✗	248

[1] In all cases, relationships had the expected direction: a positive view of benefits predicted higher acceptability, while negative views of costs pr

As expected, experiences of neighbouring timber plantations did not strongly predict how acceptable a person found environmental tree planting (Table 7). However, there were some statistically significant associations: a person was more likely to find environmental tree planting acceptable if they felt that managers of neighbouring timber plantations had been good neighbours, or had been good at controlling pest/feral animals and weeds, managing bushfire risk, providing a pleasant view, caring for their land and water quality, and taking care of boundary fences. This suggests that overall experiences of neighbouring plantations may influence the acceptability of tree planting in general, even if trees are being planted and managed for a purpose that is different to the management of the trees a person neighbours.

The way landholders experienced having a native forest managed for timber production as a neighbour, however, did not strongly predict how acceptable or unacceptable they found native forest harvesting (Table 8). Landholders were slightly more likely to find native forest harvesting acceptable in general if they felt that managers of neighbouring harvested native forest were good neighbours; did not cause dust, smoke noise or pollution problems; and did not have negative impacts on their property. However in all cases the strength of the statistical association was smaller than those observed for timber plantations and environmental tree plantings, and for all other aspects of being a 'good neighbour', being viewed as a good neighbour did not significantly increase the likelihood that the activity of native forest harvesting was considered acceptable. This suggests that views of neighbouring landholders about the acceptability of logging in native forests are not strongly driven by direct experiences of neighbouring native forests, but have other drivers.

Table 8 Does experience of neighbouring a native forest managed for timber production predict views about the acceptability of logging of native forests for wood production?

Perceptions about neighbouring a native forest that is sometimes logged	**Relationship with acceptability of logging of native forests for wood production**		
	n	**Effect size and significance (r_s, p)**	**Significant relationship?**
These neighbours have been good neighbours	152	0.18, 0.03	✓
These neighbours have helped me out sometimes	143	0.08, 0.32	✗
These neighbours are good at controlling pest/feral animals	145	-0.03, 0.77	✗
These neighbours are good at managing weeds	147	-0.05, 0.59	✗
These neighbours are good at reducing bushfire risk	153	0.10, 0.22	✗
These neighbours consult me before doing activities that might affect me	150	0.12, 0.14	✗
This neighbouring land is pleasant to look at from my property	155	0.07, 0.39	✗
These neighbours take good care of their land	152	0.13, 0.12	✗
These neighbours take good care of water quality	138	0.09, 0.28	✗
These neighbours take good care of boundary fences	145	-0.07, 0.39	✗
These neighbours sometimes cause dust, smoke, noise or pollution problems	149	-0.23, 0.00	✓
These neighbours have negative impacts on my property	157	-0.18, 0.03	✓

The actions of these neighbours have damaged my property or access to it	153	-0.05, 0.58	✗

[1] In all cases, relationships had the expected direction: a positive view of benefits predicted higher acceptability, while negative views of costs predicted lower acceptability

5.5 Conclusions

In rural areas, being a 'good neighbour' is important: the extent to which the forest industry is viewed as a good neighbour can influence its social license. Our findings show that forest and plantation managers – whether managing plantations or managing native forest for either timber harvest or conservation - are less likely to be considered good neighbours than neighbouring farmers or rural residential landholders. This suggests a need to critically examine whether and when native forest and plantation managers are acting in ways that are consistent with social expectations in rural areas. In particular, the results suggest a need to ensure that a relationship is established with both male and female neighbours, with many female landholders reporting a lack of consultation and overall relationship with plantation managers that suggests they are not always being directly communicated with.

However, the findings also suggest that the influence of being a good neighbour on overall social license differs depending on the forestry activity. For those engaged in managing plantations for wood and paper production or tree plantings for environmental purposes, being a good neighbour is a strong and significant predictor of views about overall acceptability. This suggests a strong case for investing in improving neighbour relations, through ensuring best practice in land and water management, as a way of improving social license.

However, for those managing native forest for timber production, being perceived as a good neighbour does not have a strong effect on how acceptable people find logging of native forests. This means that while ensuring good neighbour practices are in place is still essential, factors other than overall neighbour practices are more strongly influencing whether a person feels native forest harvesting is acceptable.

6.0 Being a good local industry: does it predict social license?

Perceptions of neighbours are important, but few people live next door to plantations or native forest in which timber harvesting occurs. Neighbours represent only a small proportion of the people who live in the rural, regional and urban communities in which the forest industry operates. The way people living in these communities view the industry's operations in their region is likely to influence the social license of the industry. This section examines how the forest industry is perceived by residents of communities in which it operates, focusing on the rural and regional communities that are located near native forests and plantations managed for timber production.

6.1 What was examined?

The forest industry is not active in all communities across Australia, with activities concentrated in a number of regions. To ensure only those who lived in communities in which the industry operates answered questions about their experiences of it, survey participants were asked which of the following industries were important in their local region: forestry, wood or paper product manufacturing, agriculture (farming), tourism, agricultural or food manufacturing, fishing, coal-seam gas mining and other mining. Respondents could select multiple industries.

As shown in Table 9, most people living in rural/regional Australia reported that agriculture (78%) and tourism (76%) were important industries in their region, while fewer felt agricultural or food manufacturing (36%), fishing (28%), mining other than coal-seam gas (25%), forestry (24%), wood or paper product manufacturing (11%) or coal-seam gas mining (5%) were important industries. This reflects the widespread nature of agriculture and tourism, while manufacturing, mining, forestry and fishing tend to be activities concentrated in a smaller number of regions. As expected, relatively few people living in major urban cities felt most of these industries were important locally, although 64% reported tourism was an important industry and 36% that agriculture was.

Table 9 Important industries in the local region

Type of industry	% who indicated this was an important industry in their local region	
	Rural and regional Australians (n=10,151)	Urban Australians (n=584)
Agriculture (farming)	78%	36%
Tourism	76%	64%
Agricultural or food manufacturing	36%	10%
Fishing	28%	22%
Mining other than coal-seam gas	25%	22%
Forestry	24%	5%
Wood or paper product manufacturing	11%	2%
Coal-seam gas mining	5%	1%

Survey participants were then asked whether each of the industries they had selected as being important in their region had positive or negative impacts for their local community related to employment, roads, land and water health, landscape amenity, community relationships, land prices and fire risk. 'Forestry' and 'wood and paper product manufacturing' were combined and asked about as a single industry when this was done, and findings are reported in the next sections.

6.2 Is the forest industry viewed positively as a local industry?

People living in communities in which the forest industry operates usually report that the industry has positive impacts on local employment (Figure 14): 76% reported it had positive impacts on jobs in their local community and only 6% that it had a negative impact. However, most of those reporting positive impacts reported slight to moderate positive impacts, rather than a very positive impact.

Views about other impacts of the industry in local regions were more mixed. The most common response when asked about impacts on cost of living, friendliness of the community, and health of local residents, was 'neither positive or negative impact', with 46% to 47% giving this response. Of those who did report a positive or negative impact, positive impacts were more common:

- 27% felt the industry had positive impacts on costs of living compared to 7% reporting negative impacts
- 29% felt the industry had a positive impact on friendliness and only 10% that it was negative
- 23% felt it was positive for health of local residents and 15% that it was negative.

When asked about impacts on land prices, local water quality, bushfire risk and health of the local environment, views were more mixed, and were slightly to moderately more likely to be negative than positive:

- 17% felt the industry was positive for local land prices and 18% that it was negative
- 15% felt the industry was positive for local water quality, 25% that it had negative impacts and 44% that it was neither impacting positively or negatively
- 29% felt the industry had a positive impact on bushfire risk (e.g. reducing it), 34% that it was negative and 27% were neutral
- 19% felt the industry had positive impacts on local environmental health, 35% that it had negative impacts and 34% were neutral.

There were three areas in which people were much more likely to report negative than positive impacts:

- 45% felt the forest industry had negative impacts on attractiveness of the local landscape and only 22% that it had positive impacts
- 53% felt the industry impacted negatively on local traffic (and 16% positively)
- 58% felt the industry had negative impacts on local road quality while 16% felt it had positive impacts.

However, it was most common for respondents to report slightly or moderately negative impacts, with relatively small proportions reporting very negative impacts, as can be seen in Figure 14.

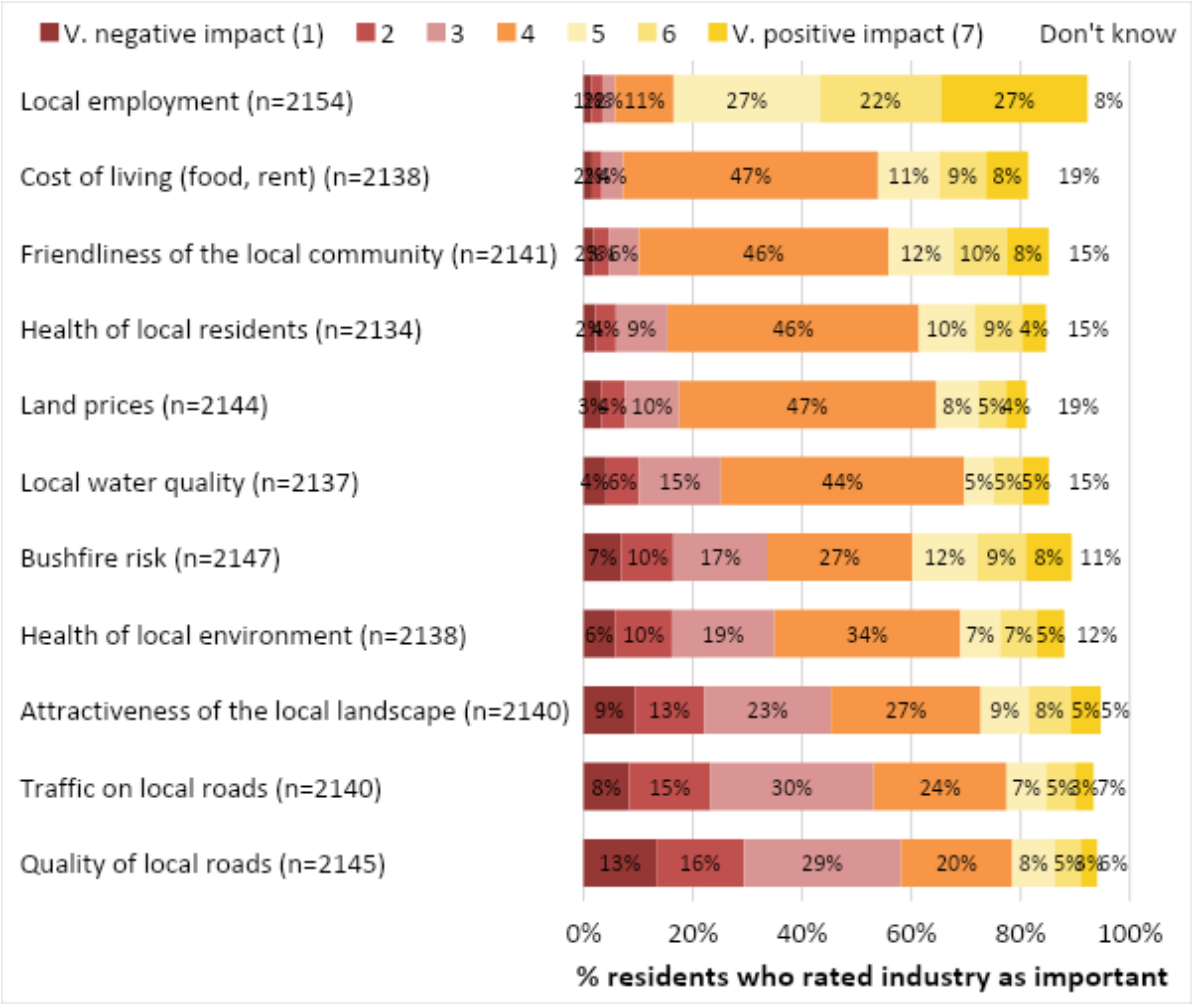

Figure 14 Perceptions of local costs and benefits of the forest industry

These findings highlight that there are specific areas in which the forest industry is perceived by most to perform well (employment), to be either positive or neutral (cost of living, friendliness, health impacts and land price impacts), to attract conflicting views about impacts (water quality, bushfire risk and local environmental health), and to be mostly viewed as negative or neutral impacts (landscape amenity and impacts on roads and traffic).

Perceptions of the forest industry were compared to views about other industries that commonly operate in rural and regional communities: agriculture and associated agriculture/food manufacturing, tourism, mining other than coal-seam gas, and coal-seam gas mining. This provides better understanding of whether perceptions of the industry are typical of or differ to other industries.

Employment: Other industries were viewed as having even more positive impacts on employment than forestry, with the large majority of people feeling tourism (91%), agriculture and associated manufacturing (87%), and mining other than coal-seam gas (84%) were positive for employment, compared to 76% for forestry (Figure 15). Coal-seam gas mining was considered positive for employment by 66% and negative by 22%, with these perceptions more negative than those for the forest industry.

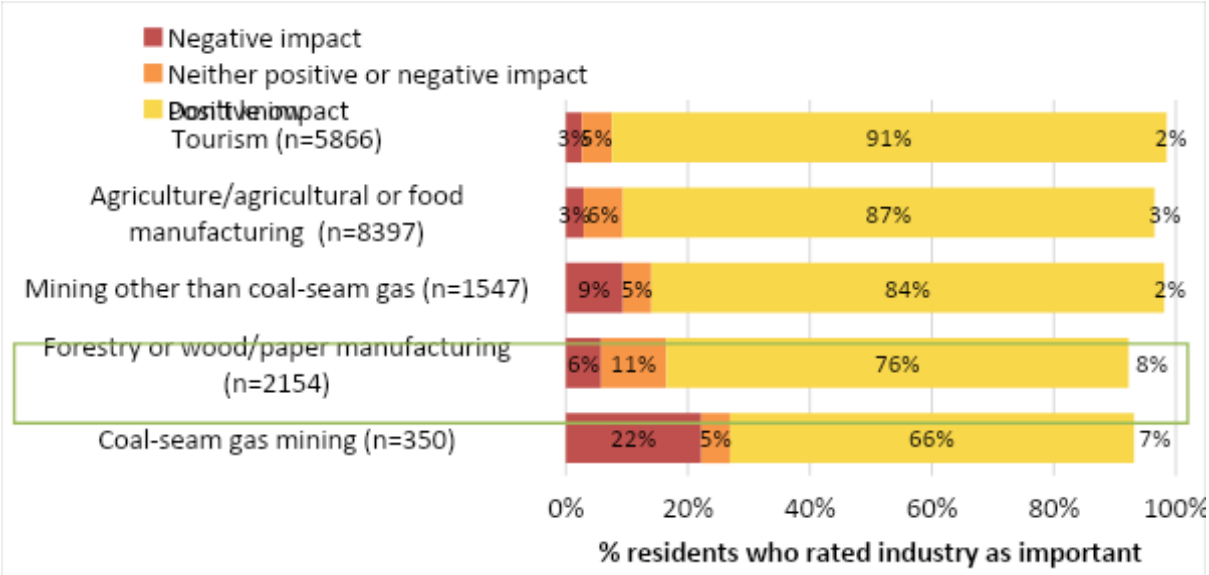

Figure 15 Perceptions about the impact of the forest industry on local employment, compared to other industries

Cost of living: Mining industries and tourism were more commonly reported to have negative impacts on cost of living than forestry, while agriculture was viewed more positively (Figure 16). Forestry was more commonly viewed as neutral, or given an 'unsure' response, indicating low awareness of any impacts on costs of living.

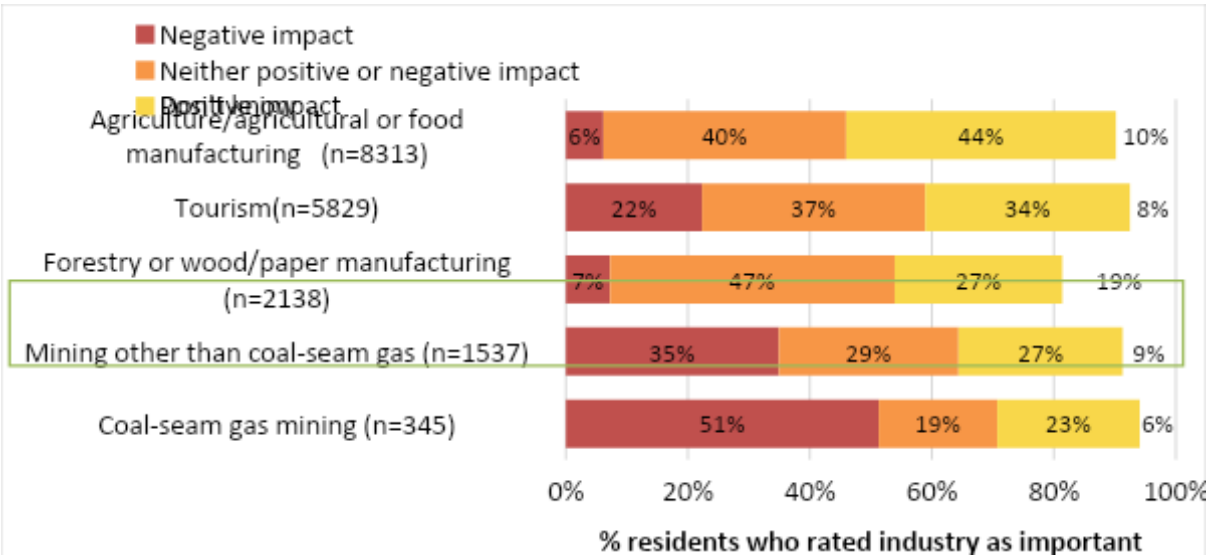

Figure 16 Perceptions about the impact of the forest industry on the cost of living, compared to other industries

Friendliness: Tourism and agriculture were both predominantly viewed as positive for the friendliness of local communities, and rarely reported to have negative impacts on friendliness. The forestry was less likely to be viewed as contributing positively to friendliness of local communities, although it was also rarely viewed as having negative impacts (Figure 17). Perceptions of mining industries were more often negative than perceptions of any other industry.

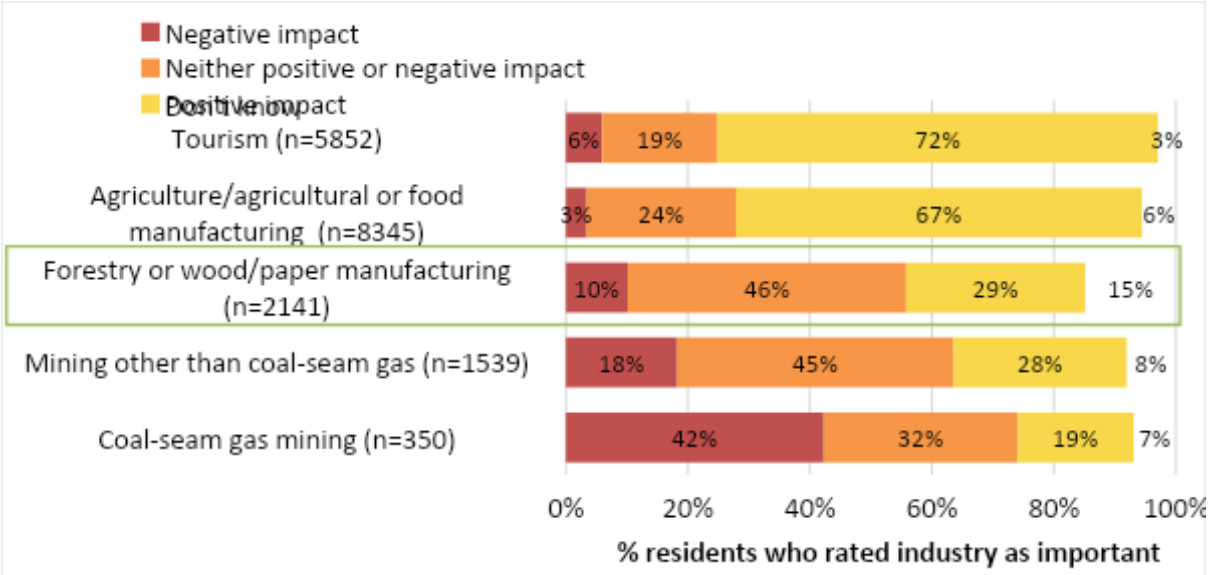

Figure 17 Perceptions about the impact of the forest industry on the friendliness of the local community, compared to other industries

Health of local residents: The forest industry was most often viewed as having neutral impacts on health of local residents, and rarely as having negative impacts: views about agriculture and tourism were more likely to be positive, while mining industries were much more commonly viewed as having negative impacts on health (Figure 18).

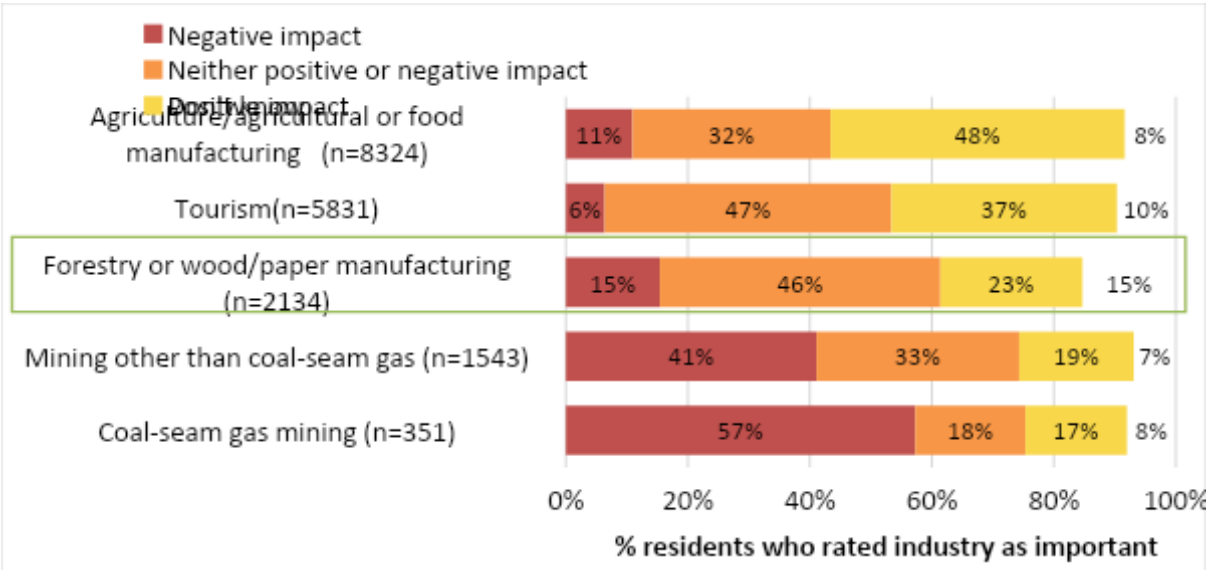

Figure 18 Perceptions about the impact of the forest industry on the health of local residents, compared to other industries

Land prices: Of the five industries examined, the forest industry was least likely to be viewed as having positive impacts on local land prices, but also less likely than most to be viewed as having negative impacts, with only agriculture viewed less negatively (Figure 19).

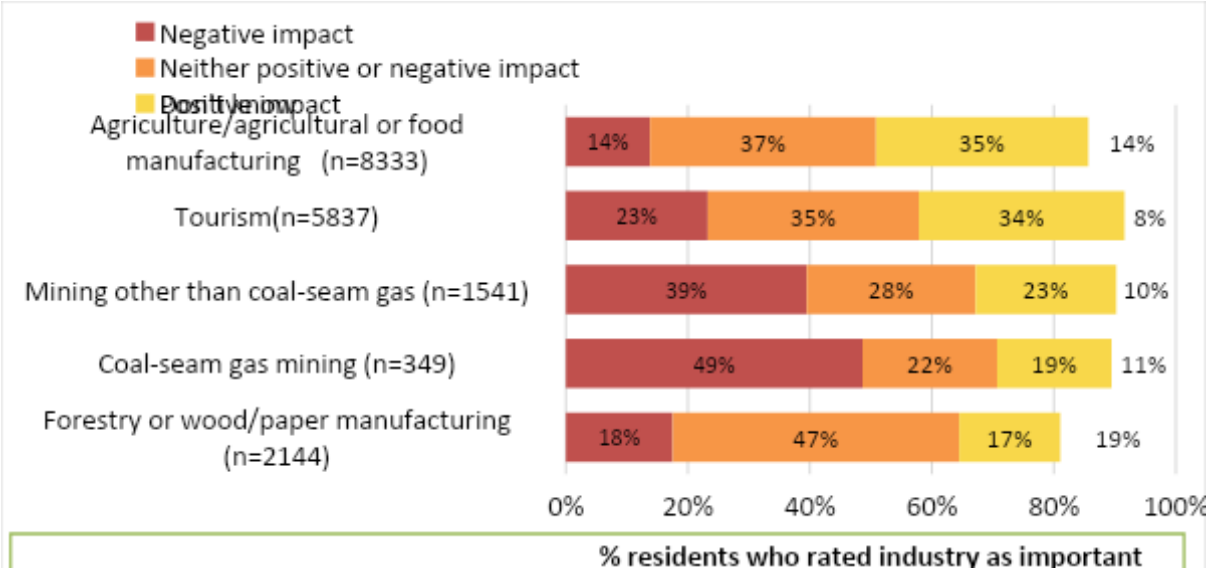

Figure 19 Perceptions about the impact of the forest industry on land prices, compared to other industries

Local water quality: The forest industry was more likely to be viewed as having negative impacts and less likely to be viewed as having positive impacts on water quality than agriculture or tourism (Figure 20). Mining industries were viewed as having more negative impacts and fewer positive impacts than other industries.

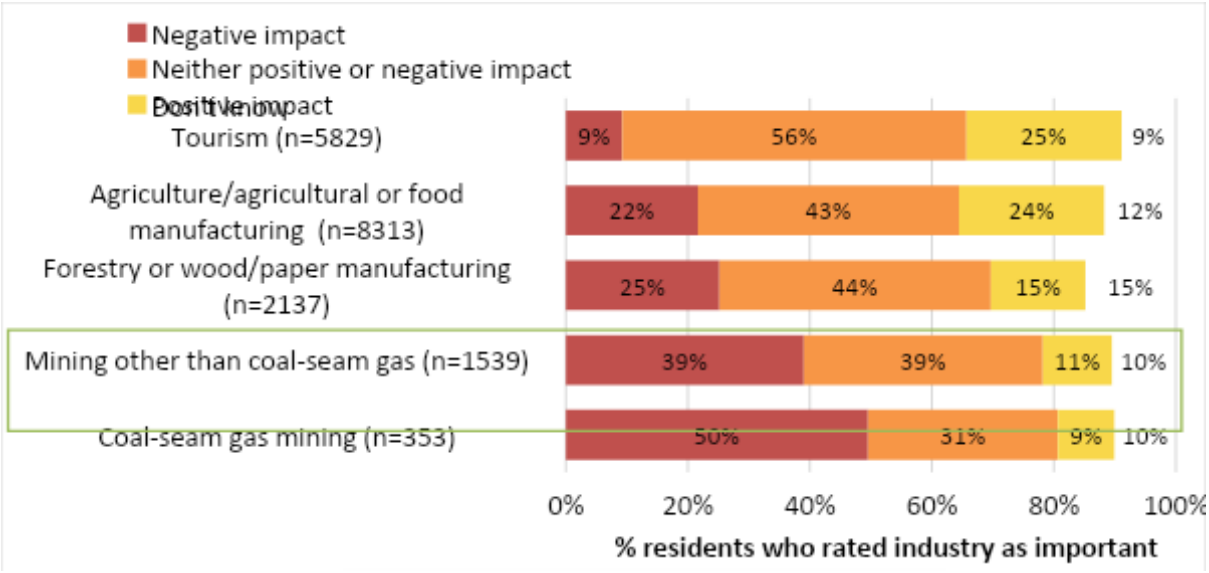

Figure 20 Perceptions about the impact of the forest industry on local water quality, compared to other industries

Bushfire risk: The forest industry was more commonly reported as having both negative and positive impacts than most other industries (Figure 21). This suggests that views about forestry and fire risk are more divided than for other industries.

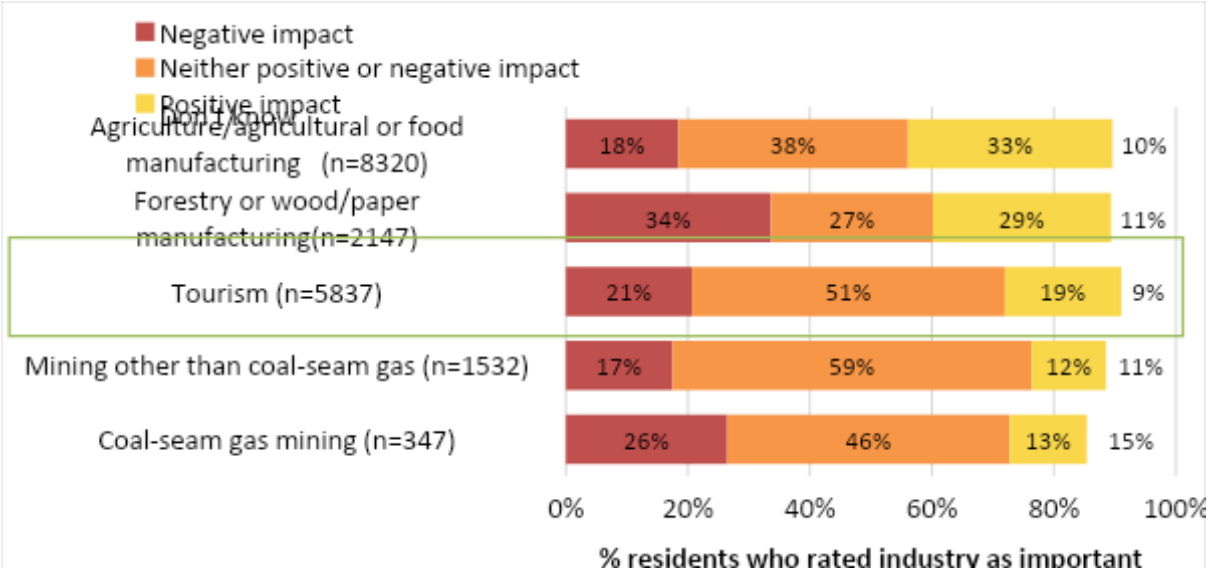

Figure 21 Perceptions about the impact of the forest industry on bushfire risk, compared to other industries

Health of local environment: The forest industry was viewed as having more negative and less positive impacts on health of the local environment than agriculture or tourism (Figure 22). It was viewed more positively than mining activities, which were much more likely to be viewed as impacting negatively on the local environment.

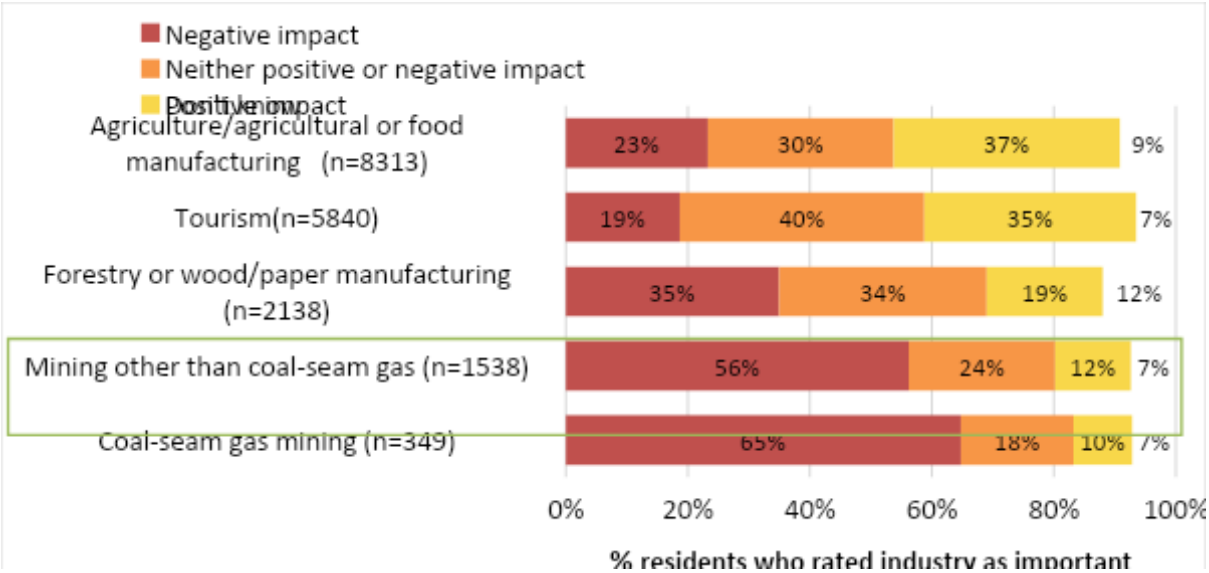

Figure 22 Perceptions about the impact of the forest industry on the health of the local environment, compared to other industries

Attractiveness of the local landscape: Whereas more than half of residents felt tourism and agriculture had positive impacts on the local landscape and very few (9% and 12% respectively) felt these had negative impacts, only 22% felt the forest industry had positive impacts and 45% felt impacts were negatives, compared to 58% feeling mining activities had negative impacts (Figure 23).

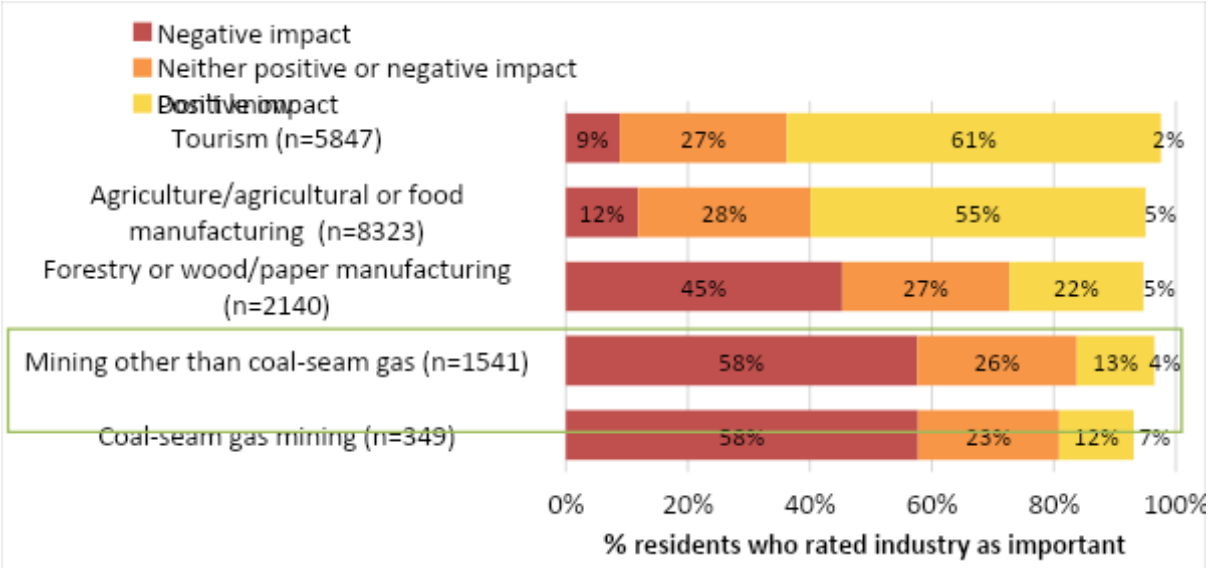

Figure 23 Perceptions about the impact of the forest industry on the attractiveness of the local landscape, compared to other industries

Local traffic: Around half of those living in communities in which they operate felt that tourism, mining and the forest industry had negative impacts on traffic on local roads and few that any of these industries had positive impacts. Agriculture was less likely to be viewed as impacting negatively on traffic, but not more likely to be viewed as having positive impacts (Figure 24). This highlights that while views about impacts of the forest industry on local traffic are relatively negative, these negative views reflect concerns about traffic more broadly that cross multiple industries, rather than being confined specifically to the forest industry.

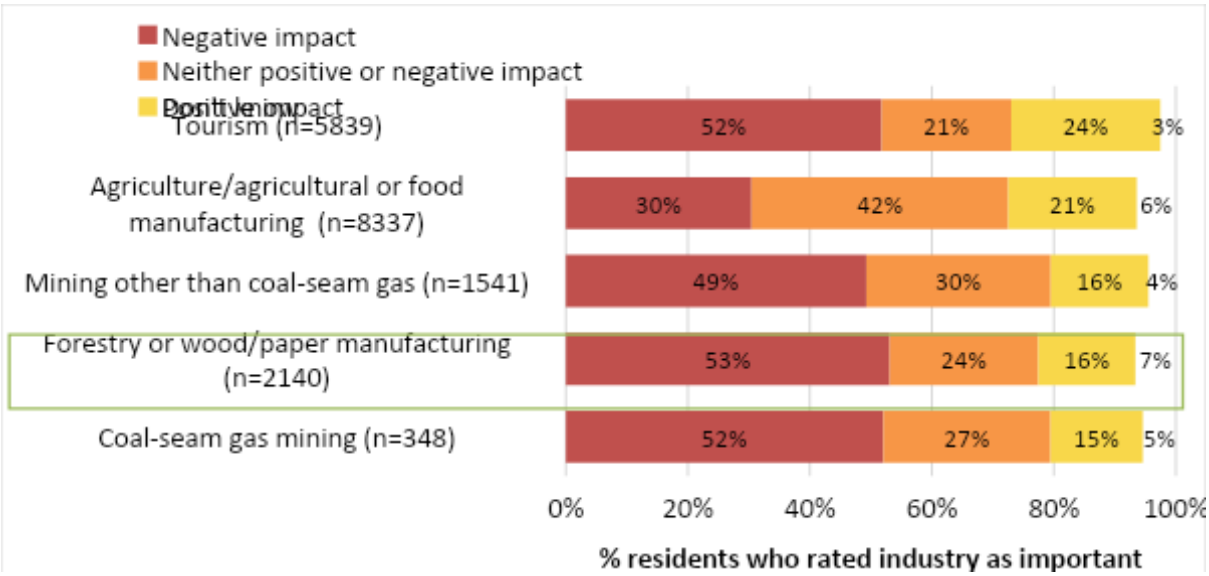

Figure 24 Perceptions about the impact of the forest industry on the traffic on local roads, compared to other industries

Quality of local roads: The forest industry was more likely than all others to be viewed as impacting negatively on quality of local roads, with 58% reporting negative impacts and 16% positive (Figure 25). Mining was also often viewed as having negative impacts with around half of residents viewing it as having negative impacts. Agriculture and tourism were least likely to be viewed as impacting

negatively (37% and 38% respectively), but not substantially more likely to be viewed as having positive impacts. While concerns about forestry were higher than for other industries, the results suggest that they also reflect overall concerns about the impacts of a number of industries on often poor quality local roads.

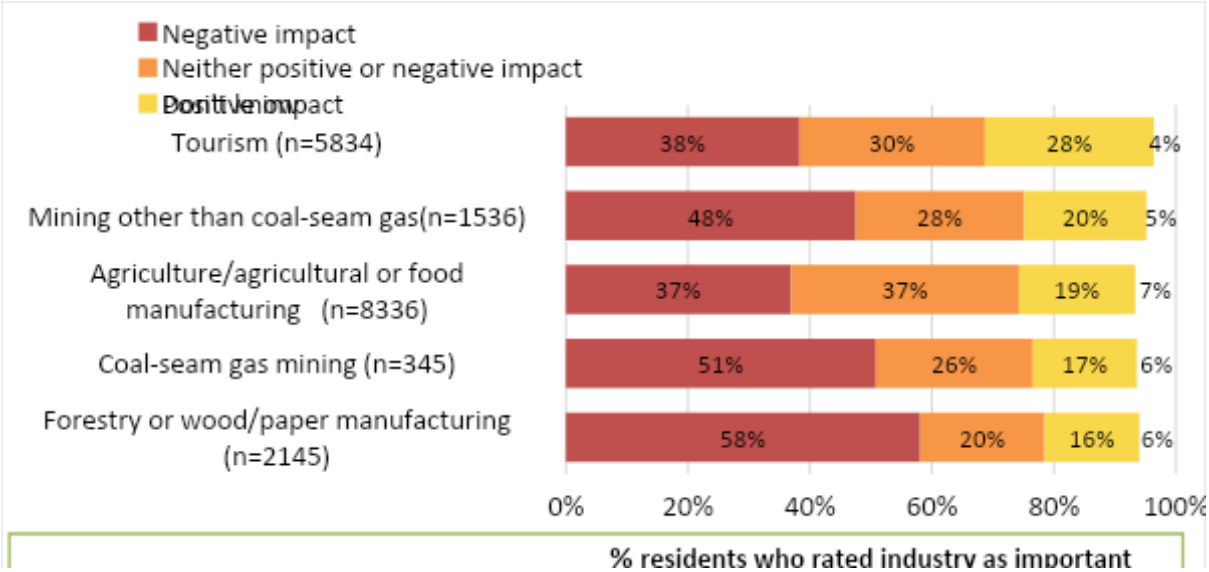

Figure 25 Perceptions about the impact of the forest industry on the quality of local roads, compared to other industries

Overall, the results suggest that the forest industry is viewed as having more positive impacts than the mining industry, but more negative impacts than agriculture or tourism. Almost all industries were viewed as impacting negatively on roads, and positively on employment. Both forestry and mining were more often viewed as having negative impacts on landscape amenity than tourism and agriculture. For most other issues – including environmental and human health, water quality, friendliness, cost of living, and land price impacts - forestry was viewed as having fewer positive impacts and more negative impacts than agriculture and tourism, but as having fewer negative impacts than mining.

6.3 Do views of forestry as a local industry differ between regions?

Views about benefits and costs of the forest industry were compared for people living in different states (Table 10) and specific forestry regions around the country, analysed for each region in which more than 30 people provided responses (Table 11).

Perceptions about the impacts of forestry sometimes varied by state, shown in Table 10. However, the differences were not typically consistent: for example, those living in Tasmania were more likely to view forestry as having positive impacts for human health, road quality and bushfire risk, and also more likely than average to view it as impacting negatively on road traffic, landscape amenity, water quality and health of the environment. Those living in Victoria were more likely to report negative impacts on human health, landscape amenity and health of the environment. Those living in Queensland were less likely to report negative impacts related to traffic, landscape and bushfire risk, but not more likely to report positive impacts. In South Australia, views were more positive than average about impacts on employment and landscape amenity, less likely to be negative about water quality and health of the environment, and less positive than average about impacts on bushfire risk and land prices.

Table 10 Perceptions about the impacts of the forest industry in different states

		Local employment		Cost of living		Friendliness		Human health		Traffic		Road quality		Landscape amenity		Water quality	
		Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Ne
	n	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Australia	2134	75.8	5.8	27.5	7.2	29.3	10.1	23.3	15.4	15.9	53.1	15.5	58.1	22.0	45.3	15.5	25
NSW	469	75.3	4.2	26.0	7.0	30.5	11.4	20.6	10.3	14.8	54.4	13.2	62.9	20.7	42.2	16.2	25
VIC	695	75.8	7.6	30.1	7.8	31.6	10.0	23.3	**23.3**	17.0	51.6	16.7	59.6	23.9	**51.7**	16.3	25
QLD	238	72.5	3.3	24.1	4.9	24.2	4.9	20.9	12.1	13.5	**46.1**	11.0	48.3	20.7	**33.5**	12.3	20
SA	151	**82.8**	4.2	24.7	5.5	24.9	4.8	25.6	13.5	15.0	52.4	12.2	59.6	**33.5**	**32.4**	13.7	**17**
WA	198	73.8	6.6	24.7	9.3	25.1	10.7	25.7	**9.6**	16.1	56.6	18.1	49.3	19.2	48.7	15.7	27
TAS	371	79.4	8.6	32.1	7.8	31.3	15.7	**29.4**	18.4	18.7	**60.5**	**24.2**	60.3	20.1	**54.8**	16.0	**31**

Measured on a scale of 1 to 7, from very negative impact (1) to very positive impact (7). A don't know option was also provided. In this tab
(positive impact) and a score of 1, 2 or 3 is reported as 'neg' (negative impact). The remaining proportion of respondents not presented in
negative) or 'don't know'.

When examined by region (Table 11), a complex range of differences emerged. However, in most cases differences between regions were relatively small even when statistically significant, with differences between regions rarely exceeding 10% (for example, 20% in one region holding a view versus 30% in another region). Given this, a simpler version of the table was developed that shows whether views were, overall, more positive or negative about different issues (Table 12). In that table, regions are classified with a tick if there were more positive views than average, with a cross if there were more negative views than average, and with both a tick and a cross if a higher than average proportion of people held negative views *and* a higher than average proportion held positive views (meaning there were fewer with neutral views than was typical).

People living in regions with some of the highest proportions of people employed in the industry typically viewed the industry as having more positive impacts on employment, including those living in the South West Slopes and Central Tablelands (NSW), Green Triangle, and Great Southern and Esperance. However, in many of these regions a higher than average proportion of residents also held negative views about some aspects of the industry, particularly impacts on roads. Overall:

- NSW: People living in the North East and Mid North Coast had more positive views about the industry and somewhat fewer negative views, although there were high levels of concerns about impacts on road quality; those in other regions such as the South West Slopes were more likely than average to view the industry as impacting positively on employment but negatively on traffic, road quality and health of the environment.
- Green Triangle (South Australia and Victoria): Mixed views were expressed about the impacts of the industry in the Green Triangle, with residents having more positive than average views about impacts on jobs, human health, and in South Australia about landscape amenity and environmental impacts; but more negative than average views about impacts on roads, bushfire risk and land prices.
- Victoria (excluding Green Triangle): Views about the forest industry were more negative than average in Western Victoria, mixed in the Central Highlands and Gippsland regions, and views more positive than the average in the North Central region.
- Queensland: Views were more mixed in Wide Bay Burnett and the Southern/South East region, and more positive in the Central and North region.
- Western Australia: Views about the impacts of the forest industry in Western Australia were often mixed, with positive views about impacts on employment in the Great Southern but more negative views about employment in the South West, where there have been closures and downsizing of some mills in recent years.
- Tasmania: People living in Southern Tasmania had more negative views of the forest industry compared to those living in the Northern and Cradle Coast regions.

Table 11 Perceptions about the impacts of the forest industry in different regions

Region[1]		n	Local employment		Cost of living		Friendliness		Human health		Traffic		Road quality		Landscape amenity		Water quality	
			Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
Australia		2134	75.8	5.8	27.5	7.2	29.3	10.1	23.3	15.4	15.9	53.1	15.5	58.1	22.0	45.3	15.5	
NSW	SW Slopes & C. T'lands	146	**82.7**	2.0	23.8	6.5	34.2	8.0	18.8	14.7	12.1	**61.8**	**9.4**	**71.8**	19.5	46.1	16.2	
	NE & Mid North Coast	112	77.8	5.3	31.0	8.0	**34.6**	14.2	25.5	**7.6**	16.0	52.7	16.6	**66.8**	24.6	**35.0**	14.7	
	South Coast & S. Inland	79	**83.7**	3.3	**18.7**	5.0	29.9	20.8	20.3	10.3	15.4	**59.6**	**7.6**	**70.7**	**13.5**	**63.2**	**10.1**	
VIC	Green Triangle	105	**83.4**	**13.0**	**33.7**	7.2	23.9	10.9	**31.7**	9.9	13.2	**84.6**	15.6	**82.6**	22.3	**65.3**	14.1	
	Western	93	58.1	3.9	**12.5**	6.9	**21.3**	5.2	**12.8**	14.0	20.0	**45.4**	**9.1**	61.5	**10.1**	**65.6**	**7.2**	
	North Central	143	80.2	3.9	**33.2**	7.5	31.7	6.4	23.6	17.3	16.7	**38.9**	18.8	**48.0**	35.3	**37.0**	**21.4**	
	Cent H'lands & Gippsland	340	77.0	8.3	**32.7**	8.1	**34.3**	11.8	23.5	**29.0**	17.3	50.6	17.9	58.3	24.3	**50.3**	17.3	
QLD	Wide Bay Burnett	98	79.9	5.9	24.4	8.7	24.5	9.1	20.2	17.1	**9.6**	**43.4**	**8.4**	51.5	17.4	**33.8**	10.6	
	Central & North	48	79.2	0.0	**32.8**	0.1	25.2	1.0	22.3	**6.8**	**23.1**	48.7	18.6	49.1	**15.1**	**35.6**	**9.8**	
	Southern & South East	89	**56.7**	1.7	**18.3**	2.7	**23.2**	1.1	21.4	8.1	13.3	49.0	10.1	43.6	**29.6**	**32.2**	16.4	
SA	Green Triangle	106	78.3	6.1	29.8	5.4	30.4	5.1	**30.1**	18.4	12.4	**63.4**	**9.4**	73.5	**32.2**	**37.9**	15.8	
WA	Great Southern & Esperance	82	**81.7**	3.6	**16.6**	6.7	**20.6**	5.6	22.3	**5.6**	16.2	53.4	14.4	48.6	**7.1**	**52.1**	**5.7**	
	SW WA	104	**67.3**	8.9	31.5	8.0	31.0	12.1	**31.0**	13.5	17.7	**63.2**	**22.6**	53.5	25.1	48.8	**24.2**	
TAS	Cradle Coast	126	78.8	7.1	**38.1**	6.7	**37.6**	10.7	**35.0**	13.8	**24.4**	55.0	**27.5**	47.8	19.9	**56.1**	19.2	
	Northern	141	76.4	**13.7**	**35.0**	4.5	**24.1**	**16.0**	**32.9**	16.1	**22.9**	54.9	**35.4**	53.8	22.6	48.3	15.8	
	Southern	102	**82.4**	5.8	24.0	11.7	31.4	**20.1**	21.4	**24.6**	**9.8**	**70.5**	12.1	**77.1**	18.1	**59.3**	13.2	

Measured on a scale of 1 to 7, from very negative impact (1) to very positive impact (7). A don't know option was also provided. In this table, a score of 5, score of 1, 2 or 3 is reported as 'neg' (negative impact). The remaining proportion of respondents not presented in the table selected 4 (neither positive o combined in this table due to low responses: South West Slopes and Central Tablelands (NSW), North East and Mid North Coast (NSW), Central and North (QLD). The following regions in NSW did not have enough responses: Hunter & Central Coast, Cypress and River Red Gum. [1]A summary of the LGAs making

Table 12 Identification of whether perceptions about the impacts of the forest industry in different regions were more positive or negative than typical for Australia

Region		Local jobs	Cost of living	Friend-liness	Human health	Traffic	Road quality	Landscape amenity
NSW	SW Slopes & C. T'lands	✔						
	NE/Mid North Coast			✔				✔
	South Coast & S. Inland	✔						
SA	Green Triangle				✔			✔
VIC	Green Triangle	✔	✔		✔			
	Western					✔		
	North Central		✔			✔	✔	✔
	C. H'lands & Gippsland		✔	✔	✔			
QLD	Wide Bay Burnett					✔		✔
	Central & North		✔			✔		✔
	Southern & South East							✔
WA	Great Southern	✔						
	South West				✔		✔	
TAS	Cradle Coast		✔	✔	✔	✔	✔	
	Northern		✔		✔	✔	✔	
	Southern	✔		✔				

6.4 Do views of forestry as a local industry differ between groups?

The perceived benefits and costs of the forest industry were further explored to identify whether different types of people are more likely to report positive or negative impacts (Table 13). Overall, there were few differences between groups, with the following exceptions:

- Women were less likely than men to feel the forest industry had positive impacts on local jobs (72.0% compared to 80.6%)
- Farmers were more likely to feel the forest industry had negative impacts for employment, friendliness, traffic, road quality, water quality, bushfire risk and land prices than non-farmers, although they were also more likely to feel the industry contributed positively to friendliness and human health
- Those who had not completed high school were more likely to express positive views about impacts of the industry on cost of living, friendliness, traffic, road quality, landscape amenity, water quality and bushfire risk
- Those with a university degree were more likely to feel the industry impacted negatively on traffic, landscape amenity, water quality and health of the environment.

In most cases differences in views between groups were relatively small, with less than a 10% difference in the proportion expressing positive or negative views in almost all cases.

Table 13 Perceptions about the impacts of the forest industry by different sociodemographic groups

		Local employment		Cost of living		Friendliness		Human health		Traffic		Road quality		Landscape amenity		Water quality	
		Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Ne
	n	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Australia	2134	75.8	5.8	27.5	7.2	29.3	10.1	23.3	15.4	15.9	53.1	15.5	58.1	22.0	45.3	15.5	25
Female	1314	**72.0**	6.5	27.5	7.8	29.1	9.5	23.5	17.1	15.6	53.1	16.3	57.6	24.0	46.3	16.7	24
Male	796	**80.6**	4.8	27.4	6.5	29.7	10.9	23.0	13.2	16.3	53.2	14.5	58.7	19.3	44.0	13.9	25
Aged 18-39	327	74.7	7.5	28.7	10.0	29.2	10.7	24.7	17.6	14.0	47.8	15.1	52.3	24.4	43.6	15.4	24
Aged 40-54	584	78.6	4.7	29.2	5.6	28.8	8.9	22.3	13.9	14.4	52.5	14.4	57.2	20.7	45.8	16.0	21
Aged 55-64	623	80.1	6.5	26.4	5.8	30.3	8.8	24.2	14.2	17.6	57.1	17.9	62.7	22.3	44.9	16.9	27
Aged 65+	590	70.8	4.7	25.1	7.3	29.5	11.8	22.2	15.8	18.3	56.4	15.6	61.8	20.6	46.8	14.1	28
Farmer	498	74.2	**11.0**	**36.2**	3.8	**35.8**	**16.4**	**32.0**	13.4	16.0	**60.1**	13.5	**63.5**	22.5	43.8	17.9	**29**
Not a farmer	1565	76.1	5.6	27.5	7.4	29.3	9.7	23.2	15.0	15.6	53.0	15.6	57.8	21.9	45.3	15.5	24
Did not obtain year 12 certificate	276	78.9	7.3	**36.3**	11.4	**35.8**	11.6	29.9	17.7	**27.1**	**42.6**	**25.1**	50.3	**35.0**	**33.7**	**25.9**	21
Year 12 or equivalent	201	79.6	5.6	25.0	**14.2**	**42.2**	12.8	**31.8**	17.6	20.1	40.8	14.8	51.0	27.8	35.4	22.9	19
Certificate or diploma	726	73.9	4.9	32.1	7.0	35.8	6.8	26.1	13.4	16.4	50.8	16.1	58.5	21.5	42.0	15.4	22
University degree	925	75.5	6.1	22.0	5.0	20.1	11.8	17.8	16.0	11.7	**60.4**	13.0	61.2	17.9	**53.1**	11.5	**29**

Measured on a scale of 1 to 7, from very negative impact (1) to very positive impact (7). A don't know option was also provided.
In this table, a score of 5, 6 or 7 is reported as 'pos' (positive impact) and a score of 1, 2 or 3 is reported as 'neg' (negative impact).
The remaining proportion of respondents not presented in the table selected 4 (neither positive or negative) or 'don't know'.

6.5 Do views about forestry as a local industry predict acceptability of forestry activities?

Social license theory suggests that the experiences of an industry at the local scale will influence social license granted to that industry. To identify whether this is the case for the forest industry, the statistical association between perceptions of local impacts of the forest industry and the three activities was examined: (i) timber plantations (Table 14), (ii) native forest harvesting (Table 15), and (iii) environmental tree planting (Table 16). These associations were examined for (i) all forestry regions irrespective of the type of industry activity, (ii) regions in which the forest industry is dominated by plantation forestry with little or no timber harvesting in native forests, (iii) regions in which all or almost all forest industry activity involves harvesting native forests with little or no plantation industry, and (iv) regions in which the industry includes both timber plantations and native forest harvesting. If social license theory is correct, views about impacts of the industry should predict acceptability, but only for the activities that are actually occurring in a given community, and less so (or not at all) for activities that don't occur or are not related. For example: if a person living in a region with substantial timber plantations but no native forest harvesting views the local costs and benefits of the forest industry as positive, this would be expected to increase the likelihood they find timber plantations acceptable, but to make little or no difference to their views about native forest harvesting or environmental tree planting.

Local experiences of the industry strongly influence social license for timber plantations (Table 14): people who lived in regions with timber plantations were more likely to find timber plantations acceptable if they also felt they had more positive (or fewer negative) impacts. In regions where there is little plantation-based industry, this association was not present, as expected. This suggests that working to address concerns about negative impacts of the industry on local communities may improve social license for timber plantations. The strongest predictors of acceptability were perceptions of impacts of the industry on health of the local environment and local employment, suggesting these are two key areas to focus on in order to build social license.

There was also a reasonably strong association between social license for native forest harvesting and experiences of costs and benefits of this activity (Table 15). As expected, this association was much stronger for people living in regions in which there is harvesting of native forests, and much weaker for those living in regions where the industry is wholly or mostly based on plantations. This again is consistent with the theory of social license, which argues that perceptions of local costs and benefits will influence social license.

As expected, views about costs and benefits of the forest industry in a person's local region were not typically strong predictors of whether they found environmental tree planting acceptable (Table 16). Even where there were statistically significant associations, the strength of the association ('effect size') was typically small, with overall much weaker associations than for predicting views about timber plantations or harvest of native forest.

Table 14 Relationship between perceptions about the benefits and costs of the forest industry and acceptability of planting trees on good agricultural land to produce wood and paper products

Perceptions about forestry impacts in local communities	Relationship with acceptability of planting trees on good agricultural land to produce								
	In all forestry regions			In regions dominated by plantation forestry			In regions dominated by nati forestry		
	n	Effect size and significance (r_s, p)	Significant relationship?	n	Effect size and significance (r_s, p)	Significant relationship?	n	Effect size and significance (r_s, p)	Signifi relatio
Local employment	1834	0.20, 0.00	✓	476	0.21, 0.00	✓	157	0.07, 0.36	✗
Cost of living (food, rent)	1598	0.12, 0.00	✓	423	0.10, 0.04	✓	146	0.09, 0.29	✗
Friendliness of the local community	1682	0.19, 0.00	✓	437	0.17, 0.00	✓	147	0.22, 0.01	✓
Health of local residents	1660	0.16, 0.00	✓	436	0.16, 0.00	✓	146	0.26, 0.00	✓
Traffic on local roads	1841	0.17, 0.00	✓	485	0.15, 0.00	✓	157	0.13, 0.10	✗
Quality of local roads	1855	0.16, 0.00	✓	491	0.12, 0.01	✓	160	0.06, 0.47	✗
Attractiveness of the local landscape	1854	0.19, 0.00	✓	491	0.19, 0.00	✓	161	0.08, 0.34	✗
Local water quality	1663	0.20, 0.00	✓	430	0.20, 0.00	✓	153	0.07, 0.41	✗
Health of local environment	1724	0.23, 0.00	✓	447	0.23, 0.00	✓	157	0.12, 0.13	✗
Bushfire risk	1768	0.11, 0.00	✓	468	0.10, 0.03	✓	156	0.05, 0.51	✗
Land prices	1595	0.15, 0.00	✓	423	0.09, 0.07	✗	148	-0.03, 0.70	✗

Some regions are dominated by a mix of plantation forestry and native forestry. Respondents in these regions are included in both sets of analyses. For a s see Appendix 2.

Table 15 Relationship between perceptions about the benefits and costs of the forest industry and acceptability of logging native forests for wood production

Perceptions about forestry impacts in local communities	Relationship with acceptability of logging native forests for wood p								
	In all forestry regions			In regions dominated by plantation forestry			In regions dominated by nati forestry		
	n	Effect size and significance (r_s, p)	Significant relationship?	n	Effect size and significance (r_s, p)	Significant relationship?	n	Effect size and significance (r_s, p)	Signifi relatio
Local employment	1843	0.22, 0.00	✓	481	0.15, 0.00	✓	157	0.37, 0.00	✓
Cost of living (food, rent)	1609	0.17, 0.00	✓	427	0.09, 0.05	✗	147	0.23, 0.00	✓
Friendliness of the local community	1693	0.30, 0.00	✓	443	0.15, 0.00	✓	148	0.34, 0.00	✓
Health of local residents	1670	0.26, 0.00	✓	441	0.09, 0.05	✗	146	0.33, 0.00	✓
Traffic on local roads	1860	0.31, 0.00	✓	491	0.16, 0.00	✓	158	0.32, 0.00	✓
Quality of local roads	1871	0.26, 0.00	✓	497	0.12, 0.01	✓	161	0.25, 0.00	✓

Attractiveness of the local landscape	1871	0.34, 0.00	✓	497	0.15, 0.00	✓	162	0.27, 0.00	✓
Local water quality	1679	0.31, 0.00	✓	438	0.17, 0.00	✓	153	0.35, 0.00	✓
Health of local environment	1737	0.36, 0.00	✓	454	0.16, 0.00	✓	158	0.33, 0.00	✓
Bushfire risk	1780	0.31, 0.00	✓	474	0.15, 0.00	✓	157	0.35, 0.00	✓
Land prices	1608	0.25, 0.00	✓	430	0.14, 0.00	✓	149	0.26, 0.00	✓

Some regions are dominated by a mix of plantation forestry and native forestry. Respondents in these regions are included in both sets of analyses. For a s
Appendix 2.

Table 16 Relationship between perceptions about the benefits and costs of the forest industry and acceptability of planting trees on good agricultural land for environmental purposes

Perceptions about forestry impacts in local communities	**Relationship with acceptability of planting trees on good agricultural land for en**								
	In all forestry regions			**In regions dominated by plantation forestry**			**In regions dominated by nat forestry**		
	n	**Effect size and significance *(r_s, p)***	**Significant relationship?**	**n**	**Effect size and significance *(r_s, p)***	**Significant relationship?**	**n**	**Effect size and significance *(r_s, p)***	**Signifi relatio**
Local employment	1843	0.01, 0.65	✗	483	0.11, 0.01	✓	162	-0.15, 0.06	✗
Cost of living (food, rent)	1605	-0.01, 0.86	✗	426	0.10, 0.03	✓	151	-0.04, 0.62	✗
Friendliness of the local community	1692	-0.01, 0.66	✗	442	0.12, 0.02	✓	153	-0.03, 0.70	✗
Health of local residents	1670	-0.03, 0.24	✗	441	0.08, 0.11,	✗	151	0.09, 0.29	✗
Traffic on local roads	1855	-0.05, 0.04	✓	491	0.04, 0.35	✗	163	0.07, 0.35	✗
Quality of local roads	1868	-0.04, 0.10	✗	496	0.05, 0.31	✗	166	0.00, 0.96	✗
Attractiveness of the local landscape	1868	-0.09, 0.00	✓	497	-0.01, 0.82	✗	167	0.03, 0.74	✗
Local water quality	1675	-0.06, 0.02	✓	435	0.00, 0.98	✗	157	-0.02, 0.83	✗
Health of local environment	1736	-0.10 0.00	✓	452	-0.03, 0.58	✗	162	-0.04, 0.62	✗
Bushfire risk	1779	-0.13, 0.00	✓	473	-0.01, 0.84	✗	161	-0.24, 0.00	✓
Land prices	1604	-0.07, 0.01	✓	428	0.04, 0.48	✗	153	-0.11, 0.18	✗

Some regions are dominated by a mix of plantation forestry and native forestry. Respondents in these regions are included in both sets of analyses. For a s
see Appendix 2.

6.6 Conclusions

The findings confirm that being viewed as a good local industry that has more benefits than costs, and does not have unacceptable costs, is an important predictor of social license. While the forest industry is generally viewed as being positive for local jobs, many people have neutral or negative views about impacts on bushfire risk, water quality and local environmental health, and most had negative views about the impacts of the industry on attractiveness of the landscape and local roads. Negative experiences of the impacts of the forest industry in a person's local region contribute to low levels of acceptance of the forest industry, and vice versa. Overall, the industry is viewed more negatively than agriculture and tourism in terms of its impacts on social, economic and environmental wellbeing in local communities, but generally more positively than mining activities. This overall finding held across almost every region and socio-demographic group examined, although there were some differences between regions. Further work is needed to better understand why the industry is perceived as having different benefits and costs in different regions, for example why perceptions are generally more negative in Southern region of Tasmania than in the Cradle Coast and Northern regions.

Whereas acceptability of native forest harvesting was not predicted by experiences of neighbouring landholders, it was predicted by experiences of local community members. This may reflect that many people who live next door to native forests experience harvesting of that forest only infrequently (often only once in their lifetime, with many individual forest areas harvesting once every few decades). At the local community scale residents regularly experience the overall effects of operation of the industry, which may create more of a link between their views about impacts of the industry and acceptability than occurs at the scale of the neighbouring landholder.

7.0 Discussion and conclusions

Social license varies substantially for different forest industry activities. There are much higher levels of social license for timber plantations than for native forest harvesting. Native forest harvesting has very low social license, with very few people being at the 'acceptance' level. Many of those who do not find this activity acceptable are likely to be at the blocking or withheld level of social license, rather than the tolerance level, based on the strength of their negative response when asked about acceptability. Even amongst the groups and in the regions with the highest acceptance of this activity, less than 30% find it acceptable and the majority find it unacceptable. Planting trees on good agricultural land for wood and paper production, however, has higher levels of social license: 43% find timber plantations acceptable, and of the 29% who find it unacceptable most do not find it highly unacceptable (instead reporting slight or moderate unacceptability), indicating many are at the 'tolerance' level rather than withholding or blocking social license.

Native forest harvesting appears to be viewed similarly to mining activities, suggesting that it is viewed as extractive and non-renewable. To a lesser extent, timber plantations are not strongly associated with activities involving renewable/environmentally friendly practices, with stronger support in the Australian population for actions such as establishing solar farms and wind farms than for timber plantations. This suggests that messages that help increase awareness of forest industry activities as renewable rather than extractive may assist in building social license at the national scale.

However, this needs to be done with some caution. When examining the factors that predict social license, the most significant predictor of acceptability was views about the impacts of the forest industry on health of the environment. This was particularly the case for native forest harvesting, and to a lesser extent for plantations. Concerns about environmental impacts do not necessarily relate to concerns about renewability: they often focus on issues such as concerns about impacts on animal habitat, soil health, water quality and plant diversity, to name a few. The environmental impacts of greatest concern need to be more specifically identified and responded to as part of addressing social license concerns.

The impact of the industry on employment was the second strongest predictor of acceptability of both native forest harvesting and timber plantations. This is consistent with previous social license work that has identified economic legitimacy as an important prerequisite of achieving social license at the local scale. The industry typically employs a relatively small proportion of people in any given community, in almost all cases less than 5% (Schirmer et al. 2017a,b; 2018a,b,c), and this is unlikely to change in future. However, jobs generated by the forest industry are typically stable through periods of drought or other change which typically lead to decline in agricultural and tourism jobs, meaning that employment benefits of the industry can be better communicated through identifying how forest industry jobs contribute to greater economic stability through helping diversify local economies, and through this helping to reduce the impact of downturns in other industries. Clear and consistent messages about jobs in the industry are important to building social license in those communities where the industry does generate jobs. Recognition is also needed that in some regions, particularly where there are few or no processing facilities, the jobs generated by the industry are often relatively small, with the majority of jobs generated by processing of harvested timber rather than by the growing and harvesting of trees (Schirmer et al. 2017a,b; 2018a,b,c).

While there are some differences in social license amongst different groups and across regions, for the most part these differences are relatively small. This suggests that, as argued by Dare et al. (2014), social license crosses scales, with local perceptions in part a result of overall public narratives about native forest harvesting and timber plantations that are occurring at the national scale, rather than relying solely on what occurs at the local scale between the forest industry and local residents. This also suggests that rather than social license being differentiated for individual businesses within the industry, views about social license are typically formed about the industry as a whole. This also supports a need for industry-wide action to build social license, and for consistent responses by industry members to concerns that drive low social license.

However, some care is needed: the strength of views about native forest harvesting suggests that this activity is viewed as contradicting strongly held values for many people, rather than as simply resulting from concerns about specific costs and benefits that can be more readily addressed through changes in practice and improved communication. Deeply held values cannot be readily shifted through communication or even through changing practices: people typically change their behaviour to match their values, and do not change values readily (e.g. McLeod 2001). Messages that are seen as contradicting deeply held values can trigger social conflict, with a common response being to oppose the message, rather than to accept any shift to the value the message challenges (e.g. Opotow and Weiss 2000). Better understanding the extent to which low social license for native forest harvesting results from deeply held values versus from beliefs and attitudes that are more likely to change in response to changed practices and improved communication is essential to design of effective strategies for building social license.

While the findings suggest that social license at local scale is in part a result of broader 'narratives' about the industry that are generated at larger scales and communicated through the media, they also suggest that, consistent with multiple past studies, practices at local scale influence social license. Experiences of the costs and benefits of the industry at the neighbour or local scale affected the social license given to the industry, particularly for timber plantations. To build social license therefore requires addressing local scale concerns, as well as larger-scale responses to concerns communicated at the national or state level via media and peak stakeholder groups. The most effective strategies for building social license will involve specific actions at local scale to improve practices and ensure they are consistent with social values, which then provides a basis for larger scale communication to improve understanding of the industry and its practices.

Ensuring good local practice is particularly important for obtaining social license from rural landholders, a particularly critical group if expansion of timber plantations is to occur successfully in future. For rural landholders, particularly farmers, experiences of neighbouring plantations and of the plantation industry in their local community are very strong predictors of whether they overall grant social license to the industry in the form of accepting it, and they are less likely than other groups to find plantations acceptable. To increase levels of social license for plantation amongst farmers, there is a need to improve the extent to which the industry ensures it adopts the rural social norms required to be seen as a 'good neighbour'. Specifically, improving consultation with neighbours, helping out neighbours, and joining in typical activities done to address issues such as pests, weeds, fencing and water quality are important aspects of achieving this.

8.0 References

Bice S. (2014). What gives you a social licence? An exploration of the social licence to operate in the Australian mining industry. *Resources,* 3, 62–80.

Boutilier, R. (2014). Frequently asked questions about the social licence to operate, *Impact Assessment and Project Appraisal*, 32:4, 263-272, DOI: 10.1080/14615517.2014.941141

Boutilier, Robert & Zdziarski, Michal & M. Mellam, A. (2015). Using the Social License Concept to Appreciate Conflict in Stakeholder Networks. Academy of Management Proceedings. Available from: https://www.researchgate.net/publication/291358622_Using_the_Social_License_Concept_to_Appreciate_Conflict_in_Stakeholder_Networks [accessed Jul 31 2018].

Cashore, B., Vertinsky, I. and Raizada, R. (2001). Firms' responses to external pressures for sustainable forest management in British Columbia and the US Pacific Northwest. In *Sustaining the Pacific Coast Forests: Forging Truces in the War in the Woods.* Alper, D. and Salazar, D. (eds). University of British Columbia Press, pp. 80–119.

Charnley, S. (2006). Industrial plantation forestry: Do local communities benefit?. *Journal of Sustainable Forestry*, *21*(4), 35-57.

Dare, M. L., Vanclay, F., & Schirmer, J. (2012). Public participation in commercial environments: critical reflections on community engagement methods used in the Australian plantation forestry industry. *Australian forestry*, *75*(3), 180-191.

Dare, M., Schirmer, J. and Vanclay, F. (2011). Handbook for operational community engagement within Australian plantation forest management.

Dare, M., Schirmer, J. and Vanclay, F. (2014). Community engagement and social license to operate. *Impact Assessment and Project Appraisal*, 32(3), 188-197.

Dare, M., Vanclay, F., & Schirmer, J. (2011). Understanding community engagement in plantation forest management: insights from practitioner and community narratives. *Journal of Environmental Planning and Management*, *54*(9), 1149-1168.

Dargavel, J. (1995). Fashioning Australia's Forests. Oxford University Press. Melbourne.

Edwards, P. and Lacey, J. (2014) Can't climb the trees anymore: social licence to operate, bioenergy and whole stump removal in Sweden. *Soc. Epistemol*. 28, 239–257.

Esteves, A.M. and Vanclay, F. (2009). Social Development Needs Analysis as a tool for SIA to guide corporate-community investment: Applications in the minerals industry. *Environmental Impact Assessment Review* 29(2):137-145

Ford, R.M. and Williams, K.J. (2016). How can social acceptability research in Australian forests inform social licence to operate?. *Forestry: An International Journal of Forest Research*, 89(5), pp.512-524.

Gehman, J., Lefsrud, L.M. and Fast, S. (2017). Social license to operate: Legitimacy by another name? *Canadian Public Administration*, *60*(2), pp.293-317.

Gordon, M., Lockwood, M., Vanclay, F., Hanson, D., & Schirmer, J. (2012). Divergent stakeholder views of corporate social responsibility in the Australian forest plantation sector. *Journal of environmental management*, *113*, 390-398.

Gordon, M., Schirmer, J., Lockwood, M., Vanclay, F., & Hanson, D. (2013). Being good neighbours: Current practices, barriers, and opportunities for community engagement in Australian plantation forestry. *Land Use Policy*, *34*, 62-71.

Gunningham, N., Kagan, R. and Thornton, D. (2004). Social licence and environmental protection: Why businesses go beyond compliance. *Law and Social Inquiry* 29(2):307-341.

Johnson, T.P., & Wislar, J.S. (2012). Response rates and nonresponse errors in surveys. Journal of the *American Medical Association*, 307(17), 1805-1806.

Joyce, S. and Thompson I. (2000). Earning a social licence to operate: Social acceptability and resource development in Latin America. *The Canadian Mining and Metallurgical Bulletin* 93(1037).

Lacey, J. and Lamont, J. (2014). Using social contract to inform social licence to operate: an application in the Australian coal seam gas industry. *Journal of Cleaner Production*, 84, pp.831-839.

Lacey, J., Edwards, P. and Lamont, J. (2016). Social licence as social contract: procedural fairness and forest agreement-making in Australia. *Forestry: An International Journal of Forest Research*, 89(5), pp.489-499.

Lester, L. (2016). Media and social licence: on being publicly useful in the Tasmanian forests conflict. *Forestry: An International Journal of Forest Research,* 89(5), pp.542-551.

Leys, A. J., & Vanclay, J. K. (2010). Land-use change conflict arising from plantation forestry expansion: Views across Australian fencelines. *International Forestry Review*, *12*(3), 256-269.

McLeod, M. S. J. M. (2001). Values, communication behavior, and political participation. *Political communication*, *18*(3), 273-300.

Moffat, K., and Zhang, A. (2014). The paths to social licence to operate: an integrative model explaining community acceptance of mining. *Resources Policy*, 39, 61–70.

Moffat, K., Lacey, J., Zhang, A. and Leipold, S. (2016). The social licence to operate: a critical review. *Forestry: An International Journal of Forest Research*, 89(5), pp.477-488.

Opotow, S., & Weiss, L. (2000). New ways of thinking about environmentalism: Denial and the process of moral exclusion in environmental conflict. *Journal of Social Issues*, *56*(3), 475-490.

Owen, J.R. and Kemp, D. (2013). Social licence and mining: A critical perspective. *Resources Policy.* 38:29-35.

Schirmer, J., Mylek, M., Magnusson, A., Peel, D. and Morison, J. (2018a). Socio-economic impacts of the forest industry: South West Slopes and Central Tablelands. Report produced for Forest and Wood Products Australia. University of Canberra, Canberra.

Schirmer, J., Mylek, M., Magnusson, A., Peel, D. and Morison, J. (2018b). Socio-economic impacts of the forest industry: Queensland. Report produced for Forest and Wood Products Australia. University of Canberra, Canberra.

Schirmer, J., Mylek, M., Magnusson, A., Yabsley, B. and Morison, J. (2017a). Socio-economic impacts of the forest industry: Green Triangle. Report produced for Forest and Wood Products Australia. University of Canberra, Canberra.

Schirmer, J., Mylek, M., Magnusson, A., Yabsley, B. and Morison, J. (2017b). Socio-economic impacts of the forest industry: Western Australia. Report produced for Forest and Wood Products Australia. University of Canberra, Canberra.

Schirmer, J., Mylek, M., Magnusson, A., Yabsley, B. and Morison, J. (2018c). Socio-economic impacts of the forest industry: Victoria (excluding Green Triangle). Report produced for Forest and Wood Products Australia. University of Canberra, Canberra.

Schirmer, J. (2007). Plantations and social conflict: exploring the differences between small-scale and large-scale plantation forestry. *Small-scale forestry*, *6*(1), 19-33.

Schirmer, J. 2007. Plantations and social conflict: exploring the differences between small-scale and large-scale plantation forestry. *Small-scale forestry*, *6*(1), 19-33.

Schirmer, J. (2013). Environmental activism and the global forest sector. *The Global Forest Sector: Changes, Practices, and Prospects*, 203-235.

Schirmer, J., & Bull, L. (2011). Planting trees for carbon sequestration: what do landholders think. *Cooperative Research Centre for Forestry, Hobart*.

Schirmer, J., & Bull, L. (2014). Assessing the likelihood of widespread landholder adoption of afforestation and reforestation projects. *Global environmental change*, *24*, 306-320.

Schirmer, J., & Tonts, M. (2003). Plantations and sustainable rural communities. *Australian Forestry*, *66*(1), 67-74.

Schirmer, J., Pirard, R., & Kanowski, P. (2015). Promises and perils of plantation forestry. In *Forests, Business and Sustainability* (pp. 154-178). Routledge New York, USA.

Thomson, I. & Boutilier, R. G. (2011). Social license to operate. In P.Darling (Ed.), *SME Mining Engineering Handbook* (pp. 1779-1796). Littleton, CO: Society for Mining, Metallurgy and Exploration.

Tonts, M., & Schirmer, J. (2005). Managing social conflict in the timber plantation industry: building consensus or deepening divisions. In *Consent and consensus: politics, media and governance in twentieth century Australia*. API Network.

Vanclay F. 2014. Developments in Social Impact Assessment: An introduction to a collection of seminal research papers. In: Vanclay F. editor. *Developments in Social Impact Assessment.* Cheltenham: Edward Elgar. p. xv-xxxix.

Williams, K. (2011). Relative acceptance of traditional and non-traditional rural land uses: Views of residents in two regions, southern Australia. *Landscape and urban planning*, *103*(1), 55-63.

Williams, K. J. (2014). Public acceptance of plantation forestry: Implications for policy and practice in Australian rural landscape. *Land Use Policy*, *38*, 346-354.

Williams, K. J., & Schirmer, J. (2012). Understanding the relationship between social change and its impacts: The experience of rural land use change in south-eastern Australia. *Journal of Rural Studies*, *28*(4), 538-548.

Appendix 1 – Additional data

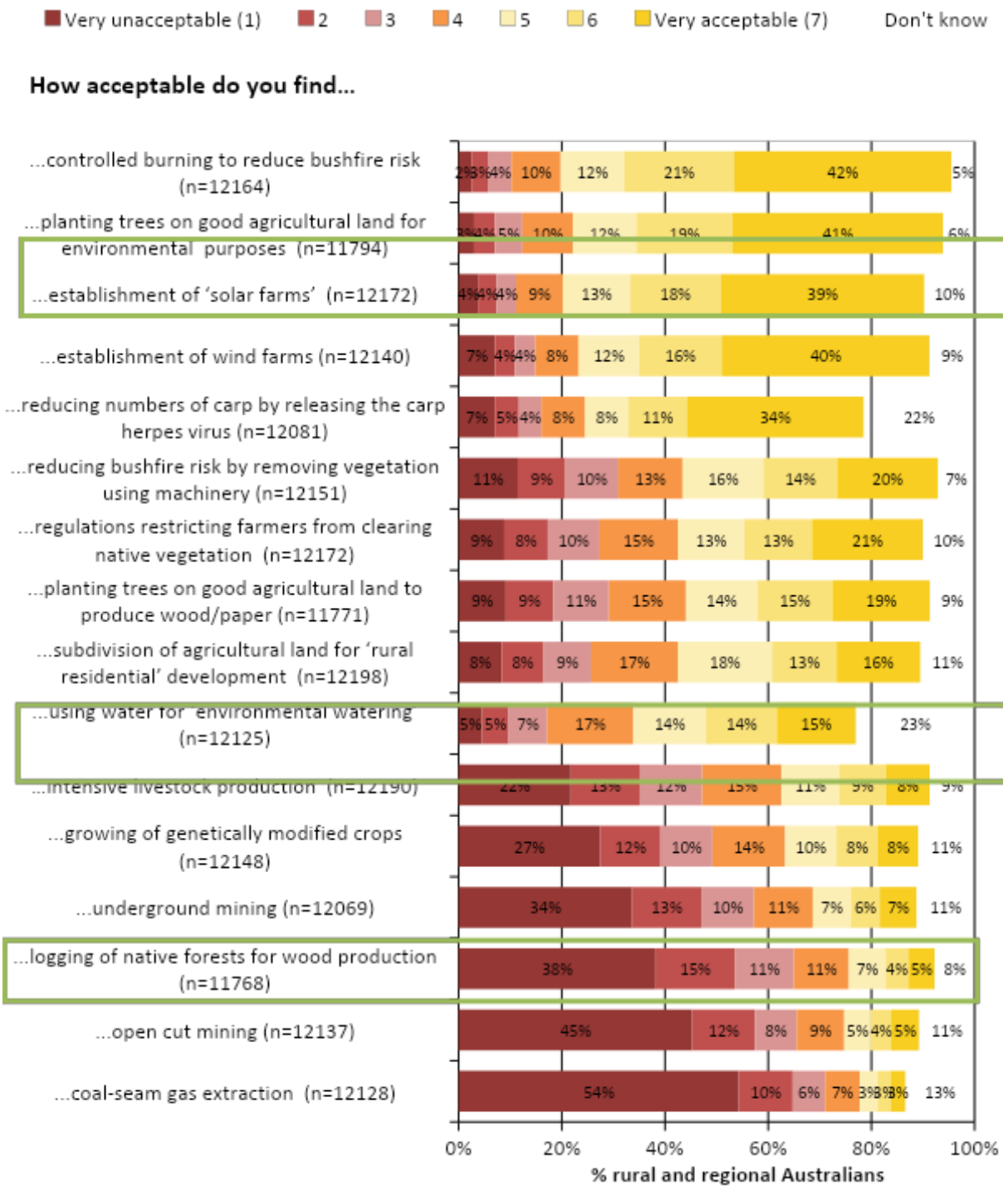

Figure A1 Acceptability of forestry related activities compared to other sometimes controversial activities – rural and regional Australians

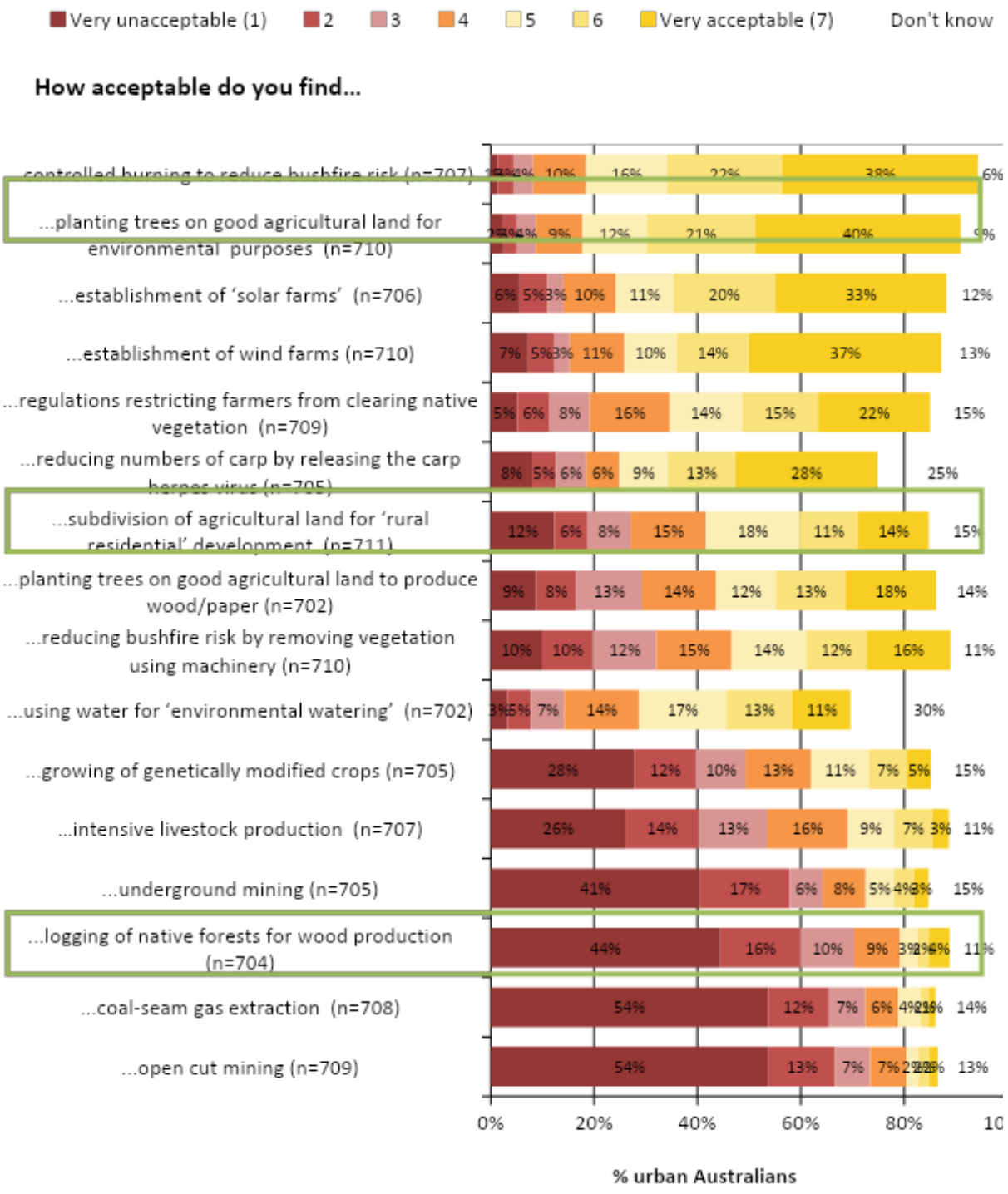

Figure A2 Acceptability of forestry related activities compared to other sometimes controversial activities – urban Australians

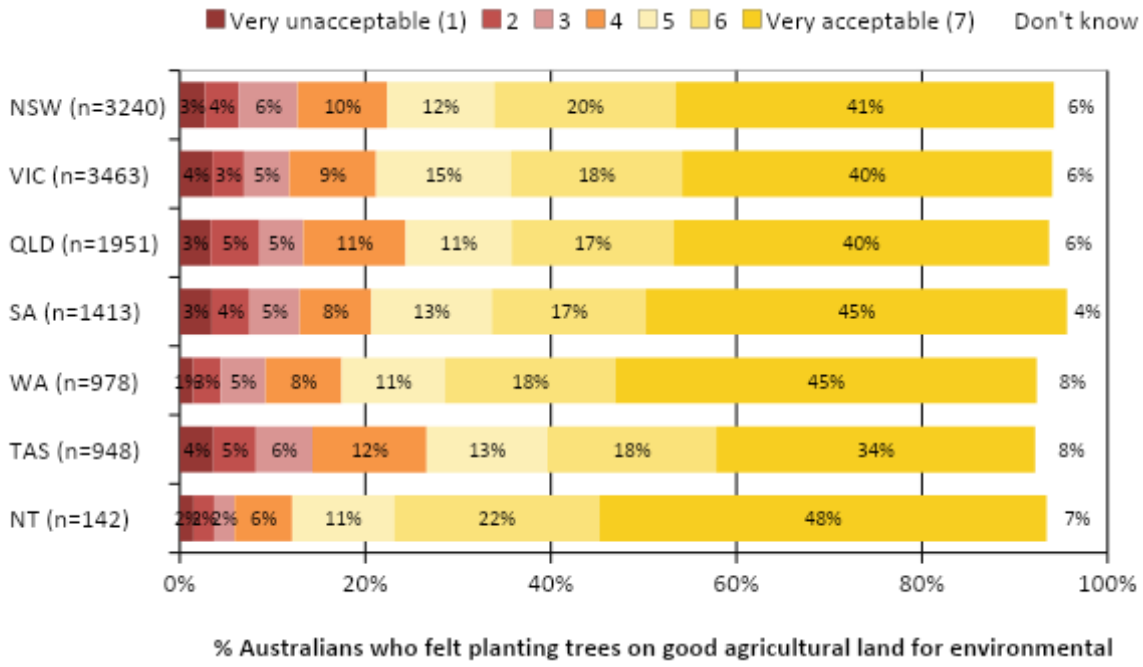

Figure A3 Acceptability of planting trees on good agricultural land for environmental purposes, by state

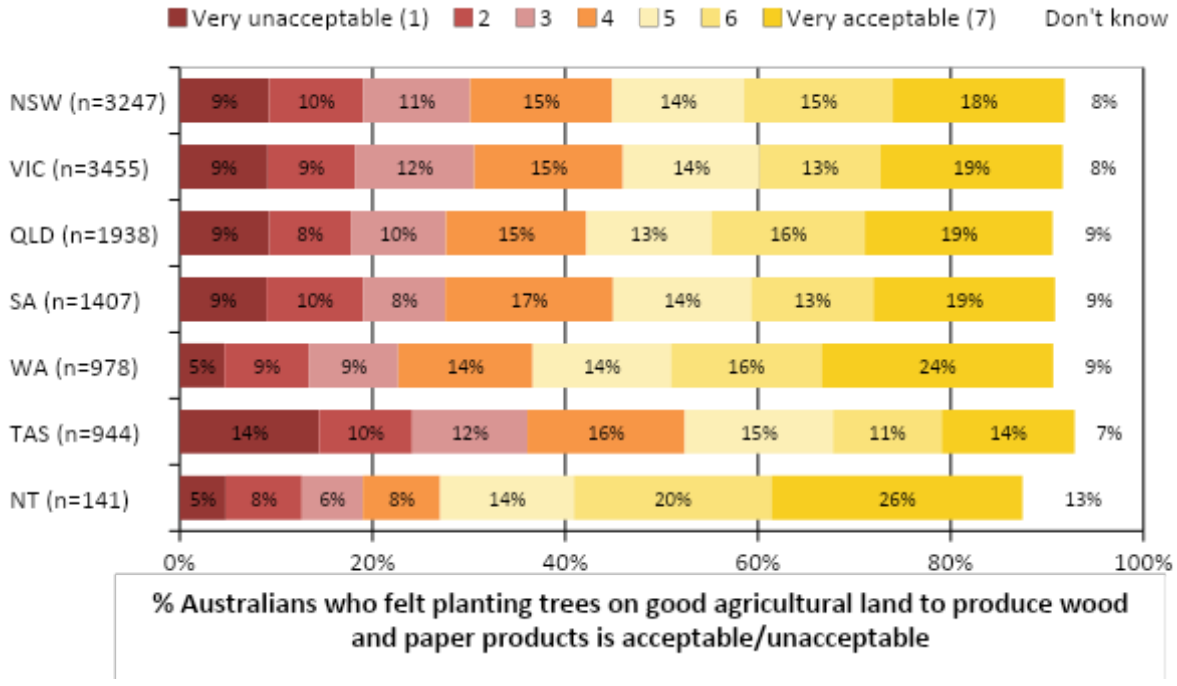

Figure A4 Acceptability of planting trees on good agricultural land to produce wood and paper products, by state

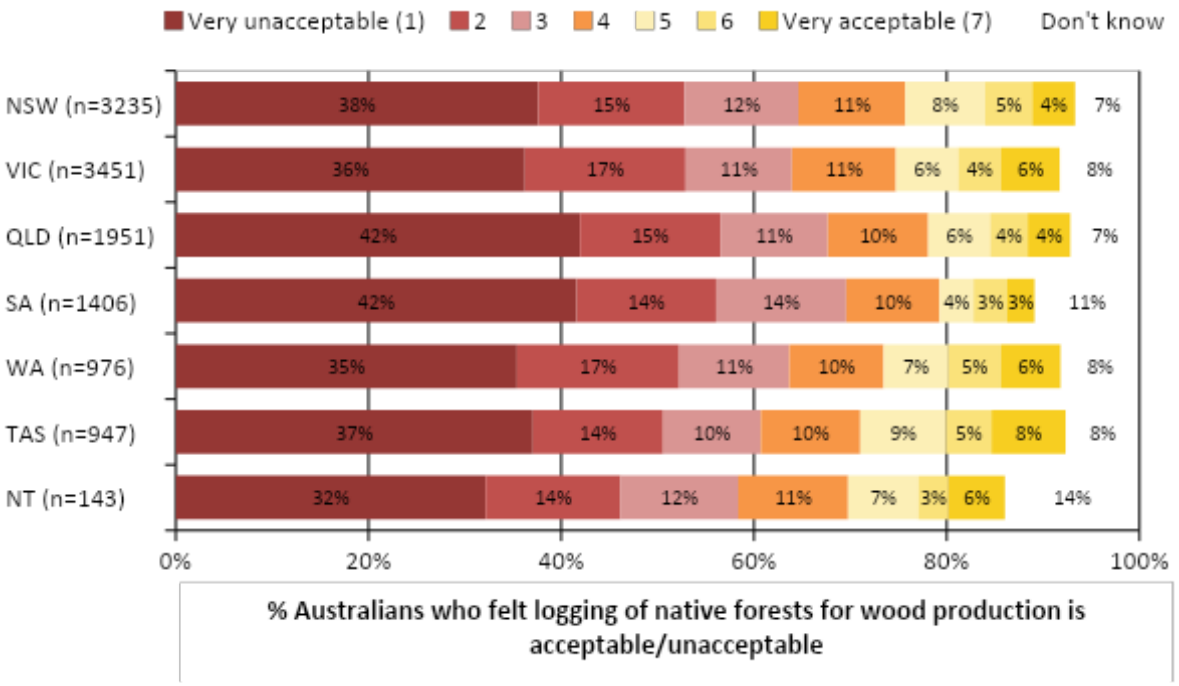

Figure A5 Acceptability of logging of native forests for wood production, by state

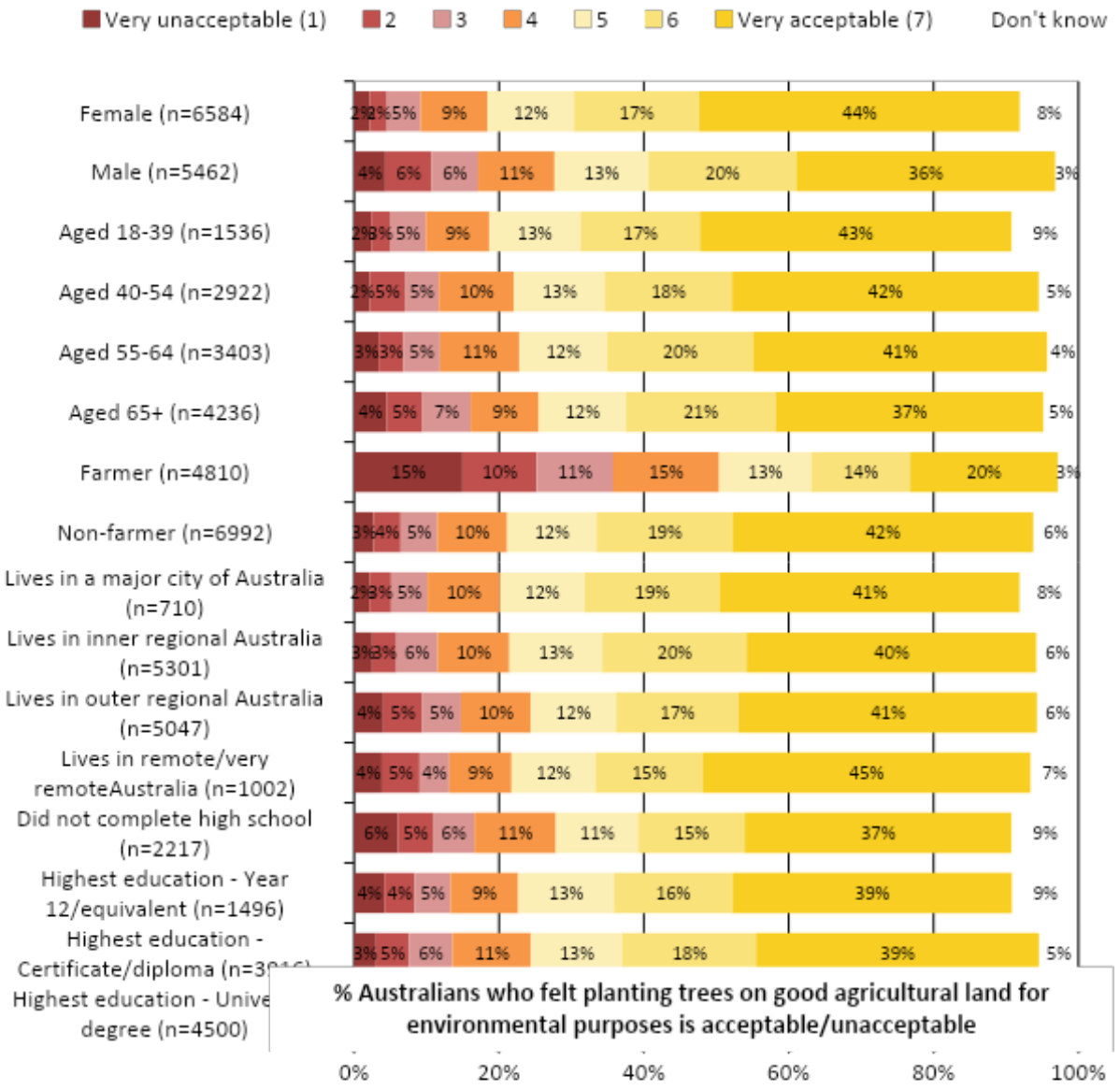

Figure A6 Acceptability of planting trees on good agricultural land for environmental purposes by different socio-demographic groups

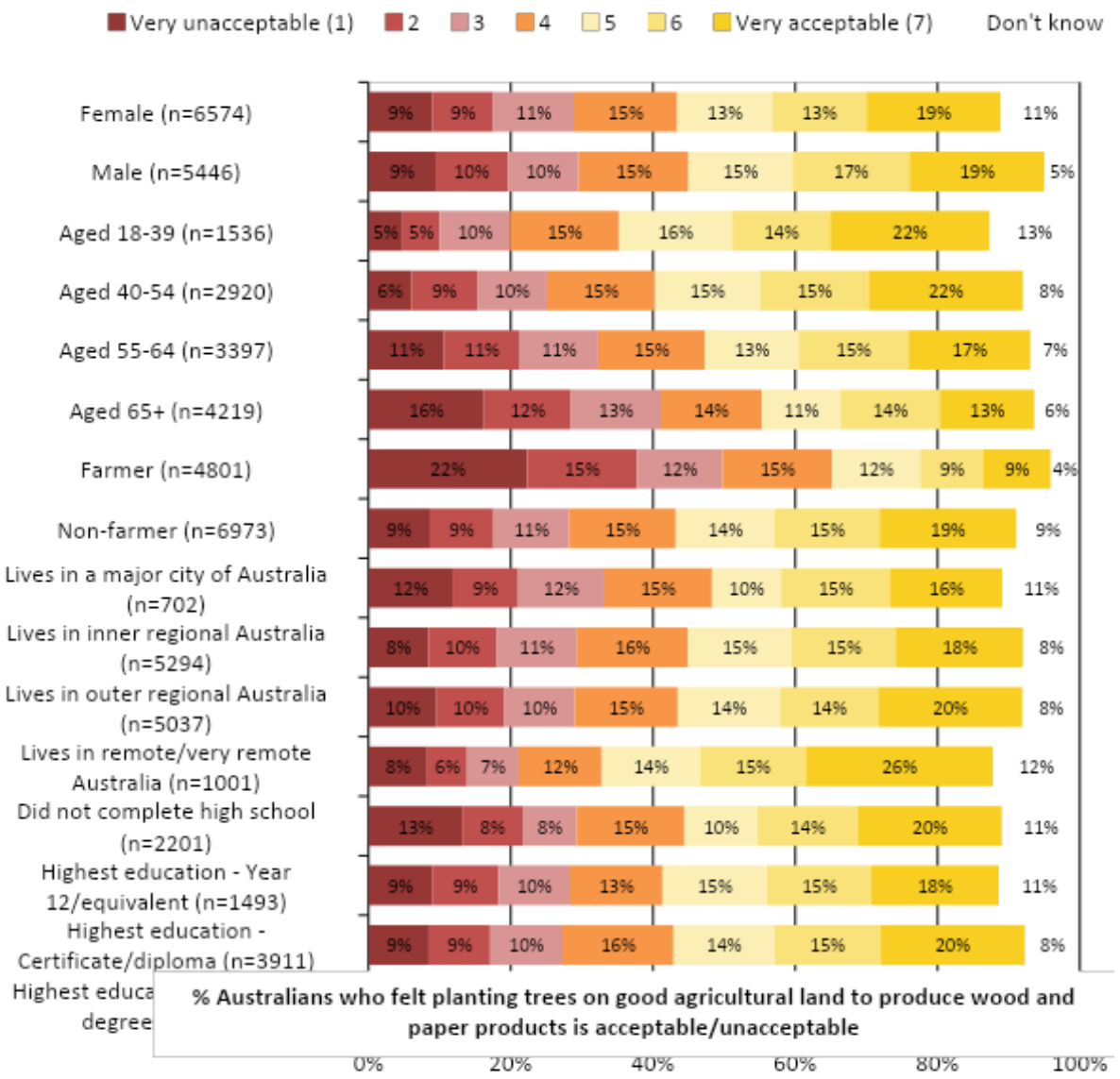

Figure A7 Acceptability of planting trees on good agricultural land to produce wood and paper products by different socio-demographic groups

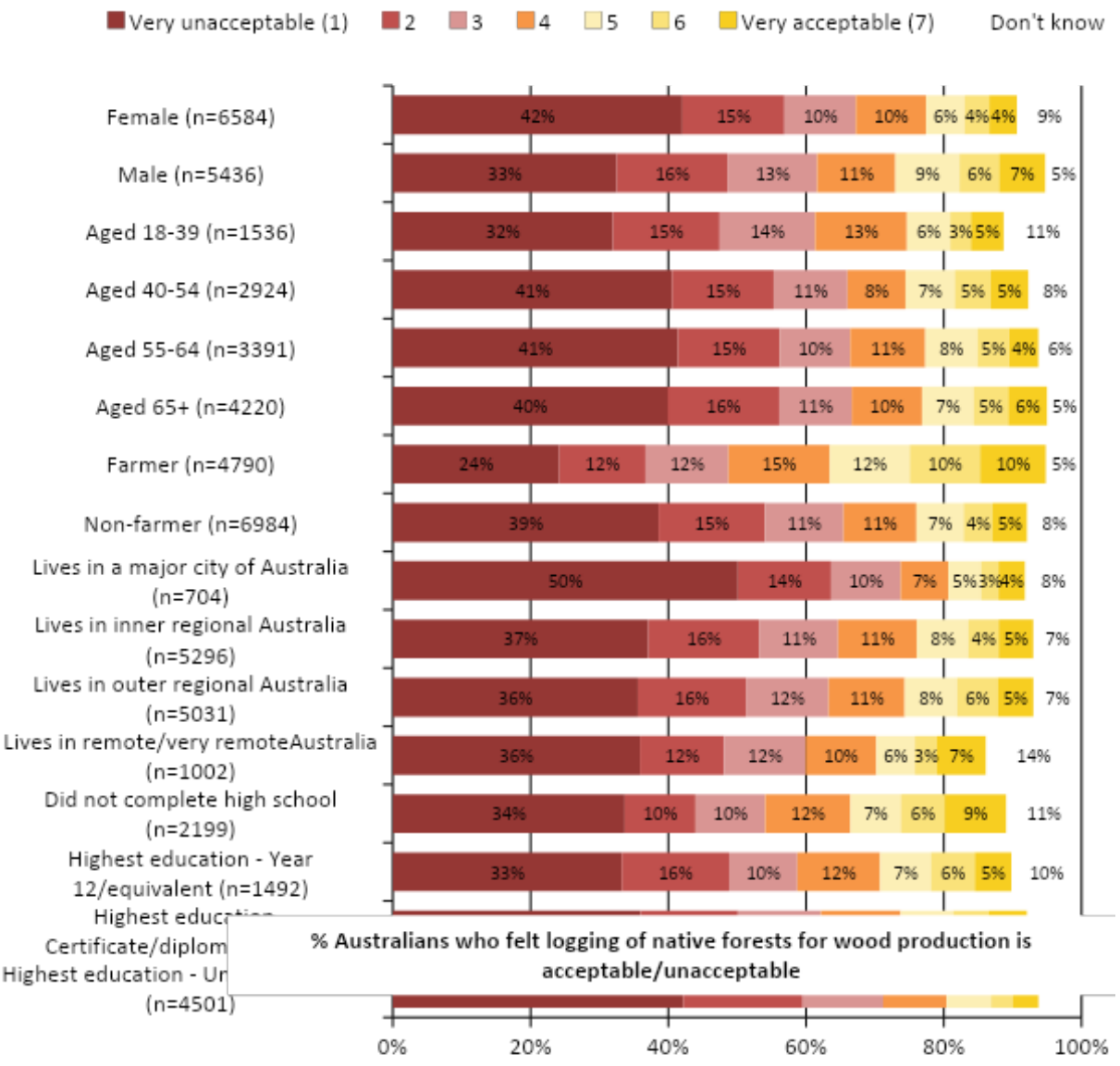

Figure A8 Acceptability of logging of native forests for wood production by different socio-demographic groups

Appendix 2 – Definitions of forestry regions

The report compares views of people living in different regions. The local government areas included in each region are listed in the table below. Each region is also broadly classified based on whether the commercial timber industry in the region is dominated by native forest, softwood plantation, hardwood plantation or a mix of more than one of these.

State	Region	Dominant forest or plantation	LGAs in this region
NSW	South West Slopes	SW Plantation	Albury
			Greater Hume Shire
			Gundagai
			Snowy Valleys
			Wagga Wagga
	Central Tablelands	SW Plantation	Bathurst Regional
			Blayney
			Cabonne
			Lithgow
			Oberon
			Orange
			Upper Lachlan Shire
	North East	Mixed native eucalypt forest / HW plantation	Armidale Regional
			Ballina
			Byron
			Clarence Valley
			Glen Innes Severn
			Kyogle
			Lismore
			Richmond Valley
			Tenterfield
			Tweed
	Mid North Coast	Mixed native eucalypt forest / HW plantation	Bellingen
			Coffs Harbour
			Kempsey
			Mid-Coast
			Nambucca
			Port Macquarie-Hastings
			Walcha
	Hunter & Central Coast	Native eucalypt forest	Central Coast
			Cessnock
			Dungog
			Lake Macquarie
			Maitland
			Muswellbrook
			Newcastle
			Port Stephens
			Singleton
			Upper Hunter Shire
	South Coast & Southern Inland	Mixed native eucalypt forest / SW plantations	Bega Valley
			Eurobodalla
			Kiama
			Shellharbour

			Shoalhaven
			Snowy Monaro Regional
			Wingecarribee
			Wollondilly
			Wollongong
	Cypress	Native cypress forest	Bland
			Cowra
			Forbes
			Gilgandra
			Gunnedah
			Inverell
			Lachlan
			Narrabri
			Narromine
			Parkes
			Tamworth Regional
			Warrumbungle Shire
			Western Plains Regional
	River Red Gum	Native eucalypt forest	Balranald
			Berrigan
			Edward River
			Federation
			Griffith
			Hay
			Murray River
			Narrandera
			Wentworth
VIC	Green Triangle	SW & HW Plantation	Glenelg
			Horsham
			Moyne
			Southern Grampians
			Warrnambool
			West Wimmera
	Western	SW Plantation	Ararat
			Ballarat
			Central Goldfields
			Colac-Otway
			Corangamite
			Golden Plains
			Greater Bendigo
			Greater Geelong
			Hepburn
			Macedon Ranges
			Moorabool
			Mount Alexander
			Northern Grampians
			Pyrenees
			Queenscliffe
			Surf Coast
	North Central	Mixed SW plantation / native eucalypt plantation	Alpine
			Benalla
			Campaspe
			Gannawarra

			Greater Shepparton
			Indigo
			Mildura
			Moira
			Strathbogie
			Swan Hill
			Towong
			Wangaratta
			Wodonga
			Yarriambiack
	Central Highlands & Gippsland	Mixed native eucalypt forest / HW plantation	Bass Coast
			Baw Baw
			East Gippsland
			Latrobe
			Mansfield
			Mitchell
			Mornington Peninsula
			Murrindindi
			Nillumbik
			South Gippsland
			Wellington
			Yarra Ranges
QLD	Wide Bay Burnett Region	Mixed SW, HW & Araucaria plantation / native eucalypt forest	Bundaberg
			Fraser Coast
			Gympie
			North Burnett
			South Burnett
	Central Region	Mixed native eucalypt forest / SW, HW & Araucaria plantation	Banana Shire
			Central Highlands
			Gladstone
			Livingstone Shire
			Mackay Regional
			Rockhampton
			Whitsunday
	North Region	Mixed native eucalypt forest / SW & Araucaria plantation	Cairns Region
			Cassowary Coast
			Charters Towers
			Cook Shire
			Mareeba Shire
			Tablelands
			Townsville City
	Southern Region	Native cypress forest	Goondiwindi
			Maranoa
			Southern Downs
			Toowoomba
			Western Downs
	South East Region	Native eucalypt forest	Brisbane City
			Gold Coast City
			Ipswich City
			Lockyer Valley
			Logan City
			Moreton Bay
			Noosa Shire

			Redland City
			Scenic Rim
			Somerset
			Sunshine Coast
SA	Green Triangle	SW & HW Plantation	Grant
			Kangaroo Island
			Mount Gambier
			Naracoorte and Lucindale
			Tatiara
			Wattle Range
WA	Great Southern & Esperance	HW Plantation	Albany
			Cranbrook
			Denmark
			Esperance
			Jerramungup
			Kojonup
			Plantagenet
	South West WA	Mixed native eucalypt forest / SW & HW plantation	Augusta-Margaret River
			Boyup Brook
			Bridgetown-Greenbushes
			Bunbury
			Busselton
			Capel
			Collie
			Dardanup
			Donnybrook-Balingup
			Harvey
			Mandurah
			Manjimup
			Murray
			Nannup
TAS	Cradle Coast	Mixed native eucalypt forest / SW & HW plantation	Burnie
			Central Coast
			Circular Head
			Devonport
			Kentish
			King Island
			Latrobe
			Waratah/Wynyard
			West Tamar
	Northern	Mixed native eucalypt forest / SW & HW plantation	Break O'Day
			Dorset
			Flinders
			George Town
			Launceston
			Meander Valley
			Northern Midlands
	Southern	Mixed native eucalypt forest / SW plantation	Brighton
			Central Highlands
			Clarence
			Derwent Valley
			Glamorgan/Spring Bay
			Glenorchy

	Hobart
	Huon Valley
	Kingborough
	Sorell
	Southern Midlands
	Tasman

Appendix 3 – Perceptions of neighbours by different types of rural landholder

		Good at controlling pest/feral animals		Good at managing weeds		Good at reducing bushfire risk		Take good care of their land		Take good care of water quality		Take go of bou fences
Socio-demographic characteristics	n	agree	dis-agree	agree	dis-agree	agree	dis-agree	agree	dis-agree	agree	dis-agree	agree
Neighbours a timber plantation/has area of land leased to a plantation company												
NSW	56	18%	70%	13%	71%	21%	68%	25%	57%	23%	45%	13%
VIC and SA	100	32%	53%	36%	49%	38%	44%	42%	35%	34%	30%	36%
QLD	Not enough responses to report this category											
WA	38	15%	56%	28%	54%	26%	53%	31%	44%	28%	28%	23%
TAS	59	24%	64%	17%	64%	22%	66%	37%	42%	32%	39%	25%
Female	134	21%	63%	23%	54%	25%	57%	36%	44%	23%	36%	29%
Male	127	31%	54%	30%	59%	34%	52%	37%	41%	39%	33%	26%
Under 45 years	43	26%	58%	23%	49%	26%	51%	40%	35%	24%	31%	30%
45-64 years	159	23%	63%	24%	61%	28%	58%	33%	46%	28%	38%	26%
65+ years	59	37%	47%	32%	53%	34%	51%	42%	41%	42%	31%	27%
Farmer	198	23%	66%	22%	64%	25%	61%	32%	48%	31%	40%	24%
Not a farmer	58	36%	38%	40%	34%	43%	38%	48%	26%	28%	19%	40%
High school equivalent or lower	63	33%	55%	33%	50%	36%	48%	33%	43%	27%	38%	33%
Certificate or diploma	88	23%	64%	23%	61%	26%	61%	38%	47%	39%	38%	26%
University degree	109	25%	56%	25%	56%	28%	53%	36%	39%	26%	31%	25%
Neighbours a native forest that is sometimes logged												
NSW	42	19%	58%	16%	67%	40%	47%	28%	44%	29%	43%	21%
VIC and SA	42	17%	60%	21%	60%	33%	45%	17%	64%	25%	53%	17%
QLD	Not enough responses to report this category											
WA	Not enough responses to report this category											
TAS	Not enough responses to report this category											
Female	76	21%	51%	21%	53%	39%	40%	31%	47%	25%	41%	21%
Male	82	28%	63%	24%	67%	39%	51%	27%	51%	32%	43%	21%
Under 45 years	Not enough responses to report this category											
45-64 years	89	16%	64%	16%	63%	30%	52%	22%	51%	17%	52%	17%
65+ years	58	36%	51%	31%	61%	53%	39%	37%	47%	40%	31%	29%
Farmer	101	25%	62%	25%	59%	41%	46%	28%	49%	31%	43%	20%
Not a farmer	50	24%	48%	18%	62%	36%	44%	32%	46%	22%	39%	26%
High school equivalent or lower	31	39%	42%	31%	44%	63%	31%	38%	44%	42%	35%	26%
Certificate or diploma	48	12%	69%	12%	69%	27%	55%	23%	60%	19%	58%	18%
University degree	79	26%	55%	25%	61%	38%	46%	29%	44%	29%	35%	21%
Neighbours a National Park												
NSW	118	35%	49%	26%	56%	32%	53%	37%	40%	46%	25%	20%
VIC and SA	135	28%	56%	26%	58%	33%	49%	38%	38%	39%	22%	25%
QLD	61	23%	64%	16%	70%	25%	58%	35%	45%	29%	30%	21%
WA	42	24%	60%	19%	65%	33%	56%	42%	35%	40%	21%	10%
TAS	Not enough responses to report this category											

Female	216	28%	53%	23%	58%	31%	51%	40%	35%	35%	22%	25%
Male	175	30%	56%	24%	61%	30%	53%	36%	45%	45%	29%	18%
Under 45 years	81	30%	47%	25%	46%	33%	47%	44%	32%	46%	15%	31%
45-64 years	203	28%	57%	22%	63%	27%	54%	36%	40%	37%	28%	18%
65+ years	105	31%	54%	26%	61%	35%	51%	37%	44%	39%	27%	24%
Farmer	257	25%	64%	18%	68%	23%	64%	29%	48%	36%	31%	15%
Not a farmer	124	38%	35%	35%	40%	44%	28%	55%	23%	46%	15%	36%
High school equivalent or lower	98	30%	54%	23%	63%	26%	61%	29%	49%	35%	28%	18%
Certificate or diploma	122	27%	55%	20%	59%	26%	54%	34%	46%	38%	32%	20%
University degree	168	30%	54%	27%	57%	36%	45%	46%	30%	43%	18%	26%

Measured on a scale of 1 to 7, from strongly disagree (1) to strongly agree (7). A don't know option was also provided.
In this table, a score of 5, 6 or 7 is reported as 'agree' and a score of 1, 2 or 3 is reported as 'disagree'. Responses of 'don't know' a proportion of respondents not presented in the table selected 4 (neither agree or disagree).