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Understanding animal health communication networks among smallholder livestock producers in Australia using stakeholder analysis

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ABSTRACT

Smallholder livestock producers are a diverse population with wide ranging motivations for keeping livestock. The biosecurity risk posed by smallholders has been the subject of much conjecture, with comparisons often made between the level of animal health and biosecurity knowledge of smallholders, versus that of commercial livestock producers. This research aimed to gain a better understanding of current knowledge of smallholder production in Australia, particularly in relation to biosecurity and emergency animal disease, and to investigate the relationships that exist between smallholders and the organisations and individuals from which they seek information, assistance and support. Engagement with stakeholders is an important component of an effective biosecurity communication strategy as the dissemination of biosecurity related information from a single source cannot be expected to satisfy the needs of such a broad ranging population. A qualitative study involving a review of literature, semi-structured interviews with government and non-government stakeholders and the development of smallholder and stakeholder influence and interest grids was undertaken. This paper forms part of a broader mixed methods research project among smallholders.

Results from the stakeholder analysis showed variation in the parameters used to define smallholders and in the level of stakeholder involvement. Smallholders identified breeding consultants, other producers, private veterinarians and family, friends and colleagues as having a significant to high level of interest and potential to influence their practices. Government agencies were perceived to only have some level of interest but significant influence. Industry stakeholders and rural suppliers were positioned in the quadrant reflecting perceived low levels of interest and influence. The interest and influence grid developed from stakeholder's perspectives demonstrate a clustering around the mid points for both interest and influence, with the exception of those from industry who described low levels of interest and influence. Commonwealth and State government stakeholders reported a higher level of interest than influence. Veterinarians, both government and private, reported some to significant levels of interest and influence. In contrast to the results from the smallholder grid, rural suppliers reported relatively high levels of both interest and influence. The current study demonstrates that to maximise the effectiveness of biosecurity communication, there is a need for government and industry organisations to further engage with all stakeholders involved with smallholders.

1. Introduction

Smallholders are often considered to pose a greater biosecurity risk compared to commercial producers with regards to the introduction and spread of endemic and exotic livestock diseases. Research suggests the lack of prior agricultural knowledge and experience of smallholders and a lack of local communication networks supporting them has contributed to this perception (Hollier

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and Reid, 2007). Investigations aimed at defining the demographic characteristics, motivations and biosecurity related practices and attitudes have gone some way to increasing our understanding of this sector in relation to animal health and biosecurity, however further work is required (Maller et al., 2007). Whilst the notion of the "tree change", a term used to describe moving from a large city to a smaller town or rural area (Aslin, 2006), continues to be part of the Australian vernacular, our knowledge and understanding of smallholders, particularly in relation to animal health and biosecurity risk, is incomplete. The label smallholder can encompass a variety of terms including tree changer, small landholder, peri-urban dweller, hobby farmer and lifestyle farmer, making for a challenging research environment (Hollier and Reid, 2007). Definitions used for both research and service provision highlight cross over and disparity, supporting the argument that smallholders are not a homogenous group. Understanding the different typologies describing smallholders is crucial for improving their practices in relation to biosecurity and animal health management.

The lack of adequate communication networks between smallholders and industry and government stakeholders has also been identified as a major issue (Hollier and Reid, 2007; Schembri, 2009; Hernández-Jover et al., 2013). Identifying and engaging relevant stakeholders are key components of an effective risk communication strategy (Beierle, 2002; Hernández-Jover et al., 2012). Better extension and communication networks could increase producers' active engagement and participation within their respective livestock industry, and as a consequence potentially decrease the risk of disease introduction and spread (Hernández-Jover et al., 2012).

This research aims to gain a better understanding of current knowledge of smallholder production in Australia, particularly in relation to biosecurity and emergency animal disease, and to investigate the relationships that exist between smallholders and the organisations and individuals from which they seek information, assistance and support. As part of a larger project aimed at characterising smallholder production in Australia, a literature review, stakeholder consultation and the development of stakeholder and smallholder interest and influence maps was undertaken. For the purpose of this research, smallholders were defined as those keeping less than 50 cattle and/or sheep. The study was conducted in two phases. The main objective of Phase one was to examine the characteristics, on farm practices and communication networks of smallholders via a questionnaire and a review of relevant literature. This phase also involved consultation to identify relevant stakeholders and examine their relationship with the smallholder population, as well as determining whether the identified stakeholders could assist with the distribution of the questionnaire to smallholders.

Phase one highlighted the need for further investigation into the stakeholder networks of smallholders as findings support the inadequacy of communication networks between smallholders and relevant stakeholders. Whilst the effectiveness of current communication networks and strategies is uncertain; the low level of biosecurity practices applied on farm among smallholders as well as some of the health management practices might indicate that these are not as effective as they should be.

Therefore Phase two investigated current communication networks. This phase of the study involved focus group discussions with smallholders within three selected regions – Riverina region (New South Wales; NSW), South Coast region (NSW) and Euroa/Benalla region (Victoria) – and the development of stakeholder and smallholder interest and influence maps.

Findings from the stakeholder consultation and stakeholder and smallholder interest and influence maps will be discussed in this paper. The smallholder questionnaire and other aspects of the focus group discussion will be published elsewhere.

2. Materials and methods

Study proposals were submitted to the Human Research Ethics Committee at Charles Sturt University with the research titles "Characterization of smallholder livestock production in Australia" (Phase one) and "Investigating attitudes, behaviours and communication networks in relation to biosecurity and emergency animal disease among smallholder producers in New South Wales and Victoria" (Phase two). The research proposals were approved on the 20th May 2013 (protocol number 416/2013/05) and on the 9th December 2014 (protocol number 400/2014/52), respectively.

2.1. Literature review

A synthesis of relevant literature in the area of smallholder biosecurity in Australia was undertaken.

2.1.1. Search strategy

The search terms were combinations of the following words anywhere in the title or abstract – smallholder, small land holder, peri-urban, hobby farms, tree changers, life style farmer, biosecurity, livestock, stakeholders, smallholder mapping, risk. This broad range of terms was expected to cover the variation in terminology used to describe potential members of our target cohort. The Primo Search, Wiley Online Library and Science Direct databases and Google Scholar were searched. Bibliographies of retrieved articles were also searched for relevant literature.

Research and publication portals within Australian state and federal government websites Department of Agriculture and Water Resources (DAWR), Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), NSW Department of Primary Industry (DPI), Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR), Department of Agriculture and Food Western Australia (DAFWA) and Rural Industries Research and Development Corporation (RIRDC) were also searched. In addition, stakeholders consulted as part of this project were asked to provide papers or reports (published or unpublished) that they considered relevant to the area of research.

2.1.2. Selection criteria

A considerable amount of research was undertaken prior to 2008 and whilst this review does consider this earlier research, the main focus was to investigate the current state of smallholder and biosecurity research within Australia and thus as such, more recent papers (2008–2015), form the basis of this review. Papers and reports were examined, excluding any that did not have an Australian focus; primarily investigated large scale production/producers; and/or contained no or minimal reference to animal health and biosecurity. There were no other restrictions on the type of studies included.

2.2. Stakeholder consultation process

For this research, the general definition of a stakeholder was a person or group that can affect or be affected by a decision or action (Savage et al., 1991; Mitchell et al., 1997; Freeman, 2010). Based on existing knowledge of the smallholder sector gained from previous studies by the research team and online searches using the keywords – smallholders; peri urban; small farm; hobby farmers; support services; Australia – stakeholders considered to have an interest in smallholders were identified. Northern Territory stakeholders were then excluded due to the low number of smallholders identified in that state (Animal Health Australia, 2003). Initial contact was made with identified stakeholders via telephone calls and/or email after which a set of questions (Table 1) related to involvement with smallholders was provided. Stakeholders were