Title

Understanding patterns of information sourcing and motivations to collaborate among absentee landholders: a case study of the Central Tablelands, NSW

Author names and affiliations

Hermann Kam[1]

Graciela Metternicht[1]

Alex Baumber[2]

Rebecca Cross[3]

[1] *School of Biological, Earth and Environmental Sciences, PANGEA Research Centre, UNSW Sydney, Australia*

[2]*Faculty of Transdisciplinary Innovation, University of Technology Sydney, Australia*

[3]*School of Life and Environmental Sciences and School of Geoscience, University of Sydney, Australia*

Corresponding author

Hermann Kam

email address: hermann.kam@student.unsw.edu.au

postal address: School of BEES
The University of New South Wales
UNSW Sydney, NSW 2052
Australia

Declaration of interest: None

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Understanding patterns of information sourcing and motivations to collaborate among absentee landholders: a case study of the Central Tablelands, NSW

Hermann Kam, Graciela Metternicht, Alex Baumber, Rebecca Cross

ABSTRACT: The population of absentee landholders, in rural areas of Australia and worldwide, has risen over recent decades, underpinning the need to better understand how to effectively engage this stakeholder group, especially from natural resource management (NRM) agencies. Prior research argues that these often difficult-to-reach rural actors play an important role in environmental management, biodiversity conservation and cross property collaborations. Therefore, this paper investigates the ways in which absentee landholders access information on land management practices, the extent of their engagement with government NRM agencies, and the potential for absentee landholders to engage in cross-property collaboration.

Focusing on a case study in the Central Tablelands of New South Wales, Australia, the results indicate that absentee landholders in the case study region access a range of government and personal sources for information, with Local Land Services (a regional NRM agency) and neighbours being the two most commonly used sources amongst survey respondents. Reasons why Local Land Services is commonly used include the awareness that absentee landholders have of this source of information and the confidence they have in it. As for collaborations, most absentee landholders expressed a preference for non-commercial collaborations related to conservation and amenity, as opposed to production-related or other commercial activities. Motivations to collaborate included knowledge-sharing and a collective effort to manage cross-property conservation issues. Hence, it is recommended that NRM agencies recognize the role they can play in adaptive co-management by providing information to absentee landholders, facilitating collaborations around knowledge-sharing and conservation, and continuously adapting their outreach to accommodate for the growing heterogeneity in values and interests.

KEYWORDS: Absentee landholder; Natural Resource Management; Information Sourcing; Social learning; Cross-property collaboration; Central Tablelands

1. Introduction

The rise of absentee landownership is a worldwide phenomenon, and recent research (Petrzelka, 2012; Ulrich-Schad et al., 2016) points towards the need for natural resource management (NRM) agencies to engage with this increasingly important stakeholder group. Defining who these actors are is crucial given the growing segmentation and typologies of landownership (Emtage et al., 2007). In the context of this research absentee landholders are people who own, or otherwise hold, land but live remotely from it, and often (but not always) owning rural land for reasons of amenity, recreation or conservation rather than rather than the production and profit-oriented goals of more-established landholders (Morrison et al., 2015).

Absentee landholders' motivations for holding land (i.e. owning it or leasing it), their differing goals, along with divergent levels of knowledge in land management practices (Petrzelka et al., 2013) can alter the mix of ecosystem services provided by private land in regions with increasing numbers of absentee landholders (Kam et al., 2019). A rise in absenteeism can also

pose challenges for the NRM agencies[1] who seek to manage natural resources across properties and for other landholders seeking to collaborate on conservation and production initiatives, including in the case study region for this research, the Central Tablelands region of New South Wales (NSW), Australia (Baumber et al., 2018b).

It has been noted that people management and effective communication with stakeholders are just as important as the understanding of biophysical and economic factors that govern a landscape (Emtage and Herbohn, 2012). However, research so far to understand absentee landholders and their communication patterns and behaviours have been limited, and this comes in light of the fact that our limited knowledge or understanding of biology and ecological processes are not the reasons for decline in biodiversity; rather it is the lack of understanding of people and the choices they make (Moon et al., 2012). While interactions between absentee landholders and NRM agencies, such as direct contact or engaging with absentees to participate in conservation/NRM programs, are becoming increasingly important (Petrzelka, 2012), the limited research to date has focused on the attitude of absentee landholders towards land management and the way they source information to that end (Petrzelka and Armstrong, 2015). Behavioural aspects such as how absentee landholders learn about land management, and the effectiveness of different strategies for disseminating information and advice to them, are factors identified as significant for their engagement in NRM and are factors in which research into is lacking (Ikutegbe at al., 2015).

A better insight into the communication behaviours of absentee landholders will allow for improved engagement with natural resource management agencies, which would lead to, amongst other benefits, timely delivery of crucial information, enhance cross property conservation initiatives and lower risk of environmental degradation; with the latter especially crucial when considering the fact that prior studies have shown certain places with high ecological importance are concentrated with *difficult-to-reach* landholders (Morrison et al., 2015). Furthermore, while absentee landholders tend to be excluded from rural social research, they have the potential to contribute significantly to the delivery of ecosystem services in regions where they own large portions of land (Kam et al., 2019).

[1] In Australia, Natural Resource Management (NRM) agencies are regionalised to tailor and embed NRM governance to landscape specific needs, and may have a mixture of responsibilities including implementing regulations, land use planning and extension and communication, including for issues relating to native vegetation, soil health, water quality and supply, agriculture and other forms of primary production. However, during the last 20 years, ongoing disinvestment in on-ground extension delivery, increased delivery of private sector extension and increased reliance on landholders to self-organise and seek specific advice, has impacted on and limited engagement (Ampt et al. 2015).

Building on previous research into absentee landholders, including engagement strategies and social learning, a case study of the Central Tablelands of New South Wales (NSW) was selected, with the aims of enhancing understanding and advancing knowledge on: A) the ways in which absentee landholders in the NSW Central Tablelands access information regarding land management practices and the extent of their engagement with government NRM agencies; B) absentee landholder engagement strategies; C) the potential for these absentee landowners to engage in cross-property collaborations involving neighbouring landholders, NRM agencies and other stakeholders.

The remainder of section 1 provides an overview of the current knowledge on absentee landholders with regards to communication and information sourcing behaviours and engagement with NRM agencies. Section 2 establishes the methodology, and section 3 presents the findings of the research. Section 4 discusses the research results and their implications on cross-property collaborations, provides recommendations on how to improve such collaborations for the future and how our findings could be used by NRM agencies to provide information and facilitate collaboration. Section 5 presents the paper's conclusions.

1.1 The consequences of a lack of engagement with absentee landholders

NRM agencies are often a crucial source of locally tailored information for landholders. Where there is a lack of contact between these two parties, consequences can include absentee landholders having insufficient access to scientific and practical land management knowledge (Petrzelka et al., 2013), misinformation or poorly-timed information exchanges (Buman, 2007), and/or reliance on faulty knowledge or poor advice (Redmond et al., 2004). These can increase the risk of improper adoption of NRM strategies and translate into higher levels of environmental degradation (Morrison et al., 2015); which often extend beyond individual property boundaries and impact at the landscape and regional scale (Meadows et al., 2013). Furthermore, interactions between NRM agencies and absentee landholders can also have implications for surrounding landholders, including opportunities for cross-property collaboration and landscape-scale conservation (Baumber et al., 2018a). As ecological boundaries rarely abide by human-imposed boundaries (Meadows et al., 2013) and global environmental targets cannot be met with publicly-governed protected areas alone (Bond et al., 2018), private landholders have an important role to play in the conservation of biodiversity and the provision of ecosystem services (Rickenbach et al., 2011).

1.2 Reasons for lack of engagement

Difficulties for NRM agencies in accessing absentee landholders, in comparison to other landholder types, is a frequently mentioned barrier to engagement (Morrison et al., 2015). Additionally, prior research shows that absentee landowners do not utilize traditional sources of information, such as local social networks, to the same extent as resident landholders (Petrzelka and Armstrong, 2015). Moreover, it appears they have less contact with NRM officers, and are less likely to engage with and participate in NRM agency programs (Petrzelka, 2012). Distance is a reason often cited for absentee landholders' lower levels of engagement with local initiatives and with 'traditional' sources of information on land management, such as those provided by NRM agencies. This is because landholders who live further away from their land are more likely to be isolated from local social networks and less aware of the information sources that are available to them (Petrzelka and Armstrong, 2015).

However, this is a two-way issue: apart from distance, a lack of knowledge amongst NRM agencies about effective engagement strategies may also contribute to lower engagement levels amongst non-traditional landholders. Despite the importance of engagement between NRM agencies and absentee landholders, a knowledge gap exists around the most effective strategies for achieving this engagement. Reviewing 22 Australian NRM organizations, Morrison et al. (2015) found that agency staff were often unsure of the most effective communication channel to connect with difficult-to-reach landholders, such as absentee landholders. Furthermore, NRM organizations interviewed generally did not target difficult-to-reach landholders with tailored communication programs, nor did they evaluate the effectiveness of their communications programs in reaching such landholders. A similar situation is reported by Petrzelka et al. (2009) in the USA, where her research evidenced low participation in conservation programs amongst absentee landholders, despite the high interest in conservation. Once again, this was attributed to poor communication between absentee landholders and NRM agencies, and cited as a reason for the ongoing gap between interest in conservation and action on conservation; this is an important intervention point for NRM agencies seeking to enhance engagement with this stakeholder group.

The important thing to note is just because information is published or potentially available does not mean it will receive the attention of a landholder (Emtage and Herbohn, 2012). This is due to the differences in objectives landholders have, thus the ways in which they wish to

receive informational materials differ as well (Kuipers et al., 2013). Hence, the medium used to present the information and the motivation of landholders to gather information are factors additional to information availability; more to the point, motivation can be influenced by landholder perceptions of the magnitude of the problem and their appraisal of credibility of the information source.

1.3 Opportunities and benefits of increased engagement with absentee landholders

Research into landholders' motivations for owning land, including their priorities, attitudes towards various conservation initiatives and their past experiences in working with organizations involved in NRM can inform the development of effective engagement strategies (Moon et al., 2012). For instance, tailored outreach programs and workshops have helped to identify priorities and values of landholders (Finley and Kittredge, 2006), enabling the formulation of educational programs focused on values, rather than the more common approach of focusing workshops on the development of management plans. Similarly, Redmon et. al (2004) held programs and workshops that were more appropriate to absentee landholders. These workshops included information regarding basic resource management, along with other important information such as land-grant university system, and the knowledge and expertise that it provided. As a result, these tailored workshops have become popular with urban-absentee landholders; with Redmon et. al (2004) stressing the importance of continued improvements to keep up with the interests of absentee landholders and to provide them with a "rewarding experience". Additionally, prior research on tailoring programs to landholder values have also found that recreationalist or conservationist landholders value information and advisory services that can instruct on issues such as land restoration or biodiversity conservation (Blanco et al., 2015).

It has been argued (Kuipers et al., 2013; Emtage et al., 2007) that the tailoring of specific programs and workshops to particular groups of landholders can be done by grouping similar types of landholders on the basis of common characteristics, interests or needs and then profile them using a communication strategy that fits their learning preferences. Furthermore, Meadows et al. (2014) points out that for increasing NRM engagement with landholders, the design and promotion of support programmes should be a collaborative enterprise of government agencies, traditional support providers, locally based independent NRM professionals and special interest groups (such as botany). In this regard, Blackmore (2013)

found that landholders were more likely to participate in future conservation programs if they had strong, respectful and continuous relationships with the implementing agency (preferably through face to face contact); and were willing to accept risks associated with participation in a conservation program if they trusted the program administrator, and exchanged sufficient knowledge of the program with the administrator and have confidence in the program (Moon et al., 2012). All of the aforementioned has also been cited as serving to increase landholder's sense of inclusiveness and reduce negative perceptions and trust issues of landholders towards government and other support providers (Blackmore, 2013).

Apart from the potential benefits for absentee landholders, from accessing NRM agency information, enhanced communication between the two parties can also build mutually beneficial relationships of "social learning" based around understanding and partnership. Armitage et al. (2008) describe social learning as a process of iterative reflection that occurs in groups through the sharing of experiences, ideas and environments. Social learning is a key component of "co-management", which involves collaborative management of NRM issues between different stakeholder groups (Berkes, 2009). A case in point is the South African case study of Selinske et al. (2015) which found that while attachment to land, and value placed on conservation were drivers of landholders' participation in NRM programs, social learning actually had a stronger influence on landholders' level of satisfaction with NRM programs. Furthermore, adaptive co-management, enable multiple participants learning and collectively refining future actions together (Armitage et al., 2007); and such co-management can also extend to neighbouring landholders and other stakeholders who bring together multiple knowledge types in a transdisciplinary process of cross-property management (Baumber et al., 2018b).

2. Methodology

2.1 Study area characterization

The Central Tablelands are situated in central NSW, Australia, and this region spans around 31,365 km^2 in area and includes the major cities of Bathurst, Orange, Lithgow, Mudgee and Cowra (Figure 1). Bathurst and Orange in particular are key service centres, accounting for about 44% of the Central West region's population (RDA, 2013-2016). The region of the Central Tablelands has a population of more than 150,000 residents, with 7% of the population employed in agriculture, fisheries and forestry; providing 10% of NSW's agriculture business

and more than 3% of the state's agricultural land (Local Land Services Central Tablelands, n.d.). Additionally, the Central Tablelands are highly diverse agriculturally, making natural resource management issues more complex and complicated. Amongst the most significant land uses are grazing of sheep and cattle, irrigated farming, broad acre crops and horticultural enterprises (Baumber, 2012; Local Land Services Central Tablelands, n.d.).

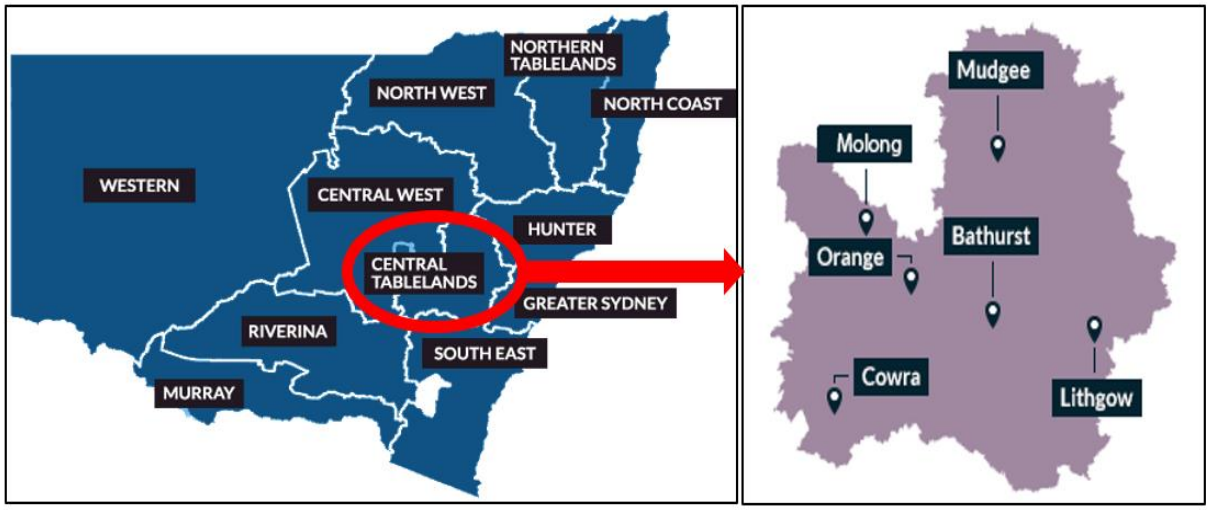

Figure 1. Map of Central Tablelands within the state of NSW.
Source: Central Tableland Local Land Services.

Throughout its history, enterprises related to agriculture have largely dominated the economy of the Central Tablelands, although there is now a shift to a more diverse modern economy which is not only dependent on agriculture, but includes manufacturing, forestry, education, mining and tourism. With this continued development, grassland resources are being increasingly competed for, not only by these aforementioned industries, but also for its amenity value, lifestyle purposes and biodiversity values (Behrendt and Eppleston, 2011). With the growing in-migration of "rural lifestylers", the Central Tablelands have shown strong evidence of "multifunctional rural transition" in recent times. These "rural lifestylers" are people who do not depend on their land for income, and generally live in major towns and near transport routes to Sydney. Additionally, they engage in rural amenity which are dominated by consumption values or have "pluri-activities" consisting of a mix of production and consumption values (Baumber, 2012), such as cattle rearing and amenity.

Central Tablelands Local Land Services (LLS) is one of the key NRM agencies operating in the case study region. It is part of the NSW state government and is one of eleven regional LLS agencies across NSW. Central Tablelands LLS has responsibility for both production and conservation programs in the region, including extension services for agricultural producers,

information and advice on conservation-related activities and the provision of funding for activities that align with strategic objectives.

2.2 Methodological framework

Data Collection

The literature review of this paper was used to design an explanatory mixed method approach (Creswell et al., 2003 p.565-566) to gather data relevant to address the three aims of this paper (Section 1). Quantitative data collection, through the online survey, allowed for a broad perspective on the views of absentee landholder and provided a general insight into those views. This was then complemented by the semi-structured interviews, that were used to get a more in-depth analysis and explanations of the views that absentee landholders gave during the surveys. Because of the highly transient and dynamic nature of this stakeholder group, which makes it difficult to classify what makes an absentee landholder and consequently hampers their identification as a group, there is no way to target a representative sample. Hence, rather than seek a representative sample, the approach of this paper was designed to profile absentee landholders and gather key information on the ways they access information, and their expectations for engagement. Data were analysed and interpreted to determine trends and relationships. The findings from the research were then compared with findings of previous research to develop recommendations and conclusions.

While the focus of this research was on the Central Tablelands (Figure 1), invitations to complete the online survey were sent out to the regions of Sydney and the Central Tablelands through newsletters and Facebook posts by the Central Tablelands LLS, Greater Sydney LLS, and local Landcare groups[2]. The strategy was designed to accommodate for the fact that absentee landholders owning land in the Central Tablelands reside in different parts of NSW, and because a unified database of absentee landholders for the whole of NSW does not exist. Hence, LLS and Landcare were the only viable channels of contact with absentee landholders in NSW, and newsletters and Facebook posts were the best avenues to contact absentees.

The online survey contains 23 questions (see Table SI 1, Supplementary Information) and was prepared using SurveyMonkey (SurveyMonkey Inc.). It was opened on August 2017 for three months. Responses from the survey totalled 89, with 64 of the respondents holding land in the Central Tablelands. Figure 1 SI (Supplementary Information) depicts the main residences of

[2] Local Landcare: A grassroots movement consisting of self-organising volunteers dedicated to the care the land, environment and sustainable management of natural resources. These groups form district, local and regional networks in New South Wales (Landcare 2018).

these respondents. Noteworthy is that some survey respondents skipped certain questions, therefore the sample size for each figure in the Results section varies.

Following on from the survey, 18 of the respondents participated in further interviews. Survey respondents who did not hold rural land in the Central Tablelands or did not indicate they were willing to be interviewed were excluded from the interviewee selection process. The remaining survey respondents were divided into three groups based on postal codes, with interviewees selected proportionately from these three groups to avoid an oversaturation of information from landholders of the same area of the case study region. In order to keep the identities of the interview participants confidential, codes were assigned to each participant according to the postal code group they belonged to (see Table SI 2, Supplementary Information). Group "A" were from various postcodes, while "B" were from postcodes 2795 and "C" were from 2850. In addition to location, interview participants were also selected to ensure that they were representative of the broader surveyed group in terms of the proportion of landholders who managed their land on their own, those using their land for recreation or for income generation, and years of ownership. Selection was also limited by availability of the participants, as some did not respond to the invitation for an interview. Figure 2 SI (Supplementary Information) depicts the location of survey and interview participant's rural property.

These interviews were conducted a month and a half after the release of the survey and were carried out until the end of 2017. These interviews were conducted in-person or over the phone and recorded with the written and verbal consent of the participant. All 14 interview questions were prepared in advanced (during pre-testing) and used for every interview.

Data Analysis

The 18 interviewees all owned a single property, had no tenants or operators, and managed their land on their own. Furthermore, of the 18 participants, 16 owned their land for the purpose of recreation, with the remaining two owning it for investment or income generation. These characteristics (i.e. single property ownership, recreational purpose) were also dominant amongst the broader group of survey respondents. The length of ownership of their property amongst these participants varied, with seven having owned their property for less than 5 years, six having owned it for 6 to 20 years and five having owned it for more than 20 years.

Responses from the semi-structured interviews were coded and analysed using QSR International's NVivo 11 software to identify themes and categories, and to recognize commonalities and differences amongst these themes. In a reflexive exploration of two qualitative data coding techniques, Blair (2015, p.14) states that "there is no clear-cut 'best' option but that the data coding techniques needed to be reflexively-aligned to meet the specific needs of the project". With that in mind, this research applied a thematic approach to coding, using a combination of priori codes (pre-determined) and emergent codes using the software program NVivo.

3. Results

3.1 Information sourcing behaviours

Results from the online survey show that information sources, regarding land management practices, that were accessed by these absentee landholders ranged from government sources such as LLS, to personal sources such as neighbours. When this research compared the commonality of use between government and personal sources (Figure 3, Supplementary Information), it found that government sources were accessed more frequently than personal sources. Individually, LLS was the most widely used source of all, with 87% of the 77 participants selecting this source (Figure 2). Personal sources neighbours and the internet were the second and third widely accessed source, with 52 (68%) and 51 (66%) respondents choosing each respectively. However, the LandSmart App, produced by the LLS in 2016 (slightly over a year prior to this paper's survey) specifically for absentee landholders with information on natural resource and property management, and the nearest Landcare and LLS Office locations, appears to be the least used source. Other sources mentioned by survey participants were advice from contractors, having a background or education in relevant degrees, or reading from relevant books.

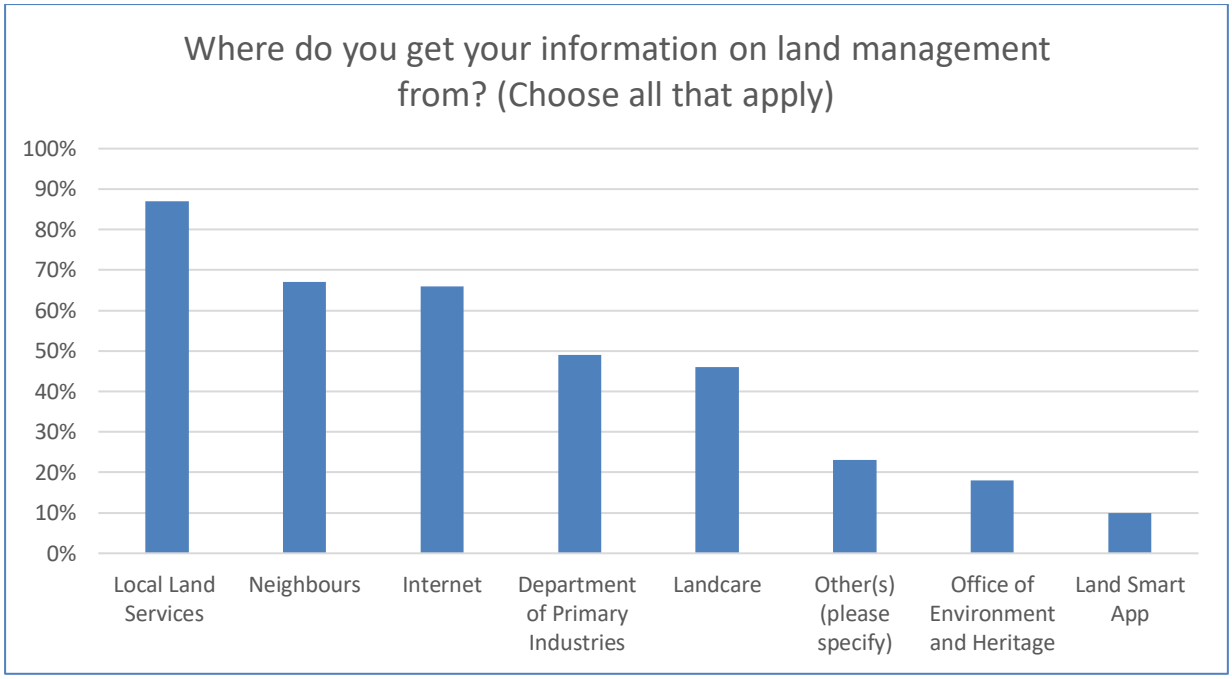

Figure 2. Sources respondents use for information regarding land management practices (n=77)

When asked how useful they found each information source (on a scale of 1 to 5), LLS was rated the most useful, with an average score of 3.96 (Figure 3). This was followed closely by neighbours, which had an average score of 3.65. On the other hand, the LandSmart app had the lowest average rating at 2.82. Respondents selecting the "I don't use this" response to this question were excluded from the calculation of averages.

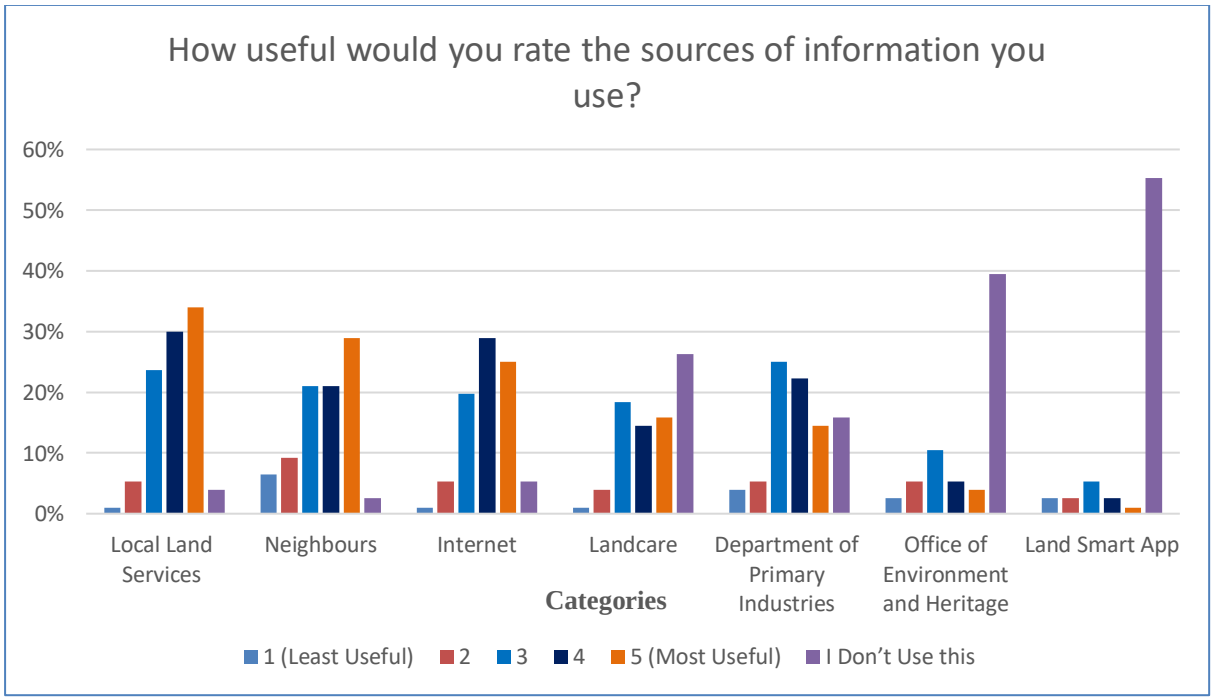

Figure 3. How survey participants rated information sources in terms of usefulness (n=76)

Several interview participants pointed out that rather than one source, a combination of several sources was most useful to them:

> I don't know that there's any one, I think a combination of things, and you go to different places for different advice. **C1**

> It's just a combination and also from experience, so you might chat the person you buy your agricultural supplies from and that person …has [a] good farm and then I'll ask him…**A11**

> I think it's been a mix really, so a bit of a personal experience with other landholders. Also, advice from neighbours, local land services and just trial and error. **B4**

While government information sources were widely used and highly rated (especially LLS), participants also voiced concerns around the need for government agencies to improve their information provision and their overall engagement with absentee landholders. One landholder commented on staff turnover being an issue:

> …the thing that's really critical for these people is that you get some stability because the equivalent to the LLS guy from Lithgow, that position when I first moved up changed almost every year because they kept people on one year contracts… so they didn't really get to know the area because they're only there for nine months and you only meet people that you know three times in that time **A10**

The following landholder discussed the lack of communication and relevance of information available from government agencies:

> Contacted [local LLS], they tell me that they do a lot for absentee landholders, for information. But I don't think that that's really the case…I don't find that there's a lot of communication for absentee landholders in terms of land management... There are a lot of courses on offer…but not many of them are really relevant to me. And I think as an absentee landholder you need a level of education even if what was just one sort of meeting a year where you talk about some really basic stuff… Those sort of really fundamental information sessions…would be really helpful. **C10**

While this landholder explained the need for not only information, but also on-ground action and intervention from government agencies:

> The one I think we are least effective in, is in feral animal management, particularly with rabbits. And the government used to provide a service where they actually came out and help you eradicate them. Now they provide advice, but no eradication. For people like me, who are absentee landholders, and don't have necessarily extensive network locally, there are challenges in dealing with things like feral animals. So, I certainly would like

more government intervention and more involvement, like in the past…**C1**

3.2 Connectedness to community

To understand the role that NRM agencies and other stakeholders play in connecting absentee landholders to their community, survey respondents were asked about six statements relating to community connectedness (Figure 4). Of these factors, knowing one's neighbours, was the most frequently cited by survey respondents (74%). This was followed by attending local community events (53%) and attending workshops and seminars (40%). Having family and friends living in that location was selected by 24% of respondents and less than 3% indicated they had grown up in the area.

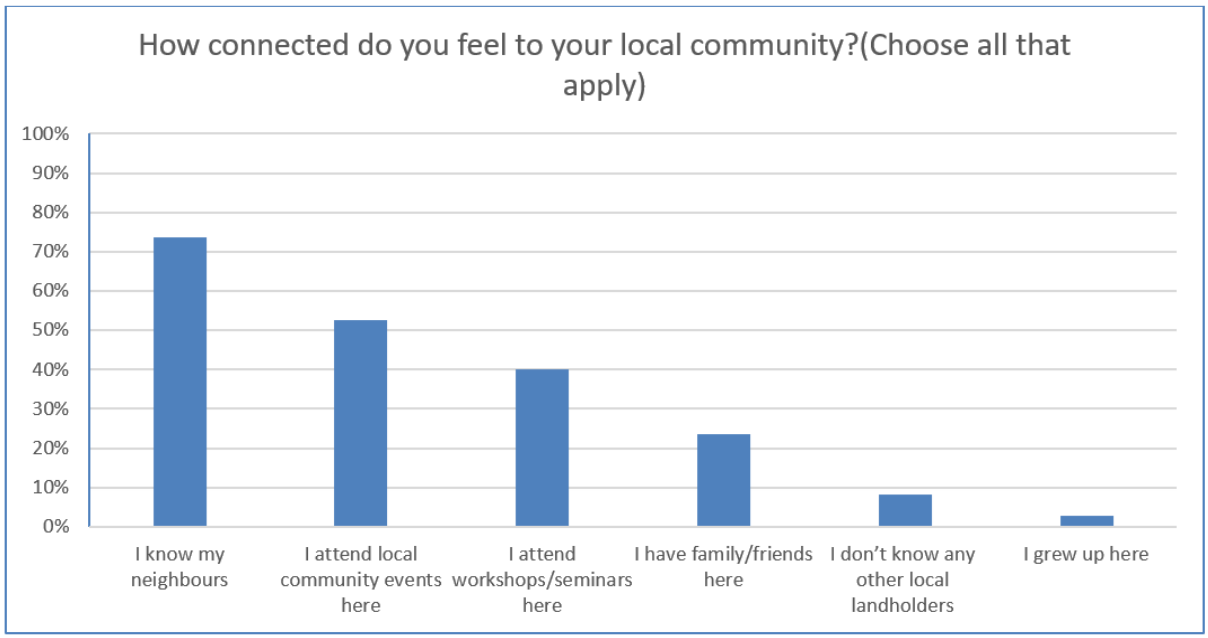

Figure 4. The connectedness of absentee landholders to their local community (n=72)

To further analyse the connectedness of these absentee landholder to their local communities, the six statements shown in Figure 4 were weighted from 1 to 3, based on whether they represented a low, medium or high level of connection to community (Table 1). Decision on weighting was influenced by the literature review of Baldwin et al. (2017), who linked social bonding and sense of community to "meaningful interactions with family, friends, neighbours and colleagues", "shared group goals and norms" and "shared history" (Baldwin et. al 2017, p. 39). Accordingly, the responses "I grew up here" and "Friends and family here" were assigned the highest connectivity score of 3 due to the "shared history" and "social bonding" they indicate. "I know my neighbours" was assigned a score of 2, while "I attend workshops/

seminars here" and "I attend local community events here" were each assigned a score of 1. The weightings in Table 1 were applied to the responses of each landholder to generate an overall community connectivity score (i.e. tallying up all the statements each respondent selected multiplied by their weighting in Table 1).

Table 1. Categories for Connectedness to community and the assigned scores

Qualitative Statement	Assigned score
I grew up here	3
Friends and family here	3
I know my neighbors	2
I attend workshops/seminars here	1
I attend local community events here	1
I don't know any other local landholder here	0

The average community connectivity score across all respondents was 3.19, with 46% of this score coming from connection to neighbours, 29% from involvement in workshops and community events, and 25% from higher-level connections (friends/family and having grown up in the area). These results suggest that neighbouring landholders represent an important intervention point for providing information to absentee landholders in the Central Tablelands. Workshops and community events may also represent an important intervention point for NRM agencies despite being rated lowest in Table 1, due to the fact that these options were selected by more than half of all respondents, and NRM agencies can play a direct role in organising such activities. In comparison, friends and family may offer a deeper connection to absentee landholders in the region where possible, but it is less common for at these absentee landholders to have such connections.

3.3 Collaborations

In terms of the types of collaborations that interest these absentee landholders, weed management and pest animal control were the dominant reasons chosen for collaboration; at 89% and 88% respectively (Figure 5). This was followed by revegetation and management of riparian zones, which were both selected by 59% of respondents. On the other hand, interest in collaborations of a more commercial nature, such as eco-tourism, branding and marketing of produce, and collective purchase and hire of goods and services, was low. Less than 30% of

respondents selected collective purchase and hire of goods and services, and selection for branding and marketing of produce and eco-tourism were lower at 18% and 16% respectively.

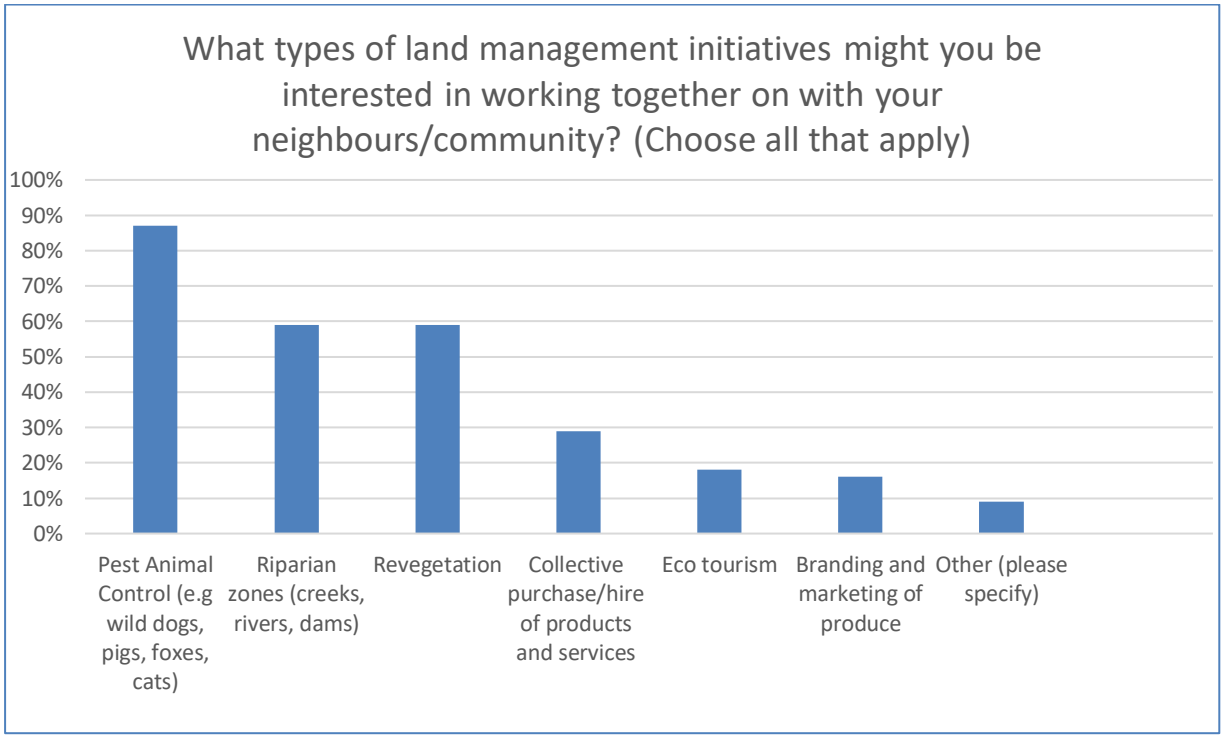

Figure 5. Types of collaborations respondents were interested in (n=74)

The interviews with these absentee landholders provided a deeper insight into their motivations for collaboration, with one-third of participants expressing that the they would like to see a stronger collective effort in order to address some of the problems they face on their land (Figure 6).

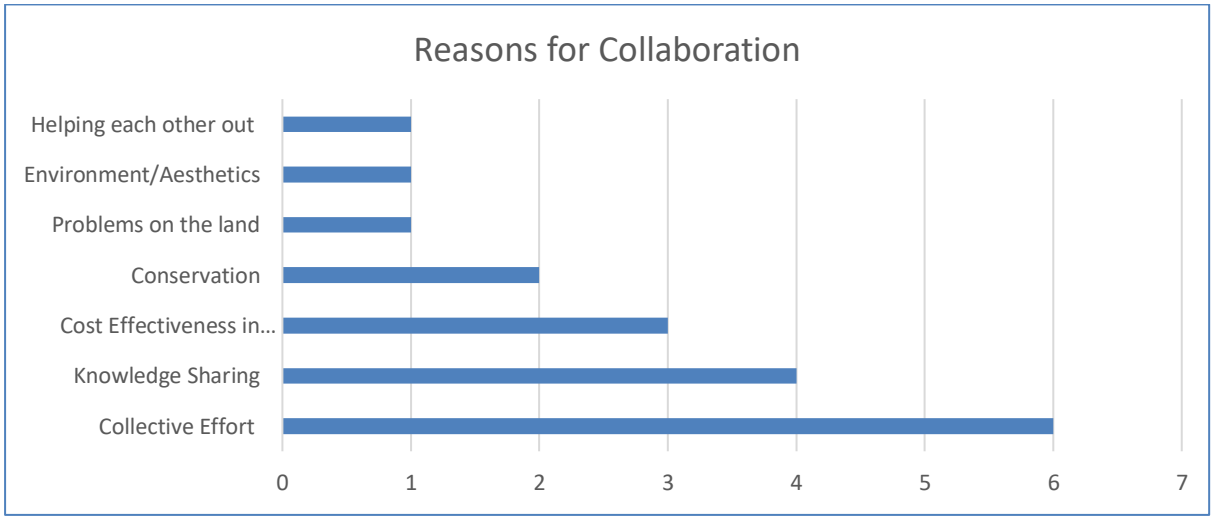

Figure 6. Reasons interview participants gave for collaborating (n=15)

The need for collective effort in managing weeds and pest animals was emphasised in the following comments:

> Weed control you know, I can do heaps on my property, but if the guy next door isn't doing it...I would have thought that it would be great if there was some sort of collaborative, not control, but administration of how they would control, rather than each farmer doing his own little bit...I felt it wasn't a group effort and it's nobody's fault, I would think that should be organized at a higher level. **C10**

> Like myself, one, don't have the equipment and when they do put the effort in, when your neighbour isn't doing anything about his…if they don't do theirs, you're just pouring money. And if they don't do theirs, it's just like over prescribing antibiotics, bugs get used to it. So now the tussock in the area is getting resilient to the chemicals. **B2**

Knowledge sharing with experienced landholders in the area was the second-most-common motivation cited for collaboration:

> Yeah sure well I mean it's really useful to be able to tap into that local knowledge, so having contact with people who lived in that area for you know maybe 10, 20, 30 years they have a really vital and specialized knowledge about what... Rather than just starting from scratch. No point making the same mistakes they might have made on the way to making the right decision. **B4**

With regards to equipment sharing, interviewees highlighted cost effectiveness as a potential benefit:

> ...we're discussing buying a mechanical auger to help us with this big hole. Now I find it stupid that everybody owns one of those things, when it could be something that you could, you could all pay for in a maintenance point of view and share it in the neighbourhood… a collaboration between absentee landholders; that could be cost effective. **C10**

4. Discussion

4.1 Engagement between absentees and NRM agencies

The difficulty in accessing absentee landholders, due to them being harder to reach and less likely to have strong connections with local social networks, has been cited as one reason for the limited research into this key stakeholder group around the world (section 1). The findings from this research, however, suggest that absentee landholders of the Central Tablelands access a range of information sources on land management, including government NRM agencies. Specifically, LLS, the most prominent regional NRM agency in NSW, was the most commonly used information source and the highest rated in terms of usefulness. Additionally, several

absentee landholder participants have stated that it is not just one or two, but *a combination of things, and going to different places for different advice* that provides the best and most useful information. This is a noteworthy difference with prior findings on absentee landholders in contexts besides this research case study. For instance, Petrzelka and Armstrong (2015) found that absentee landholders do not use "traditional" sources of conservation information, such as those provided by NRM agencies or social networks.

An overarching factor in engaging absentee landholders and influencing their land management actions is the level of confidence they have in NRM agencies (Blackmore, 2013; Moon et al., 2012; Selinske et al., 2015). Such confidence and trust are strong basis on which to build a mutually beneficial process of "co-management" between absentee landholders, their neighbours and NRM agencies that is underpinned by "social learning" involving all parties (Armitage et al., 2008; Selinske et al., 2015). Our findings add to this argument, with survey respondents indicating a high level of confidence in LLS, due to how widely it is used, and how useful it was rated by these absentee landholders. Additionally, neighbours received the second-highest average score for information usefulness and also constituted the largest component of the average community connectivity score calculated for survey respondents.

The monthly newsletters and regular Facebook posts by the Central Tablelands and Greater Sydney LLS on upcoming local events, workshops and seminars may be one reason that most absentee landholders in this study are aware of, and trust, government sources for information. Additionally, more than 40% said they attend workshops and seminars in their community. Participation in workshops and community events is not a particularly strong indicator of community connection compared to having friends and family nearby or having a shared history in a location (Baldwin et al., 2017). However, in the context of absentee landholders who lack local connections to friends and family, involvement in workshops and community events, along with connections to neighbours, represent important intervention points for information-provision and trust-building by NRM agencies.

Given that personal sources of information were prominent, peer to peer learning should be an area in which NRM agencies can seek to cultivate amongst communities and targeted especially at unengaged landholders. Peer learning enables landholders the chance to tailor outreach and communication according to their own land management or conservation needs, and landholders can be assured that information is coming from a credible source such as their

neighbours (Ma et al., 2012). Additionally, Schubert and Mayer (2012) points out that this two-way flow of information among peers will have a substantial influence on the success of cross-boundary and cooperative programs.

4.2 Fostering trust in NRM agencies

Building, maintaining and capitalising on trustful relationships requires carefully tailored engagement strategies, as well as consideration of factors such as resourcing and staff turnover. Previous studies (section 1.3) point to increased likelihood of participation in conservation programs when a strong, respectful and continuous relationship exists between landholders and implementing agencies (Blackmore, 2013). One way to build this trust and communication is through tailored outreach programs and workshops that recognise the heterogeneity of values and beliefs amongst landholders (Finley and Kittredge, 2006). In this regard, several of the absentee landholders interviewed stated that NRM agencies in the Central Tablelands have tailored their courses and workshops according to landholder interests, such as bird identification programs and courses on aphids and honeybees. Additionally, absentee landholders pointed out that such courses and programs improved their knowledge on these topics, and enabled them to explore specific interests such as the pollination of plants on their property.

While tailoring of workshops and courses to landholders' needs was reported by some interviewees, the results also suggest that NRM agencies could be better tailored to fit these absentee landholder's schedules, locations and information needs. As most absentee landholders live and work generally near urban areas which are far from their rural property and community, it is inconvenient for them to attend meetings and workshops held during the working week. Another way to better engage absentee landholders is for government agencies to continuously tailor courses and workshops to the issues they face on their land, and to their interest and motivations. Courses and workshops offer a means of updating or expanding that knowledge, as well as educating new absentee landholders with limited knowledge and experience in land management. Such events could also be used to facilitate collaboration around issues such as weed management, pest animal control, riparian zone management and revegetation, which were identified by participants in this case study as the leading issues around which collaboration would be beneficial.

While absentee landholders participating in the Central Tablelands case study were generally engaged with government information sources, uncertainty remains around how widespread such engagement is, and which strategies are likely to be most effective in improving communication and engagement. The case study showed that absentee landholders do engage with NRM agency information; however, further research may be needed to better tailor strategies that meet the needs of those who are already well connected to NRM agencies, as well as those who are not. The latter may not have been as extensively represented in the survey responses, given the lack of a unified database on absentee landholders at state level.

Worth mentioning is the need for financial and labour support regarding land management issues, as stated by some interviewees; suggestions in this regard included that the government could subsidize chemicals that absentee landholders use for weed control, or reinstate on-ground assistance around feral animal management that had previously been withdrawn. While this study did not specifically investigate the level of need for such support amongst absentee landholders, or the role that NRM agency support can play incentivizing conservation actions, these results highlight the importance of integrated landholder engagement strategies that jointly consider information provision, facilitation of landholder collaboration and direct financial and non-financial support. High staff turnover and frequent name changes and restricting of NRM agencies were also identified by participants as potential barriers to building relationships based on trust, confidence and social learning.

4.3 NRM agencies' use of technology

The results of this study also provide insights into how NRM agencies use technology to engage with absentee landholders. While online survey respondents showed relatively high levels of engagement with NRM agency information overall, there was a much lower level of utilisation of the LandSmart app. This app contains a great deal of information that is useful to absentee landholders and could be used by LLS to enhance engagement with them, thus increasing their knowledge in land management, in tandem with staying connected and informed about their local community and events.

It should be noted however, that the LandSmart app was launched slightly over a year prior to this research. Hence, more time is needed to determine the efficacy of this information source. Nonetheless, due to potential added value it could bring to absentee landholders, more

effort could be invested in promoting the app to absentee landholders, allowing them to stay informed and in touch with ease.

4.4 Absentee landholders' preferences for collaboration and recommendations for improvement

The case study results suggest that future cross-property collaborations, and the efforts by NRM agencies to facilitate them, should focus more on conservation and amenity rather than production (although linking in and introducing pertinent topics which may have a landscape-scale effect on production). Apart from the low number of landholders relying on their land for income, the strong preference for conservation-related collaborations also appears to be driven by a recognition that conservation outcomes relating to weeds, pests and habitat are often dependent on the collective effort of neighbouring landholders. One factor that remains unanswered, and could be the focus of further research, is whether landholders view collaborations with financial implications as riskier or more likely to complicate relationships with neighbours.

NRM agencies should also be mindful of the reasons and motivations that absentee landholders have for collaborating thereby increasing participation in initiatives and maximizing the potential results through the increased collective effort. Additionally, it should be noted that communities, locally and around the world, are becoming more fragmented with diverse values and motivations (Gosnell et al., 2006). This means that government agencies and other organisations would need to tailor outreach, advocacy actions and workshops to accommodate for this growing heterogeneity in values, especially since amenity-driven migration, and the fragmentation that results from this, will likely increase in the future.

This could be achieved by grouping landholders who share similar characteristics, interest or needs together (section 1.3), and tailoring these outreach or workshops to these commonalities. Another way to handle the growing heterogeneity in values, is to foster peer to peer learning within communities, thereby enabling landholders to acquire information according to their motivations and needs and obtaining them from various personal and government sources (such as neighbours, and LLS in the case of the Central Tablelands). Prior research (Hamunen et al., 2015) points to this approach as effective trust builder amongst communities, landholders and NRM agencies; potentially leading to higher participation in conservation initiatives and cross-

property collaborations; the latter being significant for on-ground actions in ecological important areas with high concentrations of difficult to reach landholders.

5. Conclusion

Using a case study of the Central Tablelands of NSW, this paper investigated ways in which absentee landholders access information on land management practices, the extent of their engagement with government NRM agencies, and the potential for absentee landholders to engage in cross-property collaboration. It was found that absentee landholders in this region access both government and non-government sources of information, with LLS and neighbours being the two most commonly used and most highly rated sources amongst survey respondents. The findings also point to unexploited opportunities for government NRM agencies to further improve their engagement with absentee landholders through new technologies, such as the LandSmart app, continuously adapt their outreach activities to fit absentee landholders' interests and logistical challenges, along with encouraging peer to peer learning to ensure that landholder's needs are met.

Most absentee landholders involved in this case study expressed a preference for non-commercial collaborations related to conservation and amenity, with the underlying reasons for collaborations being driven by a desire for knowledge-sharing and a collective effort to tackle these issues. Hence, future collaborations between NRM agencies, absentee landholders and their neighbours in this region could be strengthened through activities focused on conservation and amenity.

This paper's findings add to prior research that emphasises the importance of outreach and marketing efforts to be targeted, with consideration given to who presents the information, when and where it is presented, and how it is presented, to ensure it aligns with the motivations of the target group. In relation to absentee landholders, this requires a specific focus that considers their physical and social isolation, existing levels of knowledge, relationships with NRM agencies and their motivations for owning land.

Lastly, absentee landholders appear to be a dynamic and transient stakeholder group, requiring NRM agencies to continuously adapt their outreach to accommodate for the changing needs and growing heterogeneity in values found amongst absentee landholders. This requires

processes of social learning, in which NRM agencies are viewed not just a source of information, but also as members of the local communities whose role is to learn from other stakeholders and to build trustful and mutually supportive relationships.

References

AMPT, P., CROSS, R., ROSS, H. AND HOWIE, B., 2015. The case for retaining, redefining and reinvigorating extension in agricultural innovation systems *Rural Extension and Innovation Systems Journal*, 11(1) 157-164

ARMITAGE, D., MARSCHKE, M., PLUMMER, R., 2008. Adaptive co-management and the paradox of learning. *Global Environmental Change* 18, 86-98.

ARMITAGE, D., BERKES, F., DOUBLEDAY, N., 2007. Adaptive Co-Management and Complexity: Exploring the Many Faces of Co-Management, in: Armitage, D., Berkes, F., Doubleday, N. (Eds.), *Adaptive Co-Management. UBC Press*, Vancouver, pp. 1-15.

BALDWIN, C., SMITH, T. AND JACOBSON, C., 2017. Love of the land: Social-ecological connectivity of rural landholders. *Journal of Rural Studies* 51, 37-52.

BAUMBER, A., RAMMELT, C., AMPT, P., & MERSON, J. 2012. *Bioenergy from Native Agroforestry: Planning for a Regional Industry in the NSW Central Tablelands*. Publication No. 12/021. Rural Industries Research and Development Corporation, Canberra. 84p.

BAUMBER, A., METTERNICHT, G., AMPT, P., CROSS, R, & BERRY E. 2018a, Opportunities for adaptive online collaboration to enhance rural land management, *Journal of Environmental Management* 219, 28-36.

BAUMBER, A., METTERNICHT, G., AMPT, P., CROSS, R, & BERRY E. 2018b. From importing innovations to co-producing them: Transdisciplinary approaches to the development of online land management tools, *Technology Innovation Management Review* 8(8), 16-26.

BEHRENDT, K. & EPPLESTON, J. 2011. *Threats, realities and opportunities of grassland farming in the Central Tablelands.* Proceedings of the 26th annual grassland society of NSW conference, Bathurst, 2011. 12-22.

BERKES, F., 2009. Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management* 90, 1692-1702.

BLACKMORE, L. & DOOLE, G. J. 2013. Drivers of landholder participation in tender programs for Australian biodiversity conservation. *Environmental Science & Policy* 33, 143-153.

BLAIR, E. 2015. A reflexive exploration of two qualitative data coding techniques. *Journal of Methods and Measurement in the Social Sciences* 6(1), 14-29

BLANCO, V., BROWN, C. & ROUNSEVELL, M. 2015. Characterising forest owners through their objectives, attributes and management strategies. *European Journal of Forest Research* 134, 1027-1041.

BOND, A. J., O'CONNOR, P. J. & CAVAGNARO, T. R. 2018. Who participates in conservation incentive programs? Absentee and group landholders are in the mix. *Land Use Policy* 72, 410-419.

BUMAN, T. 2007. Reaching out to absentee landowners. *Journal of Soil and Water Conservation* 62, 36A-36A.

CRESWELL, J. W., PLANO CLARK, V. L., GUTMANN, M. L. & HANSON, W. E. 2003. Advanced mixed methods research designs. In A. Tashakkori and C.Teddlie (eds) (2003), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). Thousand Oaks, CA: SAGE Publications, Inc.

EMTAGE, N. & HERBOHN, J. 2012a. Assessing rural landholders diversity in the Wet Tropics region of Queensland, Australia in relation to natural resource management programs: A market segmentation approach. *Agricultural Systems* 110, 107-118.

EMTAGE, N., HERBOHN, J., & HARRISON, S. (2007). Landholder profiling and typologies for natural resource–management policy and program support: potential and constraints. *Environmental Management*, 40(3), 481-492.

FINLEY, A. O. & KITTREDGE, D. B. 2006. Thoreau, Muir, and Jane Doe: different types of private forest owners need different kinds of forest management. *Northern Journal of Applied Forestry* 23, 27-34.

GOSNELL, H., HAGGERTY, J. H. & TRAVIS, W. R. 2006. Ranchland ownership change in the greater yellowstone ecosystem, 1990-2001: Implications for conservation. *Society & Natural Resources* 19, 743-758.

HAMUNEN, K., VIRKKULA, O., HUJALA, T., HIEDANPÄÄ, J. AND KURTTILA, M., 2015. Enhancing informal interaction and knowledge co-construction among forest owners. *Silva Fennica* 49.10.14214/sf.1214.

HOLMES, J., 2006. Impulses towards a multifunctional transition in rural Australia: Gaps in the research agenda. *Journal of Rural Studies* 22, 142-160.

IKUTEGBE, V., GILL, N. & KLEPEIS, P. 2015. Same but different: sources of natural resource management advice for lifestyle oriented rural landholders. *Journal of Environmental Planning and Management* 58, 1530-1543.

KAM, H., METTERNICHT, G., BAUMBER, A. & CROSS, R. 2019. Engaging absentee landholders in ecosystem service delivery in southeastern Australia. *Ecosystem Services* 39, 100988.

KUIPERS, B. T., & POTTER-WITTER, K. (2013). Identifying appropriate communication means for reaching nonindustrial private forest landowners. *Journal of Forestry*, 111(1), 34-41.

LANDCARE NSW 2018, *Landcare NSW- Who are we*, http://landcarensw.org.au/wp-content/uploads/2018/11/FINAL_Who-is LNSW_brochure_WEB.pdf

LOCAL LAND SERVICES, CENTRAL TABLELANDS n.d., *Regional Profile*, LLS, Central Tablelands http://centraltablelands.lls.nsw.gov.au/our-region/region-profile

MA, Z., KITTREDGE, D. B., & CATANZARO, P. (2012). Challenging the traditional forestry extension model: Insights from the Woods Forum Program in Massachusetts. *Small-scale Forestry*, 11(1), 87-100.

MEADOWS, J., EMTAGE, N., & HERBOHN, J. 2014. Engaging Australian small-scale lifestyle landowners in natural resource management programmes–Perceptions, past experiences and policy implications. *Land Use Policy, 36*, 618-627.

MEADOWS, J., HERBOHN, J. & EMTAGE, N. 2013. Supporting Cooperative Forest Management among Small-Acreage Lifestyle Landowners in Southeast Queensland, Australia. *Society & Natural Resources* 26, 745-761.

MOON, K., MARSHALL, N. & COCKLIN, C. 2012. Personal circumstances and social characteristics as determinants of landholder participation in biodiversity conservation programs. *Journal of Environmental Management* 113, 292-300.

MORRISON, M., GREIG, J., READ, D. M. Y., WALLER, D. S. & MCCULLOCH, R. 2015. Communicating information to difficult-to-reach landholders: perspectives of natural resource management communication practitioners. *Australasian Journal of Environmental Management* 22, 315-328.

PETRZELKA, P. 2012. Absentee landowners in the Great Lakes Basin: Who they are and implications for conservation outreach. *Society & Natural Resources* 25, 821-832.

PETRZELKA, P. 2014. Absentee landlords and agriculture. *Encyclopedia of Food and Agricultural Ethics*. Springer.

PETRZELKA, P. & ARMSTRONG, A. 2015. Absentee landowners of agricultural land: Influences upon land management decision making and information usage. *Journal of Soil and Water Conservation* 70, 303-312.

PETRZELKA, P., BUMAN, T. & RIDGELY, J. 2009. *Engaging absentee landowners in conservation practice decisions: A descriptive study of an understudied group*. Journal of Soil and water Conservation, 64**,** 94A-99A.

PETRZELKA, P., MA, Z. & MALIN, S. 2013. The elephant in the room: Absentee landowner issues in conservation and land management. *Land Use Policy* 30, 157-166.

REDMON, L.A., CLARY, G.M., CLEERE, J.J., EVERS, G.W., HABY, V.A., LONG, C.R., NELSON, L.R., RANDEL, R.D., ROUQUETTE Jr, M., SMITH, G.R. and THRIFT, T.L., 2004. Pasture and Livestock Management Workshop for Novices: A New Curriculum for a New Clientele. *Journal of Natural Resources and Life Sciences Education 33*, pp.7-10.

REGIONAL DEVELOPMENT AUSTRALIA CENTRAL WEST 2013. *Regional Plan 2013 – 2016*, RDA http://www.rdacentralwest.org.au/wp-content/uploads/2014/12/RDA-Central-West-Regional-Plan-2013-2016.pdf

RICKENBACH, M., SCHULTE, L. A., KITTREDGE, D. B., LABICH, W. G. & SHINNEMAN, D. J. 2011. Cross-boundary cooperation: A mechanism for sustaining ecosystem services from private lands. *Journal of Soil and Water Conservation* 66, 91A-96A.

SELINSKE, M.J., COETZEE, J., PURNELL, K., KNIGHT, A.T., 2015. Understanding the Motivations, Satisfaction, and Retention of Landowners in Private Land Conservation Programs. *Conservation Letters* 8, 282-289.

SCHUBERT, J. R., & MAYER, A. L. (2012). Peer influence of non-industrial private forest owners in the Western Upper Peninsula of Michigan. *Open Journal of Forestry*, 2(3), 150.

ULRICH-SCHAD, J. D., BABIN, N., MA, Z. & PROKOPY, L. S. 2016. *Out-of-state, out of mind? Non-operating farmland owners and conservation decision making*. Land Use Policy, 54**,** 602-613.