



Photo by Cath Muscat

NSW PERI URBAN BIOSECURITY PROGRAM

Non-English speaking background (NESB) pig production in Greater Sydney

For improved pig biosecurity and swill feeding practices

Schembri N, McGregor H, Gill N, Maier A



Published by NSW Department of Industry

industry.nsw.gov.au

Title: Non-English speaking background (NESB) pig production in Greater Sydney

Subtitle: For improved pig biosecurity and swill feeding practices

First published: March 2019

Department reference number: V15/5017#16 PUB19/431

More information

Schembri N¹ and McGregor H², Gill N³, Maier A³.

- ¹ NSW Peri Urban Biosecurity Program, NSW DPI, Newington, Sydney
- ² Redefining Agriculture Consultancy Pty Ltd, Melbourne
- ³ Greater Sydney Local Land Services, Sydney

Acknowledgements

This project was funded by the Department of Agriculture and Water Resources. The work was completed as part of the NSW Peri Urban Biosecurity Program - a NSW Department of Primary Industries and Greater Sydney Local Land Services partnership, in consultation with Redefining Agriculture Consultancy Pty Ltd, Asian Women at Work and the NSW Ethnic Communities Council. We would like to acknowledge the Sydney Markets, Asian Vege Growers, and service providers within Greater Sydney who assisted with network mapping and engagement activities, and Animal Health Australia for their support.



© State of New South Wales through Department of Industry 2019. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Industry as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2019) and may not be accurate, current or complete. The State of New South Wales (including the NSW Department of Industry), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Executive summary

This project explored ways to achieve favourable biosecurity outcomes by focusing on changing the biosecurity behaviours of people in such a way that the risk of disease transmission was decreased.

The main focus was on using non-English speaking background (NESB) community champions to investigate and influence behaviours related to swill feeding within their communities (Chinese, Vietnamese and Korean) in the Greater Sydney area. Activities conducted during the project included:

- interviews with NESB farmers, food outlet businesses (who either traded in pork products or utilised meat products as part of everyday business) and consumers
- mapping of NESB communities, pig farming service providers (vets, feed suppliers and contractors) and relevant NESB food outlets
- a survey of NSW environmental health officers about retail sourcing and disposal of pork
- a survey of service providers about veterinary services and advice provided to pig owners in the Greater Sydney area
- the development and delivery of NESB communications around swill feeding and biosecurity behaviours.

More insight into the practices and beliefs of relevant businesses and consumers was gleaned through collaboration with community champions than would otherwise have been possible, and champions played a significant role in educating their communities about their role in Australia's shared biosecurity responsibility.

The engagement of NESB champions was found to be essential in:

- identifying and communicating (in first languages) with NESB community members (butchers, food outlets, farmers, pork consumers, butcher clients and market attendees)
- identifying alternative swill feeding engagement pathways
- improving the tailoring and reach of biosecurity messages
- providing government with a better understanding of NESB attitudes and practices around retail food business interactions and transactions
- identifying NESB community actors (e.g. retail food businesses) who could offer culturally-appropriate advice about biosecurity practices to fellow NESB community members.)

Key outcomes of the project delivered include:

- evidence that NESB champions' knowledge of their communities is essential in tailoring biosecurity messages and delivering them via effective channels to the right people
- evidence that much of the interactions associated with smallholder pig ownership (including those relating to swill feeding) are likely to be outside the more apparent agricultural networks, and located within family or community networks unrelated to livestock ownership
- identification of clear alternative pathways for NESB community engagement about biosecurity.

Key implications for future work include:

- the need for further mapping work and application of land use data to more accurately predict the likelihood of pig ownership based on land area available, and its suitability for large livestock ownership
- investigating how cultural, geographical, resource and physical variables affect smallholder) behaviours and engagement, and tailoring engagement strategies accordingly)
- engaging with other NESB community groups to elicit further understanding of cultural practices associated with smallholder pig ownership
- ongoing engagement with food retail personnel in inner city areas in order to build attitudinal change and retailer understanding of the biosecurity and business risks of supplying swill.

Priority recommendations for action (by government, industry and researchers) are listed below. Further discussion is required to identify who will undertake certain activities, and what existing efforts and resources can be leveraged to make progress.

- 1.) Use communications and engagement to address the perception of NESB communities that the risks associated with swill feeding are lower in Australia than in Asia.
- 2.) Perform further mapping work and application of land use data to more accurately predict the likelihood of pig ownership based on land area available, and its suitability for large livestock ownership.
- 3.) Undertake further collaboration with environmental health and food safety personnel to learn more about the practices of NESB pork retailers and related businesses (and to provide an additional source of extension). This should be done most urgently in suburbs identified through mapping as having a high proportion of NESB residents, and where retail outlets as potential suppliers of swill have not yet been surveyed.
- 4.) Make the provision of food waste to pig owners by food outlets and retailers a practice auditable by NSW Food Authority and Environmental Health Officers (and provide any necessary training to those officers).
- 5.) Include additional information about prohibited pig feed and responsible disposal of food waste in the NSW Retail Meat Diary and User Guide.
- 6.) Identify and use alternative channels for NESB community biosecurity engagement (such as service providers and other channels identified in this report), and offer communities incentives (such as resources and support) for engaging with government about swill feeding. Focus these engagement efforts on NESB communities, networks and associations in suburbs which support (as identified in mapping) an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership.
- 7.) Identify key differences between NESB smallholder pig owners in inner and outer suburbs, and between cultures and communities, and tailor engagement and messaging accordingly. If possible, engage relevant cultural community leaders, advocates or volunteers to provide insight and advice.

A full summary of project findings (by theme) and relevant recommendations is provided below.

a) Face-to-face engagement by NESB community champions

The engagement of NESB champions was found to be essential in:

- identifying and communicating (in first languages) with NESB actors (butchers, food outlets, farmers, pork consumers, butcher clients and market attendees)
- identifying alternative swill feeding engagement pathways (such as by using union networks to combine biosecurity extension to NESB businesses with union activity)
- improving the tailoring and reach of biosecurity messages
- providing government with a better understanding of NESB attitudes and practices around retail food business interactions and transactions
- identifying NESB community actors (e.g. retail food businesses, union staff) who could offer culturally-appropriate advice about biosecurity practices to fellow NESB community members.

In addition, there are likely to be key differences between NESB smallholder pig owners in inner and outer suburbs, and between cultures and communities. This means that a swill feeding engagement strategy may not be best approached through a single line of communication or engagement.

Recommendation A1: Employ NESB engagement liaison officers (and possibly create a train-the-trainer program) to work with existing agricultural education and extension organisations to undertake work with NESB communities on behalf of government.

Recommendation A2: Use NESB champions to further explore alternative biosecurity engagement channels (such as community groups not directly associated with but closely aligned with pig ownership). Recognise that NESB champions may differ in each geographic community—they may be a cultural community leader within a particular suburb, or have connections with (for example) school communities or child care groups integral to and trusted by a cultural community.

Recommendation A3: Develop a broader understanding of internal incentives (such as culture, values and beliefs) for biosecurity engagement (which are likely to differ among cultures, key personnel and businesses, communities and locations) with NESB communities.

Recommendation A4: Use engagement channels to maintain ongoing contact with NESB communities. This continuity will build trust and create an environment where the concept of biosecurity becomes everyday language, and NESB communities will better understand their part in Australia's shared biosecurity responsibility.

Recommendation A5: Engagement campaigns should address the perception (of NESB communities) that the risks associated with swill feeding are lower in Australia than in Asia.

Recommendation A6: Communicate immediate, relevant and tangible engagement benefits to individuals, families and businesses (for example, offering resources and support or stimulating a sense of achievement, pride and purpose in communities, businesses and individuals involved in pig ownership or trade).

b) Other opportunities for face-to-face engagement with NESB retailers

Findings support the continuation of engagement with food retail personnel in inner city areas in order to build attitudinal change and understanding of the biosecurity and business risks of supplying swill. In addition, efficiencies could be gained through opportunistically tying in swill feeding messages and extension with visits to NESB businesses about waste reduction, such as those that are part of the EPA's Bin Trim program.

However, Korean, Vietnamese and Chinese butchers indicated that they are too time-poor to attend a workshop on waste disposal or biosecurity, even with incentives or benefits (e.g. a free copy of the retail meat diary and catering provided). This suggests businesses may only pay attention to information sent to them (or change a behaviour) if it is directly related to legislative regulations where penalties are imposed for non-compliance.

Recommendation B1: Undertake further collaboration with environmental health and food safety personnel to learn more about the practices of NESB pork retailers and related businesses, and to provide an additional source of extension.

Recommendation B2: Make the provision of food waste to pig owners by food outlets and retailers a practice auditable by NSW Food Authority and Environmental Health Officers (with maximum penalties for non-compliance). This may require providing legislative training to local government inspectors about responsible disposal of food waste (so they may assist with preventing and monitoring the supply of swill by food outlets).

Recommendation B3: Meat retailers are required to list (in a NSW Retail Meat Diary auditable by the NSW FA and EHO) where their supplies are sourced from and a provider must be an approved supplier (i.e. hold a NSW Food Authority licence number). Additional information about prohibited pig feed and correct disposal of food waste should be included in the NSW Retail Meat Diary and User Guide.

Recommendation B4: Showground bodies, farmers markets and festival organisers (cultural, music, food) should be educated about responsible disposal of food waste to reduce the risk of swill being supplied to livestock owners.

Recommendation B5: Suburbs with a high proportion of NESB residents, and where retail outlets as potential suppliers of food waste have not been surveyed, should be investigated as a priority

c) NESB biosecurity communication channels

NESB champions reported that many Chinese in the Greater Sydney area are not good at English and rely heavily on finding information on accommodation, sales and news from local Mandarin media. Suitable channels for biosecurity engagement in the Greater Sydney area included:

- WeChat (local and China-based networks)
- Fleamarket
- SBS radio (Mandarin, Vietnamese, Filipino, Korean and Cantonese)
- Radio2000 (Sydney bilingual community radio)
- NESB newspapers
- Australian Chinese Growers Association (part of Hort-Innovation's VegNet)
- Marketplaces (especially at the Flemington and Homebush markets)
- Online marketplaces (such as Gumtree, Taobao, Alibaba, Facebook Buy Swap and Sell, Farm Trader and T-mall)
- The podcast *G'day Australia* run by Sean Cho (in Mandarin)
- *Hanho Daily*, *Kakao Talk*, *Missy Australia*, *Hojunara* and *KOWHY* (online Korean platforms)

Recommendation C1: Identify alternative channels for NESB community engagement (by identifying other NESB community advocates as well as service providers such as vets and livestock contractors) including those which target women and other sub-groups (e.g. growers associations, market goers, high school/agriculture students) within these communities.

Recommendation C2: Use trusted NESB media (such as *SydneyToday* and *SBS radio*) to extend the reach of biosecurity messages.

Recommendation C3: Engage with high schools where all year 7 and 8 students learn agriculture, as well as agriculture-focused schools (such as James Ruse Agricultural High in north/north-west Sydney). These schools often have high numbers of NESB students from farming families. Connect NESB champions with the Sydney Agricultural Teachers Association to promote understanding and best practice pig keeping.

Recommendation C4: Investment in a public WeChat account for biosecurity engagement with the 902 million daily users (Scott, 2018).

d) NESB communities, food retailers and pig ownership data

Mapping and data identified:

- suburbs in the Greater Sydney (GS) area which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership
- that pigs were being kept within relatively built up and densely populated areas of Greater Sydney (including suburbs with both high numbers or demographics of interest in this project and those identifying as NESB within these populations) such as Fairfield, Blacktown and Canterbury
- a number of GS suburbs with a high proportion of NESB residents which overlap with retail pork outlets (potential suppliers of swill) which have not yet been surveyed
- a cross-section of potential points of engagement with five cultural groups (and in particular with NESB residents in those communities)
- a comprehensive subset of potentially high-risk (with respect to biosecurity practices) points of contact for smallholder pig owners (including retail food outlets)
- smaller communities of ethnic groups outside of higher-density, inner city locations where pig ownership is more likely (but which may have been previously overlooked due to their relatively lower numbers of any given demographic)
- no reported contact between vets or service providers and NESB pig owners in the Greater Sydney area (even those areas identified as likely to have NESB owners of pigs)

- the absence of NESB smallholder pig owners at live auctions or abattoirs suggests that any who do exist in the region do not share points of contact with the local pig industry.

Recommendation D1: Identify and use additional, broader community engagement channels for effective communication with more isolated, lower density, less serviced communities (both to extend key messages and identify any differences between outer- and inner-city populations).

Recommendation D2: Investigate as a priority any suburbs with a high proportion of NESB residents, and where retail outlets as potential suppliers of food waste have not been surveyed

Recommendation D3: Further investigate any relationship or contact with service providers in relatively built up and densely populated areas of Greater Sydney (with both high numbers or demographics of interest in this project and those identifying as NESB within these populations areas) to inform future engagement.

Recommendation D4: Further investigate NESB communities, networks and associations in suburbs which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership.

Recommendation D5: Use the available (comprehensive) land use data for Greater Sydney to more accurately predict the likelihood of pig ownership based on land area available, and its suitability for large livestock ownership.

Recommendation D6: Use the information mapped in this project to determine a) the demographic in contact with service providers b) the size of the demographic that each service provider network could reach, particularly through the use of traditional passive communication materials (such as flyers and posters) at the points of contact.

Recommendation D7: Facilitate contact between service providers and NESB pig owners (once identified) by, for example, inviting service providers to speak or give demonstrations at events attended by NESB communities.

Recommendation D8: Investigate how cultural, geographical, resource and physical variables affect smallholder behaviours and engagement, and tailor engagement strategies accordingly.

e) Other recommendations

Recommendation E1: The procedures of waste cycle refuse depots (such as the Green Point used by the Flemington markets) should be reviewed to quantify what is collected, processed and how, type and destination of any off-site movement of food matter. This information could be used to assess the swill feeding risk posed by waste cycle refuse depots.

Contents

Executive summary	1 \$
Introduction	8 \$
Abbreviations	11 \$
1. Background	12 \$
1.1. Demographics of Greater Sydney.....	12 \$
1.2. Smallholder pig producers and pigs in Greater Sydney	12 \$
1.3. Project activities	13 \$
1.4. Methodology.....	14 \$
1.4.1. NESB community champions.....	14 \$
1.4.2. Online trading of pigs.....	15 \$
1.4.3. Network Mapping.....	15 \$
1.4.4. Engagement and extension	17 \$
2. Results	18 \$
2.1. NESB Food Outlet Networks	18 \$
2.1.1. NESB businesses handling pork products	18 \$
2.1.2. NESB retailer attitudes and practices around the source and disposal of meat \$ products	20 \$
2.2. NESB community attitudes to pork and pork suppliers	20 \$
2.3. NESB community attitudes to swill feeding.....	20 \$
2.4. NESB farmers' knowledge, relationships and practices	20 \$
2.5. Presence of NESB pig owners at abattoirs and saleyards in Greater Sydney.....	21 \$
2.6. Online trading of pigs and pig products	22 \$
2.7. Geographic information system mapping.....	23 \$
2.7.1. Pig populations and land use.....	25 \$
2.7.2. Service provider networks.....	25 \$
2.7.3. Contact points for food waste and for sale or distribution of pig meat products	26 \$
2.8. EHO staff knowledge about pork and pig meat businesses	28 \$
3. NESB community engagement and communications materials developed	30 \$
3.1. Social media and radio engagement	30 \$
3.2. Face-to-face engagement	30 \$
3.3. Traditional print media.....	30 \$
3.4. New channels of communication	31 \$
3.5. Tailoring swill feeding and biosecurity communications for NESB communities.....	34 \$
3.5.1. Communication channels for NESB communities	35 \$
3.5.2. Korean community communication channels.....	35 \$
3.5.3. Chinese community communication channels	36 \$
3.6. Unexpected engagement outcomes	36 \$
4. Discussion	37 \$

Bibliography.....	42 \$
Appendices.....	44 \$
Appendix A.....	44 \$
Additional NESB champion engagement materials.....	44 \$
Appendix B.....	47 \$
Additional service provider demographics.....	47 \$
Appendix C.....	51 \$
Service provider questionnaire.....	51 \$
Appendix D.....	53 \$
EHO personnel questionnaire.....	53 \$
Appendix E.....	55 \$
NESB Radio interview coverage.....	55 \$
SBS Mandarin radio interview transcript.....	57 \$
Radio 2000 interview transcript.....	58 \$
Appendix F.....	59 \$
NESB Newspaper Advertisements.....	59 \$
Appendix G.....	60 \$
WeChat – translated NESB (Chinese) social media posts.....	60 \$
Appendix H.....	61 \$
NESB Responsible disposal of food waste.....	61 \$

Introduction

Swill feeding as a biosecurity risk

Pig diseases are known to spread primarily through human activities (by people feeding swill and moving pigs and pig products).

Swill feeding is well recognised as a significant risk factor for the introduction and spread of many emergency animal diseases (EADs), including foot-and-mouth disease (FMD) and African and classical swine fevers (ASF/CSF). Swill feeding is the term used to refer to the practice (prohibited in Australia) of feeding pigs either meat or other mammalian by-products, or products which have had contact with meat.

In 2011 a review of Australia's preparedness for the threat of FMD (commissioned by the then Department of Agriculture, Forestry and Fisheries, and now the Australian Government Department of Agriculture and Water Resources) identified swill feeding as one of 11 significant issues in national FMD preparedness. The report also identified swill feeding of illegally imported contaminated products "the most viable and likely opportunity for the FMD virus to establish in Australia".

In response, animal health stakeholders developed nationally consistent swill feeding legislation and controls, including an audit program managed as an ongoing program through Animal Health Australia (AHA). As part of this work, AHA drafted a national *Prohibited Pig Feed Compliance & Awareness Project Business Plan* and established a working group comprising stakeholders to, among other goals, increase public awareness of the national swill feeding ban and compliance with it. However, resource limitations prevented the communication plan from including face-to-face engagement strategies. This project sought to address that gap (with the target group identified below).

In this project, a key aim was to achieve favourable biosecurity outcomes by focusing on changing the habits and behaviours of people in such a way that the risk of disease transmission was decreased.

Influencing the biosecurity behaviour of swill feeding through engagement

Face-to-face engagement (along with using trusted sources of information) has been identified through communication and behavioural research as the most effective way to influence target behaviours. While media advertising can be effective in creating public awareness and understanding of issues, it is limited in its ability to change behaviour, and written communication (websites or flyers) provided by the government have been shown to have little impact on behaviour. Initiatives to promote behaviour change have been shown to be most effective when they are carried out at the community level and involve direct contact with people. This was the approach adopted by this project.

The group selected for face-to-face engagement

With limited resources, this project deliberately focused on communities which prior research identified as having an increased likelihood of engaging in swill feeding—peri-urban smallholders and those from non-English speaking backgrounds (NESB). There is some overlap between the two groups.

Numerous previous studies suggest that the biosecurity practices of small-scale pig producers have changed little over the past 10 to 15 years (Schembri et al., 2010, Schembri et al., 2014, Brookes et al., 2014; Hernández-Jover et al., 2014; Hernández-Jover et al., 2018). Smallholders keeping any stock on less than 10 hectares currently do not pay Local Land Services rates that support biosecurity, animal health programs and emergency work, pest control and stock identification systems (LLS, 2018). While all livestock are legally required to have a property identification code (PIC), many smallholders (those on less than ten hectares) do not have one. Anecdotal evidence would suggest this is particularly true for smallholders in peri-urban Greater Sydney. When these smallholders trade informally (through private online transactions), they do so unregistered.

Previous studies also indicate that small-scale pig producers tended to engage in higher risk practices. For instance, many do not recognise themselves as being part of the broader pig industry, or having the same responsibilities as their commercial counterparts. High-risk practices include: undertaking minimal on-farm biosecurity measures, feeding alternative feedstuffs, performing minimal disease surveillance and reporting, and having little veterinary contact. In addition, while some smallholder trade of live pigs is via saleyards, a high proportion occurs by direct private sale and increasingly, online. The traceability of (potentially infected) pigs traded this way is likely to be low.

In addition, smallholder pig producers are often transient as they enter and exit the industry in response to external factors such as market price, feed costs, feed and water availability, pig availability (Schembri et al., 2013) and lifestyle choices. This means that maintaining an up to date database of small pig producers is very difficult.

Furthermore, previous studies identified that backyard and small-scale producers (and in particular those in or near peri-urban areas) are more likely to feed swill to their pigs. This because a greater proportion of these producers can readily source food waste from nearby households, supermarkets and retail food outlets (Schembri et al., 2014). In addition, the methods used to target premises with pigs for swill feeding auditing are questionable. Previously, many jurisdictions relied on neighbours and other local producers to report suspicious activity (Schembri et al., 2009) and to some extent this remains the case for NESB communities where community engagement in this sector has been low.

Over the past ten years, however, work has been done by authorities to increase the quality and quantity of swill feeding inspections and engagement with producers, with increasing focus on smallholders, hobby farmers and NESB producers in high-risk localities such as peri-urban areas. Despite this work, there is little known about NESB pig smallholder producers and their swill feeding practices are equally unknown. As a consequence, existing awareness and extension activities are less likely to reach and/or change the swill feeding behaviour of these smallholder producers.

Working with culturally and linguistically diverse communities (CALD)

Biosecurity necessarily involves identifying how people perceive their own situation and the environment in which they operate. Talking to NESB smallholders is critical to understand socially and culturally acceptable measures, what people can reasonably do, and the regulations, incentives, and penalties that may be appropriate to induce behaviour change.

In general the research literature suggests that a biosecurity communication strategy should appeal to the drivers that smallholders identify, such as good land management, being a good neighbour and cost management. The strategy should also use trusted, influential agencies and existing local networks to disseminate information (Gilmour et al., 2009, 2011).

Few research articles specifically address CALD engagement and biosecurity. However, general guidance for the public sector has been published (for example the 2014 guide *Engaging Culturally and Linguistically Diverse Communities. A guide for the Western Australian Public Sector.*)

Kancans et al. (2010) identified the following characteristics and requirements of CALD biosecurity engagement:

- Studies show that development of **trust in a one-on-one personal relationship**, particularly through bi-lingual agricultural officers, is the **single most effective means of communication and generating understanding** and practice change among growers of culturally diverse backgrounds.
- Financial pressures and viability issues limit a CALD individual's capacity to gain influence or participate in 'off-farm' activities such as industry boards and organisations. In addition, CALD

people did not perceive any benefits to joining these organisations, and these organisations and government institutions were seen by CALD people as not understanding their needs.

- **The lack of understanding of the needs of CALD people can translate into inappropriate \$ communication and engagement approaches** e.g. complex paperwork, funding grants etc.)
- **Recognition and understanding of the differences within and between CALD groups** (pertaining to their cultural needs, the industries they participate in and the varying institutional arrangements they operate under) are essential if engagement is going to be successful.
- Making participants feel comfortable and learning easier could be achieved through:
 - **involving interpreters**
 - **considering the location**
 - **using existing networks such as local multicultural council offices or ethnic social clubs to help engage with community leaders.**
- **Continuity** of projects over time has also been identified as a prerequisite if lasting change is to be brought about or if relationships that have been established as part of programs are to be maintained.

Project design and location

The following key policy assumptions shaped the project design—that:

- biosecurity is a shared responsibility, contributes to sustainable economic growth, and protects the environment and community
- empowering livestock owners and their networks to take responsibility for farm biosecurity is one of the best ways to ensure that a) they perceive biosecurity as their responsibility and b) have the knowledge and skills to be able to contribute to good biosecurity practice
- smallholder pig owners, particularly those from non-English speaking backgrounds, report less trust in government (and thus community champions are more likely to experience engagement success).

Work was undertaken in the Greater Sydney region of NSW from June 2017 to December 2018. Greater Sydney was chosen due to its high ethnic diversity. In 2016, 35.8% of people residing in Greater Sydney spoke a language other than English at home. Moreover, a large number of smallholder pig producers (116 in 2015) reported keeping a combined 3,866 pigs within the peri-urban interface—an area identified as at high risk for swill feeding in terms of likelihood and potential impact. The target NESB community groups for this work (Chinese, Korean and Vietnamese) were selected based on traditional pig-rearing practices and pork consumption.

Project objectives

Funded by a small grant, this project tested the efficacy of using community champions from an NESB community to facilitate engagement with NESB pig owners and those in the NESB community who could potentially provide swill (e.g. butchers, restaurants, food outlets).

Acknowledgements

This project was funded by the Department of Agriculture and Water Resources and undertaken in partnership by NSW Department of Primary Industries (NSW DPI) and Greater Sydney Local Land Services (GSLLS) as part of the NSW Peri Urban Biosecurity Program in consultation with Champions from Asian Women at Work (AWaW) and Ethnic Communities Council (ECC) and service provider mapping consultant from Redefining Agriculture P/L.

Abbreviations

ASF	African swine fever
AWaW	Asian Women at Work
CSF	Classical swine fever
DAWR	Department of Agriculture and Water Resources
FMD	Foot and mouth disease
EAD	Emergency Animal Disease
ECC	Ethnic Communities Council
EHO	Environmental Health Officer
EPA	Environment Protection Agency
GSLLS	Greater Sydney Local Land Services
LGA	Local government area
LLS	Local Land Services
NESB	Non-English speaking background
NSW DPI	NSW Department of Primary Industries
NSW FA	NSW Food Authority
PIC	Property Identification Code

1. Background

1.1. Demographics of Greater Sydney

The 2017 *.Idcommunity* Estimated Resident Population for Greater Sydney as being 5,132,355, with a population density of 4.15 persons per hectare (*.Idcommunity*, accessed 28 December 2018). Greater Sydney's language statistics show how culturally diverse the population is and the degree to which different ethnic groups and nationalities are retaining their language, with some 35.8% of people of NESB in 2016. Comparatively, 20.8% of the Australian population were of NESB at the same point in time.

Between 2011 and 2016, the number of people who spoke a language other than English at home increased by 21.2% (301,402 people), whereas the number of people who spoke English only increased by 3.1% (84,366 people).

Mandarin was the dominant NESB language spoken at home in the Greater Sydney region, with 4.7% of the population, or 228,985 people speaking this language. The additional NESB communities targeted in this study, Vietnamese and Korean, represented 2.1% (99,301 people) and 1.2% (57,789 people) of the Greater Sydney population, respectively.

Being able to communicate effectively with these communities is essential in promoting good animal health and biosecurity practices and maintaining our high animal health status.

1.2. Smallholder pig producers and pigs in Greater Sydney

The 2015 Local Land Services Annual Stock and Land Return identified 116 pig producers residing in Greater Sydney, accounting for some 3866 pigs. Figure 1 (next page) highlights the spatial location of pig owners in the Greater Sydney region over time from 2010 to 2015 inclusive based on annual stock and land return PIC data. At the time of this pilot study, only two producers on this database were identified (by cultural naming conventions) as being of Asian descent. However, given that many smallholders do not register their pigs, the number of pig owners from the Asian community may be much higher.

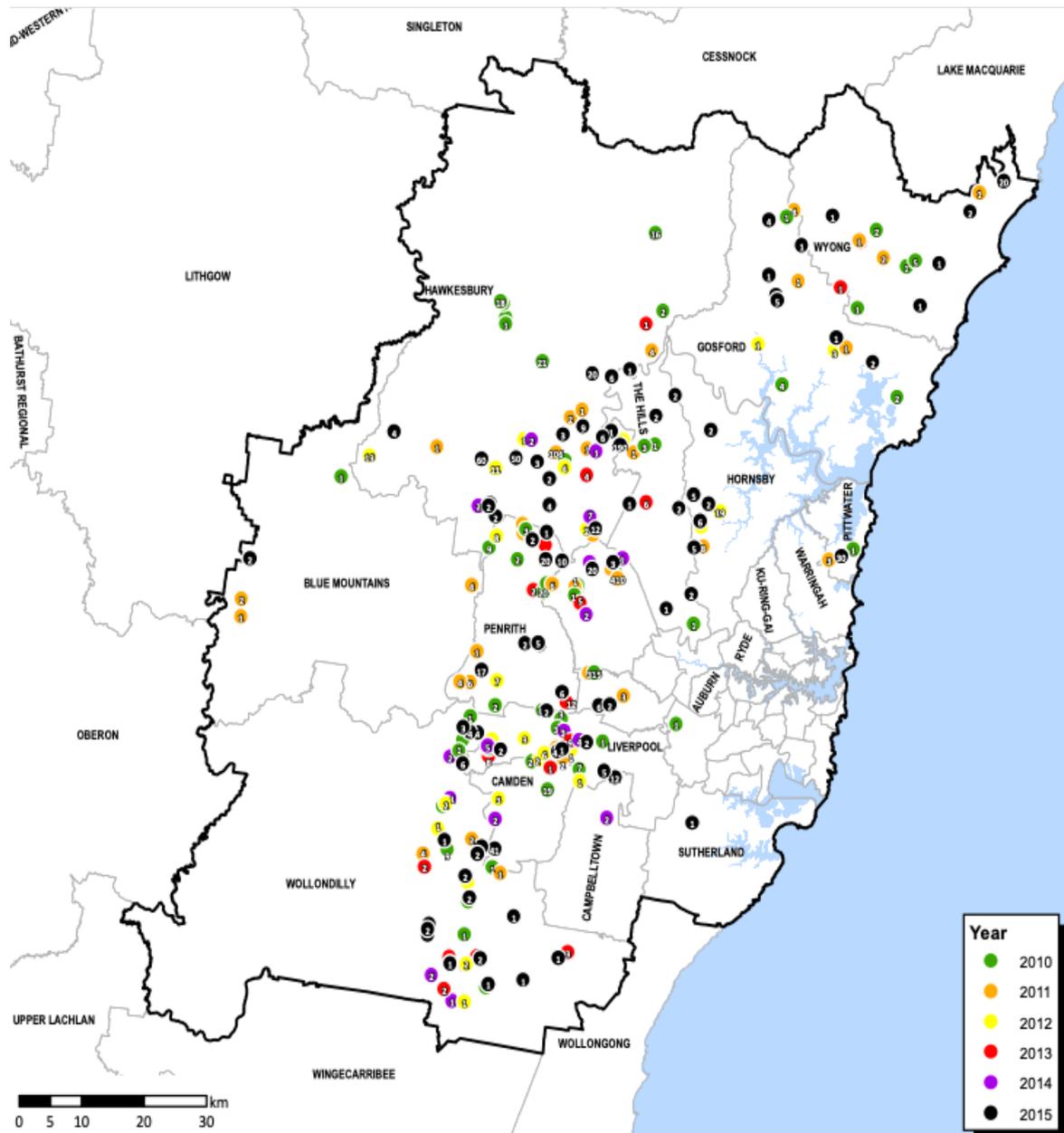


Fig 1. Distribution of known pig producers in Greater Sydney in 2016

1.3. Project activities

The work was carried out from June 2017 to December 2018 with the assistance of NESB Community Champions Asian Women at Work (AWaW) and Ethnic Community Council (ECC) and an agricultural consultant (Redefining Agriculture) to carry out service provider network mapping activities.

The key activities of this study have been divided into three categories to reflect the nature of work undertaken in meeting the objectives of the project, namely:

1. Identifying NESB champion and community networks
2. Service provider network mapping
3. NESB community engagement.

Specifically, the aims of each component include:

1. NESB champion networks

- a.) Identify and engage smallholder pig producers and potential suppliers of swill from NESB and demonstrate behavioural change as a result of activities.
- b.) Identify and locate NESB pig producers via their networks, that is, the food supply networks that use pork products to feed pigs within the Greater Sydney peri-urban area.
- 2.) Service provider network mapping
 - a.) Identify and map potential service providers to ascertain spatial touch points and key communication pathways to engaging NESB producers.
- 3.) NESB community engagement
 - a.) Create a database of NESB pig owner contacts and forums for regular communication
 - b.) Extend communication with those who could potentially provide swill (e.g. schools, restaurants, food outlets).

1.4. Methodology

The project utilised three main sets of information:

- information gathered by bilingual contractors about NESB food outlets, farmers and consumers (see 1.4.1)
- data about the online trade of pigs (see 1.4.2)
- spatial mapping of demographics, service provider networks and suppliers of waste food, pork or pig meat products (see 1.4.3).

In addition, information was gathered to support various extension and engagement activities (see 1.4.4).

1.4.1. NESB community champions

NESB Champions from the Greater Sydney Chinese, Korean and Vietnamese communities were engaged to undertake an exploratory survey and community engagement to assist with understanding NESB pig production networks, risk pathways and provide swill feeding extension.

Seven bilingual NESB community champions contracted by Asian Women at Work (AWaW) and the Ethnic Communities Council (ECC) worked in collaboration with the NSW DPI and GSLLS project team. As a first step, contractors identified and engaged NESB retail food outlets (such as butchers and Asian BBQ restaurants) and their waste contractors as a means to identify and glean details about local pig producers. They surveyed Chinese, Korean and Vietnamese food outlet businesses who either traded in pork products or utilised meat products as part of everyday business.

A questionnaire was administered and answers recorded in a simple excel database. Details captured included:

- contact person
- business name
- business address, suburb
- language group (Chinese, Korean, Vietnamese)
- business type (retail butcher, wholesaler, café, restaurant, bakery)
- source of pig meat (e.g. abattoir, wholesaler, butchers)
- collection of off-cuts and meat waste by individuals
- destination of waste products.

In addition, the bilingual contractors provided swill feeding and meat waste disposal extension materials.

This exploratory data gathering activity took place over a six-month period from October 2017 to March 2018. A follow-up debrief was held with the NESB champions, GSLLS and NSW DPI research team to glean further observations and develop a communication strategic plan for engaging and informing the targeted businesses and their suppliers, contractors and farmers.

In continuing to seek out NESB pig producers in Greater Sydney, NESB champions engaged with NESB vegetable growers at produce markets and on-farm, as these growers may either potentially provide a low-cost source of pig feed or grew pigs in conjunction with their vegetable operations.

The results of surveys and discussions are reported in sections 2.1 to 2.4.

1.4.2. Online trading of pigs

As part of an independent study¹, Greater Sydney Local Land Services and NSW DPI investigated the type and volume of livestock, plants, meat and exotic species being traded on various online platforms over a three-month period. Details of online sales were extracted via manual searches on up to six local and NESB trading platforms such as Gumtree, Taobao, Alibaba, Facebook Buy Swap and Sell, Farm Trader and T-mall with the following details recorded:

- date of detection
- item and quantity being sold
- location of listing (suburb, state, country)
- name of seller
- platform used
- additional comments.

Results of the analysis are provided in Section 2.6.

1.4.3. Network Mapping

A novel methodology was applied to further investigate the perceived and potential risk that (NESB) small holder pig owners present to Australian national biosecurity through the inappropriate feeding and husbandry of pigs and sale or supply of pig meat and pork products.

Using the network identification information provided by the bilingual consultants, as well as other information, data were generated and represented spatially using Geographic Information System (GIS) software. The layering of this information was used to examine spatial relationships and identify opportunities for further work or apparent gaps in current data.

Census data were collated from the 2016 survey for population, demographic, country of birth and proficiency in spoken English. These data were processed in Excel and then mapped in GIS software (Maptitude™) applied to the Greater Sydney area. The data mapped included:

- total population by postcode
- demographics for five ethnic populations (including the three key populations of Chinese, Korean and Vietnamese) identified as having a strong cultural association with smallholder pig ownership
- service provider networks
- registered pig ownership (identified against a property identification code (PIC)²)
- a cross-section of pig farming service provider businesses (i.e. vets and other livestock contractors)
- potential contact between suppliers of waste food (swill) and suppliers/processors of pork or pig meat products.

¹ Only the results relating to pig sales and pork products are opportunistically presented here as an example of an alternative network through which small holders, NESB and otherwise could be engaged in the future.

² Due to limitations from privacy of information, this data was only available for mapping by Local Government Area (LGA). Total numbers of pigs per LGA are represented only and mapped against the LGA boundary.

Spatial and relationship data were used to identify patterns, gaps and interactions to inform key communication pathways for productive engagement with NESB pig owners. In addition, land use regulations and the availability of residential land area supporting pig ownership were used to indicate likely suburbs/geographical regions for pig ownership.

Due to key cultural differences between demographics (including culture specific retail and community networks), each demographic was considered independently in the analysis.

Although it is likely that the available data for pig ownership in the Greater Sydney area are incomplete, mapping the known location of pigs (within a local government area) from LLS data facilitated the investigation of spatial relationships between service providers and pig owners.

Mapping of service providers

A cross section of service provider businesses were mapped and surveyed to determine and understand their contact (frequency and context) with pig owners. As NESB pig owners were not known to the project, this contact was generic, that is, all contact with pig owners was investigated. If contact or service provision with pig owners was occurring, further information was gathered to differentiate between English speaking pig owners and pig owners from NESB.

Service providers were identified as businesses and/or professionals likely to engage or have contact with pig owners through provision of resources (livestock feed, animal health products) or services (veterinary services, livestock health advice, husbandry or slaughter services).

For the area mapped, there were a large number of service providers. To refine this target group for administering surveys, businesses and individuals were selected for mapping based on their location and according likelihood of interaction with pig owners. This group was further refined to businesses falling within postcode regions with a large number of residents from the demographics of interest. Hence, the final group of businesses (“touch points”) was selected based on a combination of geographical, land use and demographic data.

Estimations were made and applied to the spatial data as “buffers” or “reach”, to determine the likelihood of contact between service providers and pig owners. The estimated “reach” of service providers was based on experiences of the researcher in veterinary service provision, interactions (professional and personal) with other service providers and a knowledge of the demographics, land use and geography of the Greater Sydney area.

Further work is possible using the information mapped to determine the demographic “in contact” with these service providers based on their geographical (or spatial) reach to local and surrounding communities. This analysis was outside the remit of this project, but could be undertaken to provide objective information regarding the size of the demographic that each service provider network could reach, particularly through the use of traditional passive communication materials (such as flyers and posters) at the points of contact.

Mapping contact points for food waste and for sale or distribution of pig meat products

The retail businesses contacted and surveyed by NESB champions were mapped by business address and an estimate of “reach” or contact based on what would be considered a reasonable or expected distance to travel to conduct activities associated with the collection of food waste or the sale or purchase of pig meat products. Four bulk suppliers were also identified and mapped by suburb for Chinese populations. It is estimated that these businesses would have considerably greater reach compared to a small business and so larger buffers were applied accordingly.

While outside the remit of this project, further analysis of these data could be undertaken to provide information regarding the size of the audience that each retailer could reach with extension messages.

Detailed results of the mapping work are available in Section 2.7.

1.4.4. Engagement and extension

The interactions with NESB restaurant owners and retailers (described in 1.4.1) were discussed with contacts in the Environmental Protection Agency (EPA) and with local government area (LGA) environmental health officers (EHOs). EHO field personnel were surveyed (on-line) to assess their individual interaction with retailers, and to determine their knowledge and understanding of biosecurity aspects of food production and sale (and whether this was discussed or investigated as part of their day-to-day activities). Results are reported in Section 2.8 of this report.

Educational materials on swill feeding were routinely provided to retail food outlets as part of the NESB champion network exploratory activity, with feedback sought on the usefulness of the materials.

NESB Champions (together with the GSLLS and NSW DPI project team) identified a number of key communication pathways including radio, print and social media that could be used to engage all sectors of the target NESB community. A review of currently available information and a gap analysis was undertaken by the research team. The gap analysis undertaken was based on the review together with consideration of recent changes within the pork industry, such as NLIS Pigs and the outbreaks of African swine fever (ASF) in China and Belgium in 2018. The engagement of NESB champions (the bilingual contractors) provided the opportunity to seek their input on messaging to ensure translated educational materials were correct and culturally appropriate, and delivered through the appropriate channels, thus minimising miscommunication and maximising impact.

The following network and communication channels were recommended and utilised by NESB champions and the research team to further engage with local NESB communities:

- WeChat (local and Chinese networks)
- SBS radio (Mandarin)
- Radio2000 (Sydney bilingual community radio)
- NESB newspapers
- Australian Chinese Growers Association (part of Hort-Innovation's VegNet).

Details about materials and engagement are provided in Section 3.

2. Results

2.1. NESB Food Outlet Networks

A database of 38 NESB businesses surveyed by AWaW and ECC was compiled over a six-month period to gain a better understanding of NESB food outlet networks. Data collected included the source of pork products and method of meat waste disposal. The demographics of the engaged enterprises are presented in Figures 2 and 3 below. Retail outlets were also spatially mapped (by NESB community) in Figures 12 to 14.

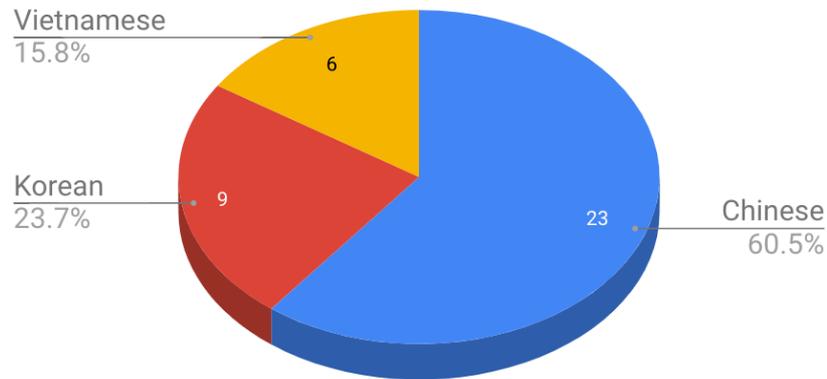


Fig 2. Demographics of NESB businesses engaged by AWaW and ECC

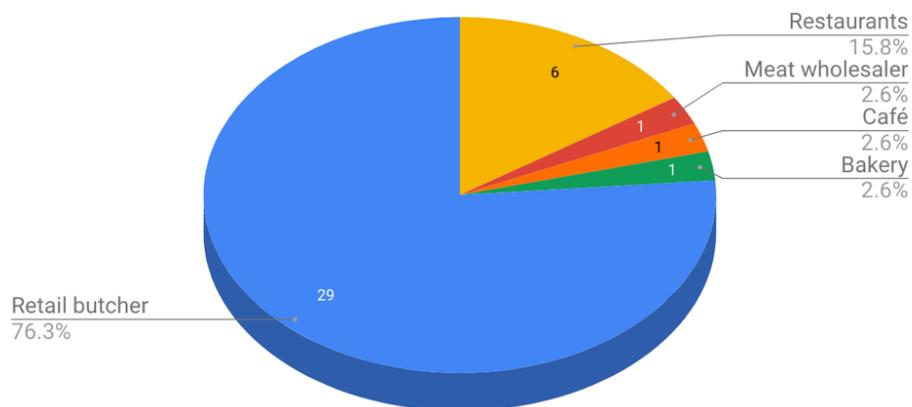


Fig 3. NESB businesses engaged by AWaW and ECC

2.1.1. NESB businesses handling pork products

What constituted swill feeding, as well as the risks and consequences of swill feeding, were explained (in the relevant first language) to the 38 Asian businesses surveyed. Information leaflets (also in the relevant first language) were provided to staff.

The materials (seen in Figure 4 below and in [Appendix A](#)) distributed included:

- a NSW Government “STOP feeding swill to your pigs” flyer
- a NSW Government “How NOT to handle food waste” flyer
- a NSW DPI Swill feeding Prime Fact sheet
- excerpt of NSW legislation on pig feed
- a letter to operators from GSSLs providing support of the NESB Champion’s activities.



Fig 4. NSW Government flyers “STOP feeding swill to your pigs” (L) and NSW Government “How NOT to handle food waste” (R)

During onsite visits to NESB retail food outlets, 13 of the 30 retail butcher/wholesale businesses provided details on the source of their pig meat. All sources were legitimate wholesalers and abattoirs, of which one was NESB (likely Chinese), based in Cabramatta in Sydney. The remaining 17 retail butchers and other food retail outlets did not provide any details on the source of their pig meat. NESB champions observed that many NESB businesses were reluctant to release details of their pig meat suppliers and waste disposal contractors despite the openness of champions in outlining the purpose of their visit. Officers from the EPA surveyed as part of the service provider investigation indicated they routinely collect details of waste disposed of by retail food outlets, providing an alternative method of seeking further information in the future.

The waste management practices of the 38 business are presented in Table 1. While 15 enterprises reported their food/meat waste was collected by a professional collection facility, five of these did not provide any details and a further two outlets (from the same business franchise) reportedly sold waste products (in addition to those that were professionally collected) to the Lai Shing Dim Sim factory in Marrickville and walk-ins.

Table 1. Meat waste disposal practices of 38 NESB businesses (restaurants/cafe, meat wholesalers and butchers) in Greater Sydney

	Disposal via red Council bin	Disposal via general waste bin	Waste collected, details provided	Waste collected, details not provided	Waste collected and sold
N =	11	12	8	5 [†]	2 [‡]

[†] One business, a Korean butcher, reported two of their four 10-litre bins of meat fat were collected for recycling.

[‡] Two Chinese retail butcher outlets (same owner) reportedly sold off-cut meat to walk-in customers and the Lai Shing Dim Sim factory

2.1.2. \$ NESB retailer attitudes and practices around the source and disposal of meat products

NESB champions provided numerous anecdotal insights into the attitudes, behaviours and practices around the source, trade and disposal of pig meat within NESB communities.

- Korean businesses are reluctant to talk to anyone outside their community
- Korean butchers are often already accomplished butchers in Korea and proud of their skills
- Korean butchers reportedly talk to each other often and have a common supplier of meat.
- Korean, Vietnamese and Chinese butchers indicated they are too time-poor to attend a workshop on waste disposal or biosecurity, even with incentives or benefits (e.g. a free copy of the retail meat diary and catering provided) and that businesses would only pay attention to information sent to them if it was directly related to legislative regulations and where penalties were imposed for non-compliance.

2.2. NESB community attitudes to pork and pork suppliers

NESB champions spoke to members of NESB communities and identified the following insights about trust and values regarding pork and pork suppliers:

- Meat from Korean butchers tends to be more expensive than meat from supermarkets but the community are happy to pay for it. Moreover, Koreans trust meat from Korean butchers more than from supermarkets as meat from Korean butchers is considered to be higher quality than from supermarkets. This links with the idea that Korean butchers are accomplished and that their clients have trust in their product.
- Meat from Chinese butchers reportedly tends to be cheaper than from supermarkets and some members of the community are suspicious that the quality is not as good or that there is something wrong with it and prefer to buy from supermarkets. There is an obvious link between price, quality (food safety) and perceived value for money. These attitudes were reinforced through public reports of meat with green bone, or local butchers being named and shamed by the media for illegal activity or food safety breaches.
- Community members reported that, if prompted to do so by campaigns or authorities, they would ask their local butchers to provide proof of where their meat is from to ensure it is of good quality.

2.3. NESB community attitudes to swill feeding

NESB champions learned that while the Chinese community are aware that swill feeding occurs in China, members don't think the practice carries the same risks in Australia because Australian meat is of a higher (safer) quality.

2.4. NESB farmers' knowledge, relationships and practices

On 6 December 2018, a Chinese and Vietnamese NESB champion, together with research officers from GSLLS visited Flemington Market to ask vegetable growers about possible pig producer linkages and swill feeding, and to provide translated swill feeding materials. They reported that:

- most Asian vegetable growers reported knowing what swill feeding was and the associated risks
- Asian vegetable growers did not know of any Asian pig owners or people who knew Asian pig owners
- while some Chinese vegetable farmers have chickens and ducks, none had pigs
- Chinese vegetable growers said they used vegetable waste as compost on the fields and that it was not fed to pigs

- vegetable waste from the Flemington markets is taken to a refuse depot at Green Point but a number of market staff reportedly collect waste vegetables to feed to livestock on their smallholdings. (It was not clear whether the depot processed solely vegetable waste or if there was opportunity for contamination, an area for further examination.)



Fig 5. NESB champions from AWaW and GLLS research officers speaking with NESB vegetable growers at Flemington Markets

On 16 December 2018, 22 Chinese and Vietnamese women from Asian Women at Work visited three farms, a vegetable farm, flower farm and egg farm in Kemps Creek and Cecil Park in Western Sydney. NESB champions distributed translated still feeding communication materials and asked the NESB farm owners about the disposal of waste vegetables and food, and whether they were aware of any pig farming or sales in the area.

The vegetable farm owner said they threw away food waste and used the vegetable waste for compost.

During the farm visits, the husband of the vegetable farm owner anecdotally recalled an event from around six years ago, when purchasing pork from a pig farmer around the Springwood-Penrith area at 3am. Although he used the word “market”, the market reportedly closed before sunrise and was an individual farmer. The vegetable grower’s husband reported that “the pigs were not registered and they were sold in the market illegally”. No further details were provided about the pig owner or this activity that took place some six years prior.

In addition, the owner of the flower farm said he knew someone who had pigs at their farm around the Leppington area. These pigs were also reportedly not registered and were sold in the market “illegally”. No further details about the pig producer were disclosed.

Lastly, during the farm visits, the NESB champions were made aware of a factory that sells pork and other meats in Spring Valley Rd, Leppington. Again, however, no further details were provided. Project staff have been unable to locate the facility and further investigations are being made.

2.5. \$ Presence of NESB pig owners at abattoirs and saleyards in Greater Sydney

Greater Sydney Local Land Services staff contacted Camden livestock saleyard and Wollondilly abattoir staff to try and identify the location of NESB producers and determine the level of activity within the local pig industry. Camden saleyards auction pigs weekly on a Tuesday, while Wollondilly abattoirs in Picton are one of the few domestic abattoir plants left in NSW that process pigs.

While there is historical evidence of a solid sucker trade at Camden saleyards, NESB producers from the communities targeted in this study do not frequent these live pig auctions, nor did they have any interaction with abattoir at Wollondilly.

The absence of NESB smallholder pig owners at live auctions or abattoirs suggests that any who do exist in the region do not share points of contact with the local pig industry.

2.6. Online trading of pigs and pig products

Over a three-month period, over 312 live pigs were detected as being offered for sale in Greater Sydney across four separate online platforms. This represented around 5.5 live pigs advertised per sale for the 56 domestic adverts detected during the online trading pilot study period. The proportion of live pigs by platform and pig related sales by origin are shown in Figs 6 and 7, respectively.

Eleven advertisements were recorded for pig trotters, knuckles, noses, heads and other bone meat. These products detected during the pilot study were available from eight Chinese provinces for transport to Australia. Sales were advertised on two main online platforms, T-mall (27.3%) and Taobao (72.7%), both subsidiaries of Alibaba. All 11 Chinese meat advertisements had over 100 items available. Pig meat advertised from four provinces (in six advertisements) had confirmed cases of ASF prior to the advertisements being recorded. A further three sales (from an additional two provinces) reported positive cases of ASF within two weeks of the advert being recorded. The remaining two advertisements originated from Shandong province, which enacted strict pig movement controls and at the time had reported no cases of ASF.

The online trading of biosecurity matter within the Greater Sydney region suggests a novel engagement pathway—with online NESB traders of pigs and pig meat. Further in-depth investigation of NESB platforms (as identified by the NESB champions) may also be useful for identifying smallholder NESB pig producers and assessing their compliance with state biosecurity legislation.

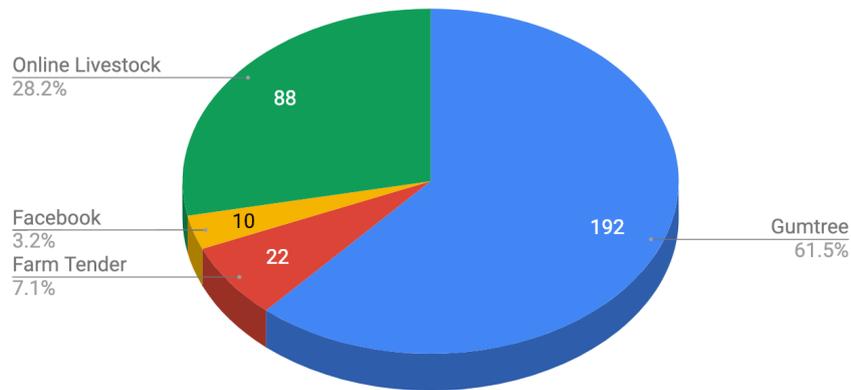


Fig 6. The proportion (%) of live pigs traded domestically online by online platform (N=56 sales)

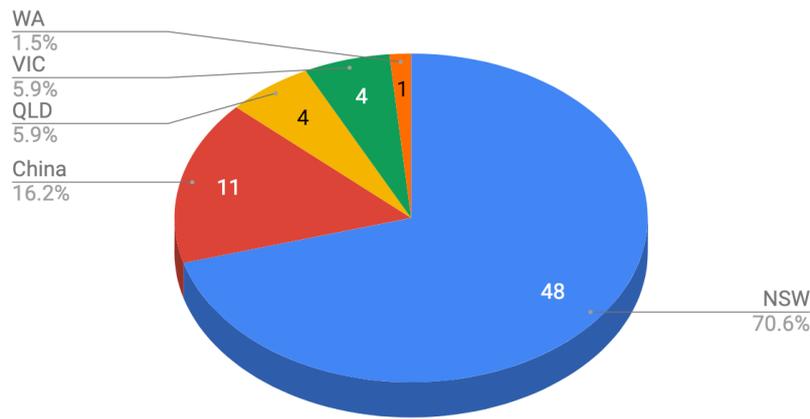


Fig 7. The proportion of pigs and pork products traded online by state or country of origin (if not Australia) (N=67 sales total)

2.7. Geographic information system mapping

Mapping identified geographic areas of interest for five ethnic groups, where the largest groups of NESB population were resident. These suburbs had either a large number of people identifying as being of a particular culture/origin as well as suburbs with relatively high numbers of people identifying as having no or low proficiency in spoken English.

Demographics were mapped by ethnicity (based on country of origin) as blocked areas of shading within suburb/postcode boundaries. NESB populations within those postcode areas are captured as an additional layer scaled to represent the proportion of NESB residents per postal district (% of cultural population identifying as NESB). The map below (Figure 8) shows the appearance of this data for the Chinese community in the Greater Sydney area. (Appendix B provides maps of Korean, Vietnamese, Maltese and Filipino communities in the Greater Sydney area). Figure 9 shows the Chinese NESB population in inner Greater Sydney.

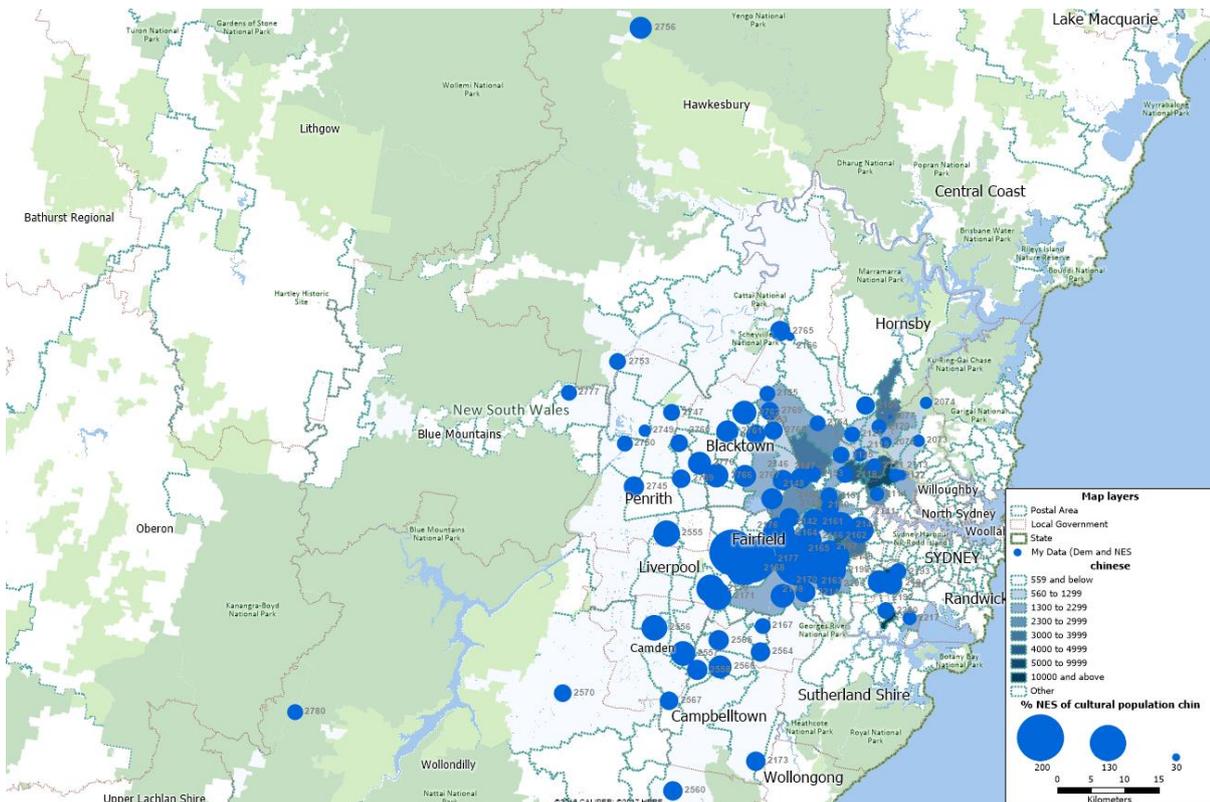


Fig 8. Chinese demographic by postal district and proportion of demographic identifying as NESB – Greater Sydney

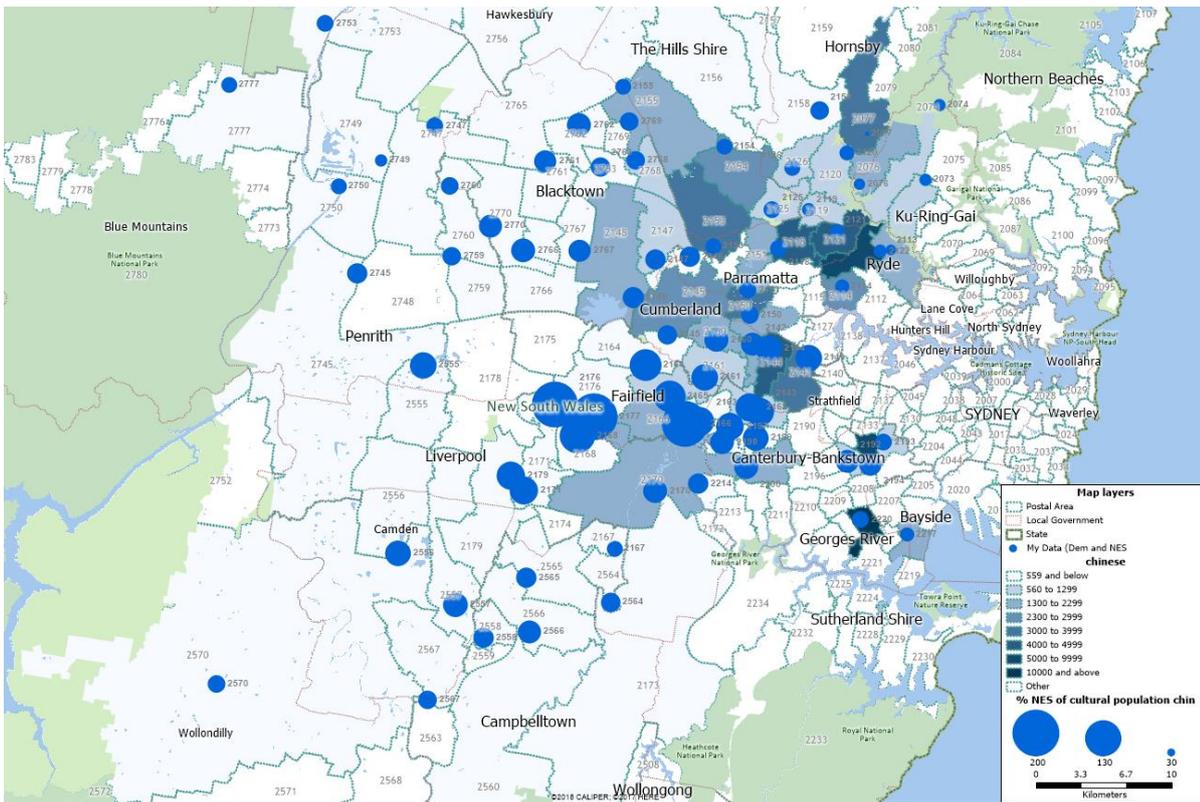


Fig 9. Chinese demographic by postal district and proportion of demographic identifying as NESB – North Inner Greater Sydney

It is apparent that there are demographic “hot spots”—areas which have a relatively higher proportion of the population who identify as NESB (visually depicted as the largest blue circles on the maps). Each demographic (Chinese, Korean, Vietnamese, Maltese, Filipino) has a different distribution, producing both demographic and NESB “hotspots” in different suburbs.

For all demographics, the majority of residents identifying as a particular ethnic group are mostly located in the inner suburbs, in relatively high-density housing areas. The proportion of NESB populations by suburb differ greatly, with no clear association between total population, proportion identifying as NESB and geographic location.

Of importance are those suburbs which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership. These suburbs were selected for identifying, mapping and surveying key service providers as potential points of contact for NESB pig owners. Further investigation of NESB communities, networks and associations within these suburbs is also recommended.

From the maps above (Figures 8 and 9), it is apparent that there are a number of suburbs where, although the total Chinese population is in the mid-low range, the proportion of the population identifying as NESB is at least 50% of that total, and the land use and geography data supports pig ownership. This can also be seen in maps for other demographics to varying degrees (Appendix B).

Figure 10 shows pigs registered in relatively high-density areas, with significant demographic and NESB populations of interest.

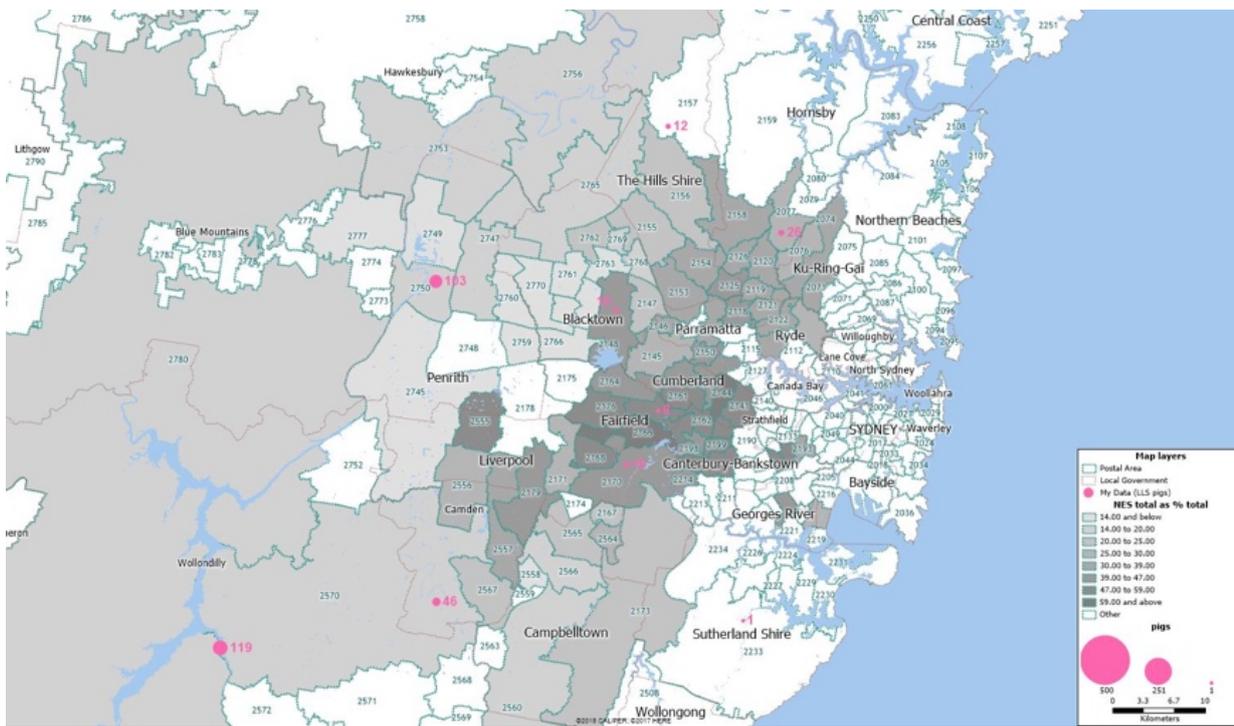


Fig 10. Total NESB population for five ethnic groups and registered pig ownership

2.7.1. Pig populations and land use

Data confirming pig ownership were limited to that available from LLS and comprised 11 locations (10 of which could be mapped) that were identifiable only by local government area (LGA) due to the anonymity of data. Although this presents as a relatively limited data set, it facilitated extrapolation of any relationships between geography, land use, demographics and service provision in the mapping.

Comprehensive land use data for Greater Sydney are available and could be used to more accurately predict the likelihood of pig ownership based on land area available and suitability for large livestock ownership. However, it was determined this was outside the remit of the project in its current form and so informed judgements were applied to determine areas most likely to be used for keeping pigs based on proximity to high density housing, average house block size, the availability of larger areas of residential land, and knowledge of the Greater Sydney area.

The data confirmed that pigs were being kept within relatively built up and densely populated areas of Greater Sydney, including suburbs with both high numbers of demographics of interest in this project and those identifying as NESB within these populations. This includes areas such as Fairfield, Blacktown and Canterbury where approximately 30 to 50% of the combined populations of interest identify as NESB and moderate numbers of pigs are being kept and have been kept historically (19, 8 and 19 respectively for 2015 LLS data). This identified key “hot spots” for further investigation of any relationship or contact with service providers in those areas, and differences between key areas, and could further inform future activities for NESB champions or advocates.

2.7.2. Service provider networks

Fifteen veterinary businesses and seven other businesses providing services and products to livestock owners and pet owners (feedstuffs, husbandry and animal health advice and products, husbandry contract services, livestock sellers) were surveyed by telephone (see Appendix C for details). Each business address was then mapped relative to pig populations and demographics of interest determined as potential “hot spots” for contact or activity with NESB pig owners (see Figure 11).

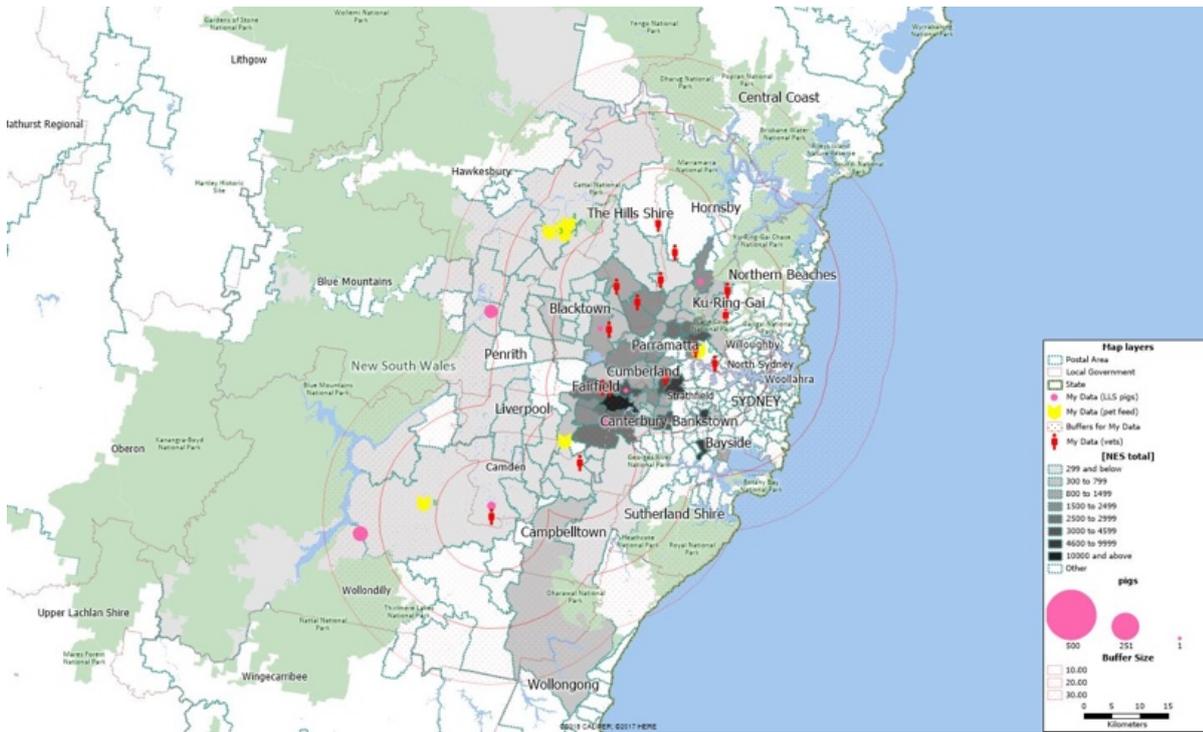


Fig 11. Veterinary and auxiliary service provider location and potential interaction with pig owners in Greater Sydney

Buffers of 10km, 20km and 30km were applied to the locations of the veterinary businesses identified (shown as a red person on the map and legend). All identified pigs (LLS data) fall within these buffer zones and therefore vets, if contacted, could adequately service known pig populations. However, survey data indicated that only three of these 15 veterinary businesses serviced pigs at all, and then only rarely (two or three times per year). Two of these businesses were located in the north and north-west of the Greater Sydney area and one was located in inner Sydney and reported serving small numbers of pet pigs, commonly kept in high density housing.

No other veterinary businesses serviced pig owners, nor had received calls requesting advice about pig health, husbandry or feeding. The other service providers (identified as “pet feed” and a yellow symbol on the maps and legend) did not service pig owners regularly. Only one business, located in the south west, stocked products for pigs. The business reported being asked only rarely to provide services, products or support to pigs and pig owners.

A further 20 veterinarians received the on-line survey but did not respond (mainly due to challenges in administration of the survey, timing and constraints due to project timeframe). However, anecdotal feedback from these 20 veterinarians, plus information collated through surveys conducted in another project at the Australian Veterinary Association conference in 2018, identified that even veterinary businesses servicing livestock owners of other species (sheep, cattle, goats and alpacas) rarely received enquiries about pigs. Nor were these veterinary businesses asked to provide advice or services to pigs and pig owners. No businesses surveyed reported providing services specifically to NESB pig owners.

2.7.3. \$ Contact points for food waste and for sale or distribution of pig meat products

Retail outlets (N = 43) including the butchers, bakeries, cafes and food (pig meat) suppliers and four bulk buying groups with pick up points within the Greater Sydney area (identified by the NESB champions) were mapped by business address. The owners of the retail outlets were Chinese (28), Korean (9) and Vietnamese (6). As Maltese and Filipino demographics were added to the project as part of the service provider mapping component which occurred after the initial survey work conducted by NESB champions,

no outlets were included for these groups. However, the same process could be applied to this data were they to be made available.

Maps below for Chinese, Korean and Vietnamese demographics represent the business location and areas of transport reach to and from these businesses (for retail activity and collection or supply of pig meat, waste and other related products). The location of pigs (LLS data by LGA) is also presented to demonstrate any potential spatial interactions between pig owners and these retail outlets. (Figures 12-14).

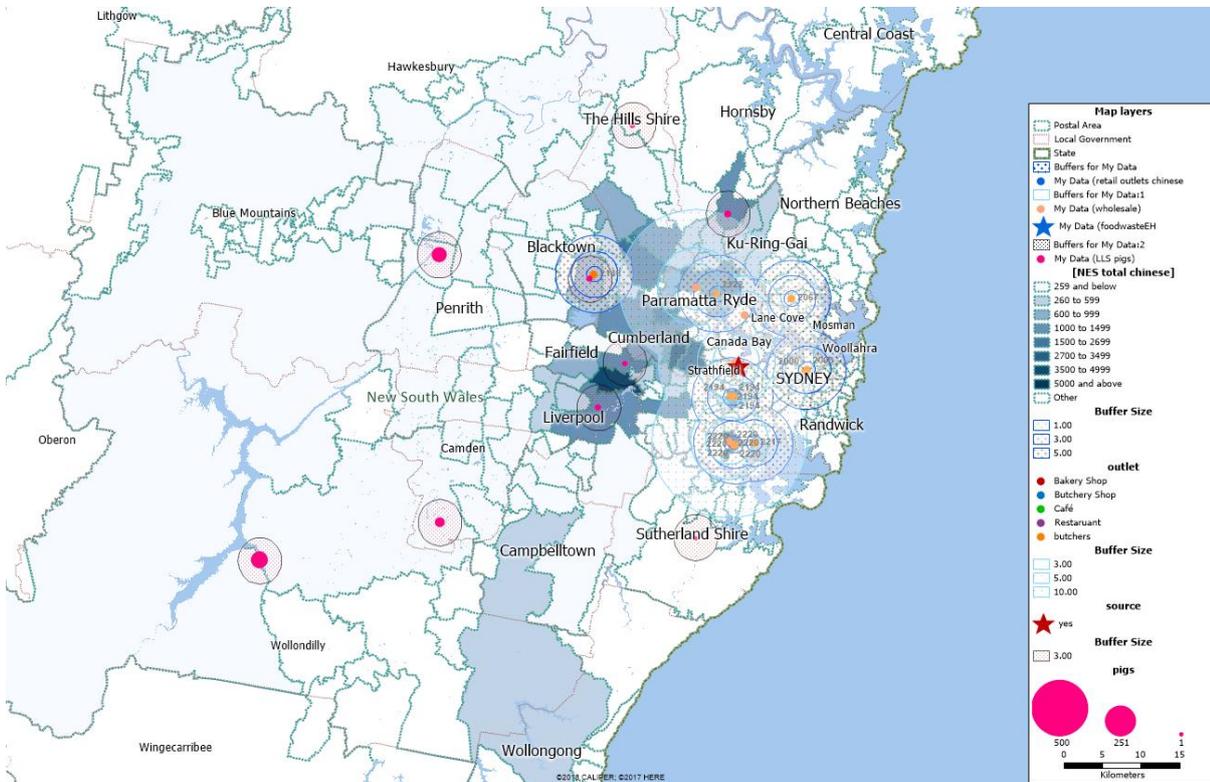


Fig 12. Retail outlets with buffers for expected trade/reach, pig population data (LLS) and Chinese NESB demographic

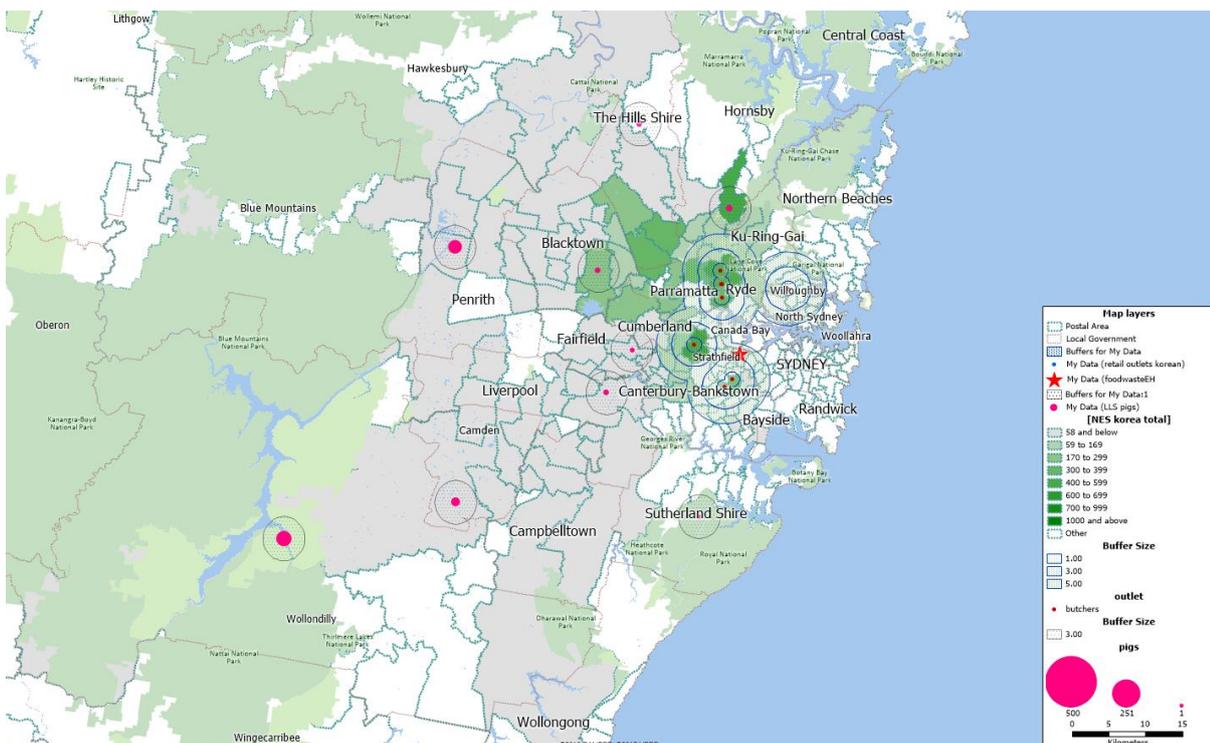


Fig 13. Retail outlets with buffers for expected trade/reach, pig population data (LLS) and Korean NESB demographic

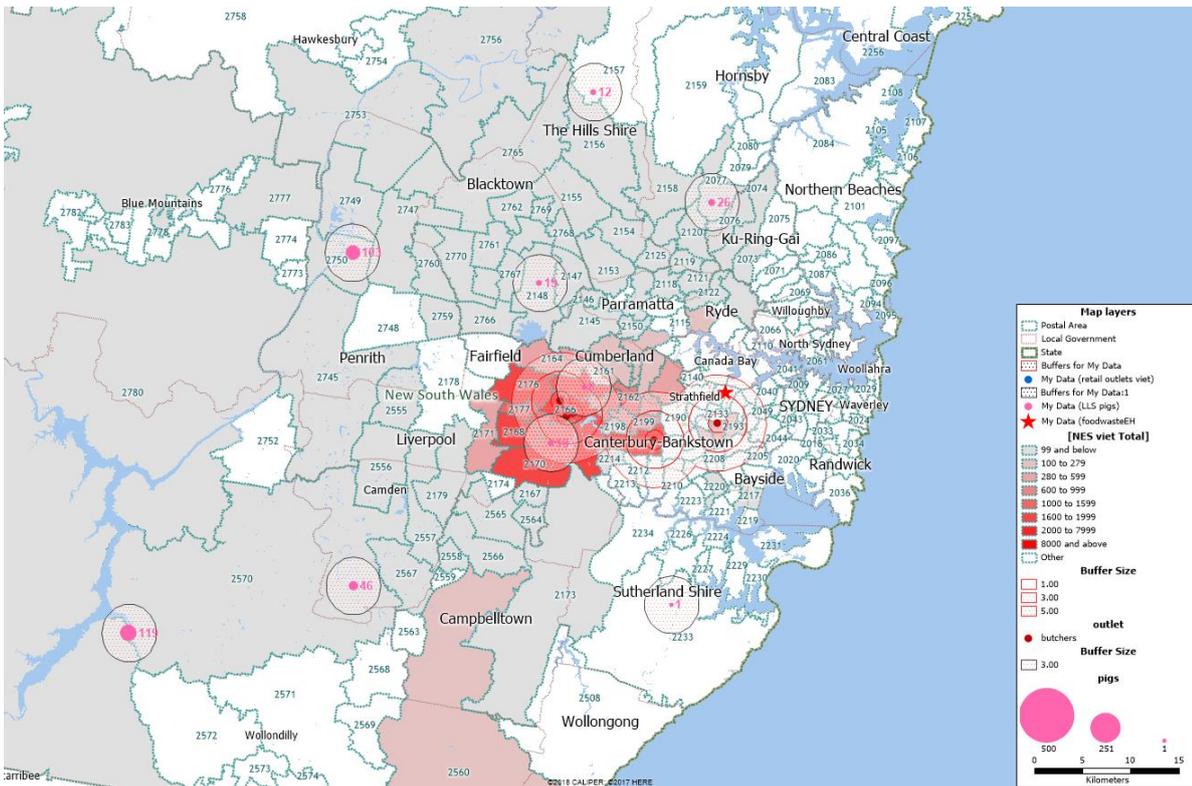


Fig 14. Retail outlets with buffers for expected trade/reach, pig population data (LLS) and Vietnamese NES demographic

Given the findings from the NESB champion engagement with local NESB food businesses, it appears that the collection of food waste by pig owners is not common, or was not identified as taking place in the businesses surveyed. Hence, for these businesses, it is unlikely that there is much interaction between retail food outlets and pig owners. However, the mapping demonstrates a potential spatial relationship between the identified businesses and known pig owners and the demographics of interest. The spatial data also clearly identify that there are suburbs (e.g. Chinese NESB south and south east of Fairfield, Korea NESB, north and north west of Paramatta) with a high density of NESB residents, where pigs are registered, and retail outlets have not been identified or surveyed. If an access radius of 3km is also applied to the known pig populations, it is clear that some of the pork retail outlets (potential suppliers of swill) are accessible to these pig populations. Suburbs with a high proportion of NESB residents, and where retail outlets as potential suppliers of food waste have not been surveyed, should be investigated as a priority.

2.8. EHO staff knowledge about pork and pig meat businesses

A survey (see Appendix D) was administered online to all EHO staff within Greater Sydney identified as having contact with owners of retail pork outlets, or businesses handling, selling or distributing pig meat or related products. The survey received responses from seven personnel. This low rate of response was attributed to the time of year and timeframe over which the survey could be made available.

The responding EHOs operated in the Central West (N=1), the North Coast (N=2), the Hunter (N=1), Riverina (N=1) and Greater Sydney (N=2).

EHO staff identified pork retailers and related businesses in 26 postcode districts. Unfortunately, only two of the postcode districts identified by survey respondents were in the Greater Sydney area. However, in one of these districts a **potentially high-risk retail source of swill was identified** (described below).

The Hunter officer revealed that a local major supermarket collected their deli waste in bucket which was then given to a farmer. The retail outlet was advised to stop this practice if the deli waste was being used by farmers to feed pigs or other large livestock.

The business was not previously identified nor surveyed as part of the NESB champion food business survey component of this project (the business is identified as a red star in figures 6 to 8). Thus, further collaboration with EHO personnel may reveal further valuable information.

In addition, a North Coast officer indicated that food deemed as waste by a retailer had been set aside for composting as opposed to disposal via council or EPA schemes.

North Coast and Greater Sydney officers also indicated they had dealings with restaurant owners who sourced pig meat for preparation and sale in their restaurants. Additionally, the two Sydney officers reported having evidence that pig meat at these outlets may at times be sourced from other than certified sources:

“I've had a few reports that there is someone walking around to different food outlets with a suitcase of meat for sale which (outlets have) declined and reported. It's possible some food outlets have struck a deal with this person. . .” [GS officer]

Officers from Greater Sydney, Hunter and Riverina indicated they had previously requested to see invoices or other evidence of the source of produce and meat sold in restaurants or food outlets, while other officers indicated that this practice forms part of their annual food inspection process.

No responding EHOs reported investigating a complaint related to the collection or redistribution of food waste.

3. \$ NESB community engagement and communications materials developed

3.1. Social media and radio engagement

A number of communication activities were undertaken by AWaW as part of this project. This included three radio interviews with SBS and Radio2000 to highlight the risks of swill feeding and what the NESB community could do to help prevent the introduction of ASF to Australia. There was an appeal to NESB listeners to not bring pork products to Australia in each of the three interviews which included:

- A telephone interview with SBS Mandarin was aired on 3 January 2018, discussing pig health and swill feeding. This program was also published on the SBS Mandarin WeChat Public Account (see Appendix E);
- A second (5 min 48 second) SBS Mandarin Radio interview was conducted with AWaW by Lucy Chen on 26 November 2018 and broadcast on 3 December 2018. A transcript is presented in Appendix E.
- The third radio interview at Radio 2000, a Sydney community-based bilingual station. The interview was conducted on 06 December 2018 and broadcast on 07 December 2018. The 8 min interview was conducted by Michael Zhou with the interview available via WeChat with the transcript is presented in Appendix E.

During the engagement phase of the pilot study, the AWaW champions proactively monitored any news or chatter around pigs and pork and spotted that *Sydney Today* had a story “Why the pork tastes so disgusting in Australia? Finally, we got the reason!” published on 9 July 2018 online at www.sydneypost.com/content-101828101930026.

Discussion about the topic revealed that NESB community members wanted to know where their pork came from, and were concerned about pig welfare. The discussion also described the method of pig slaughter in Australia and explained the presence of boar taint (“smell”) in pork.

3.2. Face-to-face engagement

Following discussion with members of the Chinese community, the AWaW reported a number of pig and pig meat-related experiences, including:

- pork from a butcher shop which looked fresh but when the meat was cut the colour of the meat was green around the bone
- expired meat from a butcher shop being collected to make soap
- observing at a pig farm that chickens and pigs were being fed rotten bread. Details of the pig farm being discussed were not disclosed.

NESB champions recommended that further face-to-face engagement could be facilitated by engaging community workers (via a train-the-trainer program) and/or utilising existing union networks to combine biosecurity extension to NESB businesses with union activity. Other community initiatives such as the EPA’s Bin Trim program could provide opportunity to further engage with NESB communities.

3.3. Traditional print media

An advertisement to highlight the importance of preventing the introduction of ASF to Australia was designed by NSW DPI for publication in NESB print media (Fig 15).

This advertisement was translated and published as quarter-page advertisement in the *Australian Chinese Daily*, *Korean Herald* and *Chieu Duong* on the Australia Day weekend (26 January 2019) and prior to the Chinese New Year, to tie in with Year of the Pig festivities beginning 5 February, 2019. See Appendix F for translated advertisements.

**DO NOT
PACK PORK**

China has recently had an outbreak of African swine fever
IT IS DEADLY FOR PIGS

Pork meat or pork meat products from overseas could introduce serious exotic diseases to Australia that could devastate our valuable livestock industries and stop our meat products being exported.

**Enjoy the delicacies
while you're travelling
but **DON'T BRING
THEM INTO
AUSTRALIA****

Examples include:

- pork
- ham
- salami
- sausage
- small goods
- jerky

STOP THE SPREAD!

For more information visit
www.dpi.nsw.gov.au

NSW
GOVERNMENT

Department of
Primary Industries

15083 10/18

Fig 15. "Do not pack pork" NESB print advertisement translated for the *Australian Chinese Daily*, *Korean Herald* and *Chieu Duong*

3.4. New channels of communication

A review of engagement materials and channels was prompted by recent changes within the Australian pig industry, such as NLIS Pigs, and the outbreaks of ASF in Europe and Asia. Two new channels were used to communicate biosecurity messages; a WeChat account targeting potential Chinese travellers to Australia and a program encouraging the responsible disposal of food waste by food retailers.

NSW Government has two Trade & Investment offices in Guangzhou & Shanghai respectively with both having official Chinese WeChat³ accounts. In addition, Austrade and Destination NSW have official Chinese WeChat accounts in China and provide an additional avenue for engagement with the Chinese speaking community. In early October 2018, NSW DPI placed messages around “Do not pack pork” to Australia via Destination NSW’s WeChat account in response to the ASF outbreaks in occurring in China to try and prevent pork products from being brought into Australia illegally and being fed to pigs here (Fig 16). Destination NSW was targeted to engage inbound Chinese tourists (see Appendix G). This message will be repeated in preparation for Chinese New Year celebrations on February 5, 2019.



Fig 16. The social media tile (left) was converted into a notice (right) to fit the WeChat format and translated into simple Chinese.

In addition, the research team was able to capitalise on swill feeding messaging that was being redeveloped for NSW retail and commercial food industries around the “responsible disposal of food waste” (Fig 17). Materials were translated into simple Chinese, Korean and Vietnamese and shared with the NESB champions for distribution to known NESB retail and commercial food networks (see Appendix H). This opportunity presented a new network via Local Government EHOs who had only been engaged for food safety and compliance matters up until now. All EHOs were sent an electronic direct mail outlining the risks of swill feeding, the legislation, penalties and printable materials they could share among their networks, contacts and colleagues. Further engagement has been made with EHOs via the NSW DPI Local Government Unit.

³ WeChat is a multipurpose app that is used extensively in China as well as the Chinese-Australian community. Launched in 2011, with more than 600 million downloads, and over 300 million active users that engage with the app daily, WeChat offers messaging, video calling, voice calling, Emoticons/stickers, QR coding and capture, gaming, geolocation searching (Shake), blog posts (Moments), brand channels and an e-commerce platform, TenPay (a Chinese version of PayPal) where users have access to a real-world bank account to add credits and conduct transactions via the app (<http://www.whatiswechat.com/>).



Dispose of your food waste responsibly

Businesses that prepare and/or sell food have a responsibility to dispose of food waste appropriately. It is illegal to provide a person with, or access to prohibited food waste to feed pigs or ruminants.

Prohibited food waste should be placed in a garbage bin for collection by your local council or commercial waste service for disposal in landfill or composting at a recycling facility.

Report the feeding or supply of prohibited food waste for pigs or ruminants

If you suspect that prohibited food waste is being supplied to pig or ruminant owners, or pigs/ruminants can access or are being fed prohibited food waste, contact the **NSW Department of Primary Industries Biosecurity Hotline on 1800 680 244** or the **Emergency Animal Disease Watch Hotline on 1800 675 888**. Reports will be treated as confidential.

Penalties

The feeding of pigs and ruminants is regulated under Part 2, Division 9, of the Biosecurity Regulation 2017 and penalties may apply under the *Biosecurity Act 2015* for:

- feeding prohibited food waste to pigs or ruminants
- allowing pigs or ruminants to access prohibited feed
- storing prohibited feed at a place where one or more pigs or ruminants are kept
- collecting and/or supplying prohibited feed to be fed to pigs or ruminants.

For more information

Contact the **NSW Department of Primary Industries Biosecurity Hotline** on **1800 680 244**.

For more information on swill feeding, visit www.dpi.nsw.gov.au/animals-and-livestock/pigs/pig-nutrition/swill-feeding

For more information on RAM feeding, visit www.animalhealthaustralia.com.au and search Australian Ruminant Feed Ban.

EMERGENCY ANIMAL DISEASE WATCH HOTLINE
1800 675 888



Department of Primary Industries

Responsible disposal of food waste



Information for food outlets

These restrictions apply to ALL pigs and ruminants, including pets and stock kept by hobby farmers



Food waste containing meat or other mammalian by-products must not be fed to pigs or ruminants (cattle, sheep, goats or deer). This food is prohibited feed commonly known as 'swill' for pigs and 'Restricted Animal Material' (RAM) for ruminants.

Feeding swill and RAM is illegal in all states and territories of Australia. Feeding swill may lead to serious diseases in pigs including foot and mouth disease and African and classical swine fevers. RAM may contain agents that cause fatal brain diseases such as mad cow disease.

Australia is currently free of these diseases but food waste containing these pathogens may be illegally imported into Australia undetected by quarantine. Banning the feeding of prohibited food waste to pigs and ruminants provides an important defence against these and other serious livestock diseases to Australia.

Food that must NOT be supplied or fed to pigs and ruminants

Pigs or ruminants must not be fed or given access to food waste containing meat, meat products, illegally imported dairy products not of Australian origin, or anything that has been in contact with these items.

Examples include table scraps, meat pies, sausage rolls, bacon and cheese rolls, salads with bacon pieces, deli meats and untreated used cooking oils and fats.

Anything that has been in contact with swill or RAM through the collection, storage or transport in contaminated containers such as meat trays and takeaway food containers, must not be fed or given access to pigs and ruminants.





Fig 17. Responsible disposal of food waste brochure in English for food outlets (See Appendix H for Chinese, Korean and Vietnamese translations, respectively)



Fig 18. Infographic highlighting the flow of infected material and the consequences of swill feeding in the introduction and spread of African swine fever

3.5. \$ Tailoring swill feeding and biosecurity communications for NESB communities

Through interactions with the target communities, NESB champions were able to provide valuable insights into messaging and biosecurity material design, and appropriate communication channels.

NESB champions thought existing swill feeding fact sheets and flyers were too long and complex and were unlikely to be engaging for NESB communities. The research team designed an infographic to demonstrate how swill feeding can transmit disease in pigs, and the impact on the Australian pork industry. The current outbreak of ASF overseas was used (opportunistically) as an example of a pig disease transmitted through swill feeding. A flyer with an explanatory infographic (see Figure 18) was received positively by NESB champions who thought it useful as an educational tool.

The flyer has been distributed at agricultural shows and will become part of the Local Land Services pig production information kit provided to producers during routine swill feeding inspections.

3.5.1. Communication channels for NESB communities

Engagement materials should be simple and succinct and have a clear message, so that the audience understands what they should or should not do, and the consequences of action or inaction. Further engagement pathways identified by the NESB champions that could be utilised included:

- Engaging trusted public media networks such as *SydneyToday*. NESB champions reported that many Chinese community members local to Greater Sydney had little English and relied heavily on reading *SydneyToday* news (in Mandarin) to find information on tourism, car purchases, house renting, food and more. The online media platform can be read from WeChat by joining its WeChat account via its QR code.
- Professional associations such as the Australian Chinese Growers Association, and marketplaces such as Flemington and Homebush markets could be utilised to engage with known industry service providers where interactions exist.
- NESB radio such as SBS radio in Mandarin, Vietnamese, Filipino, Korean and Cantonese
- Continuing to engage with high schools where all year 7 and 8 students have a requirement to learn agriculture and then continuing with agricultural specific schools such as James Ruse Agricultural High in north/north-west Sydney. These schools often have high numbers of NESB students with the potential for possible flow-on effect to farming families. There would be an opportunity here to link NESB champions with the Sydney Agricultural Teachers Association to promote understanding and best practice pig keeping.

3.5.2. Korean community communication channels

The Korean community reportedly use Facebook as there are not the same social media restrictions in Korea as for China. Younger generations tend to use Facebook and Instagram, and are less keen to use Korean language apps the longer they have been residing in Australia. The population of Facebook users in the Korean community has rapidly grown in recent years, with a growing number of elderly community members using it. A poster or social tile of information is most readily sharable via Facebook.

Of significance is Kakao, South Korea's largest mobile messaging app operator. It is an integrated mobile lifestyle platform company with eight key services including online portals (news), communication (KakaoTalk) via group chats and private messaging, social content (KakaoFriends), e-commerce (online shopping), gaming, financial technology (e-pay), mobility and lifestyle and social impact (fundraising).

KakaoTalk offers various methods of social interaction—direct communication, open chat rooms, story boards, online searching, and meeting boards to organise social and business calendars. Kakao Talk also provides business services online.

Like WeChat, Kakao is a one-stop shop for the Korean community to socialise and do business.

KOWHY is another group platform, specifically for young Koreans who use the open group chatrooms for sharing useful information about services and other topics.

A number of online portals are predominantly used for service provision, and include *Missy Australia* (called a 'cafe') with a membership base of over 10,000 people. Korean people, especially women who have difficulty in using English, are highly likely to use this online community. *Hojunara* (at hojunara.com) is another local website and probably the biggest one for job and accommodation seekers. *Hojunara* has sections for news, buy and sell, and other interests. The site's "Flea market" section is used to buy and sell products, including meat and pork products.

There are more than a dozen traditional Korean community news media outlets. All of them print free papers and a small number run a frequently updated website. *Hanho Daily*, for example, also has a phone app for news and advertisements.

The podcast *G'day Australia* run by Sean Cho is the oldest and the biggest Korean community podcast, and presents local current news. It represents an alternative method of engagement to social and print media.

3.5.3. Chinese community communication channels

The Chinese community mostly uses WeChat, with print media usually only used by seniors who like to read newspapers.

WeChat has various bulk food groups (including for meat) where individuals can buy meat directly from a wholesaler and collect it from a number of locations across Sydney (home addresses in Ryde, Carlingford, Hurstville, Burwood). Meat distribution can be arranged via WeChat, and a distributor only needs a fridge to be in business (it is unclear what, if any, food safety requirements are observed). Meat distributors receive a discount on purchases that are collected from them with customers paying online (using WeChat) usually in Yuan which is linked to their credit card. These transactions are all undertaken in Chinese language.

3.6. Unexpected engagement outcomes

Through its collaboration with the NESB champions, NSW DPI and GSLLS were able to seek advice on the likely consumer reaction to recent changes to NLIS Pigs that requires all pigs below 25kg live weight, including suckling pigs, to be identified with an ear tag. The AWaW and ECC were also able to explain the requirement to butchers/consumers and distribute a letter from Australian Pork Limited (APL) to meat wholesalers and butchers about the change. Feedback from the NESB champions suggested consumers were not bothered by any hole in a pig's ear and understood it had no impact on carcase quality. This feedback to industry helped in stemming some of the producers' resistance to the change to weaner pig identification.

Through engagement with EPA and EHO officers, the potential for future collaborations was identified. These collaborations will be used to further elicit information related to the disposal of food waste, swill feeding and the sourcing of pig meat (including verification of receipts for purchase of meat or detecting the illegal supply of meat through unregistered retail activities).

4. Discussion

Recent research commissioned by the Department of Agriculture and Water Resources has identified a number of barriers (such as lack of trust in government) which negatively influence biosecurity engagement efforts (Wright, et al., 2016). This lack of trust was confirmed by repeated reports of reluctance by NESB food outlets to provide meat supplier, waste collector, and pig producer details. This reluctance was not unexpected and would have likely been greater had NSW DPI and GSLLS staff attempted to engage these communities directly. One NESB champion admitted they felt they “couldn’t ask further as they (the businesses) will think we are there to investigate and they will be more reluctant to participate”. It does however; highlight the fact that even when dealing with members of their own community, NESB champions must earn the confidence and trust of those they engage with.

The networks and communication established with EPA and EHO offer opportunities for broader collaboration and may provide additional insight into activities that have greater implications for food safety, biosecurity and engagement with retailers and restaurateurs than previously understood. Further collaboration may also reveal important leads to better understand transactions and networks of importance within the retail communities of interest.

No additional NESB pig owners were identified in the Greater Sydney region other than those on the NSW Government PIC registry (two pig owners were identified as Asian origin). This indicates that Asian pig owners in the region may not have direct contact with the butchers, restaurants, saleyards, abattoirs, livestock feed, animal health suppliers and veterinarians engaged. The lack of contact may indicate a reduced likelihood of large-scale swill feeding occurring but does not eliminate the potential for small-scale NESB producers to be operating outside the traditional and legal pathways (and sourcing food scraps from family and local community members).

Based on a broad understanding of the cultural and economic importance of pig ownership to individual families and small communities, it is possible that much of the activity associated with swill feeding takes place undetected and dissociated from the channels of activity investigated to date.

Although clear spatial relationships between livestock service providers and potential sources of food waste or pig meat products exist, there was little to no evidence identified by the project of interaction related to accessing food waste for feeding pigs, or for service provision (the feeding, health and husbandry of pigs) to NESB pig owners. Nor was there evidence of interaction in any way between retail outlets and pig owners (for the sale or purchase of pig meat or pig meat products).

However, as previously noted, there exists considerable opportunity to replicate this approach across a number of targeted areas identified by spatial analyses to differ from those surveyed to date. Further survey work in targeted suburbs may reveal different results from those generated by the NESB champions and provide further evidence for a differentiated approach to engagement based on inherent understanding of key geographical and cultural differences.

There may be key differences between inner-city high-density and outer-city lower-density cultural communities. These differences may be expressed through, for example, understanding and interest in food production, food safety and animal health and biosecurity. **Further and broader community engagement through new channels (such as those identified by the NESB champions) is required for effective communication with these more isolated and/or lower density and less-serviced communities.** This would both extend key messages and identify differences (important for messaging and providing incentives) between population sectors.

Biosecurity engagement work completed in smallholder communities overseas concluded that geographical, resource and physical variables affected smallholder behaviours and engagement. Hence

interventions did not take a “one size fits all” approach. There are likely to be key differences between NESB smallholder pig owners in inner and outer suburbs, and between cultures and communities. This means that a swill feeding engagement strategy may not be best approached through a single line of communication or engagement.

Further understanding of each culture (including their values and beliefs directly associated with small scale pig ownership, feeding and husbandry) may elicit additional insights for alternative extension and engagement pathways. Rather than adopting a pre-defined intervention, an engagement strategy should empower NESB smallholders to make choices suitable to their cultural, financial and situational circumstances, and in line with their values and beliefs. In this way, more sustainable practice change may be achieved.

A full summary of findings and recommendations is provided below.

a) Face-to-face engagement by NESB community champions

The engagement of NESB champions was found to be essential in:

- identifying and communicating (in first languages) with NESB actors (butchers, food outlets, farmers, pork consumers, butcher clients and market attendees)
- identifying alternative swill feeding engagement pathways (such as by using union networks to combine biosecurity extension to NESB businesses with union activity)
- improving the tailoring and reach of biosecurity messages
- providing government with a better understanding of NESB attitudes and practices around retail food business interactions and transactions
- identifying NESB community actors (e.g. retail food businesses, union staff) who could offer culturally-appropriate advice about biosecurity practices to fellow NESB community members.

In addition, there are likely to be key differences between NESB smallholder pig owners in inner and outer suburbs, and between cultures and communities. This means that a swill feeding engagement strategy may not be best approached through a single line of communication or engagement.

Recommendation A1: Employ NESB engagement liaison officers (and possibly create a train-the-trainer program) to work with existing agricultural education and extension organisations to undertake work with NESB communities on behalf of government.

Recommendation A2: Use NESB champions to further explore alternative biosecurity engagement channels (such as community groups not directly associated with but closely aligned with pig ownership). Recognise that NESB champions may differ in each geographic community—they may be a cultural community leader within a particular suburb, or have connections with (for example) school communities or child care groups integral to and trusted by a cultural community.

Recommendation A3: Develop a broader understanding of internal incentives (such as culture, values and beliefs) for biosecurity engagement (which are likely to differ among cultures, key personnel and businesses, communities and locations) with NESB communities.

Recommendation A4: Use engagement channels to maintain ongoing contact with NESB communities. This continuity will build trust and create an environment where the concept of biosecurity becomes everyday language, and NESB communities will better understand their part in Australia’s shared biosecurity responsibility.

Recommendation A5: Engagement campaigns should address the perception (of NESB communities) that the risks associated with swill feeding are lower in Australia than in Asia.

Recommendation A6: Effective engagement requires communication of immediate, relevant and tangible benefits to individuals, families and businesses (for example, offering resources and support or stimulating a sense of achievement, pride and purpose in communities, businesses and individuals involved in pig ownership or trade).

b) Other opportunities for face-to-face engagement with NESB retailers

Findings support the continuation of engagement with food retail personnel in inner city areas in order to build attitudinal change and understanding of the biosecurity and business risks of supplying swill. In addition, efficiencies could be gained through opportunistically tying in swill feeding messages and extension with visits to NESB businesses about waste reduction, such as those that are part of the EPA's Bin Trim program.

However, Korean, Vietnamese and Chinese butchers indicated that they are too time-poor to attend a workshop on waste disposal or biosecurity, even with incentives or benefits (e.g. a free copy of the retail meat diary and catering provided). This suggests businesses may only pay attention to information sent to them (or change a behaviour) if it is directly related to legislative regulations where penalties are imposed for non-compliance.

Recommendation B1: Undertake further collaboration with environmental health and food safety personnel to learn more about the practices of NESB pork retailers and related businesses, and to provide an additional source of extension.

Recommendation B2: Include the provision of food waste for swill feeding as an auditable practice (with maximum penalties for non-compliance) by NSW Food Authority (NSW FA) and Environmental Health Officers (EHOs). This may require providing legislative training to local government EHOs and EPA inspectors about responsible disposal of food waste (so they may assist with preventing and monitoring the supply of swill by food outlets).

Recommendation B3: Meat retailers are required to list (in a NSW Retail Meat Diary auditable by the NSW FA and EHO) where their supplies are sourced from and a provider must be an approved supplier (i.e. hold a NSW Food Authority licence number). Additional information about prohibited pig feed and correct responsible disposal of food waste should be included in the NSW Retail Meat Diary and User Guide.

Recommendation B4: Showground bodies, farmers markets and festival organisers (cultural, music, food) should be educated about responsible disposal of food waste to reduce the risk of swill being supplied to livestock owners.

Recommendation B5: Suburbs with a high proportion of NESB residents, and where retail outlets as potential suppliers of food waste have not been surveyed, should be investigated as a priority

c) NESB biosecurity communication channels

NESB champions reported that many Chinese in the Greater Sydney area are not good at English and rely heavily on finding information on accommodation, sales and news from local Mandarin media. Suitable channels for biosecurity engagement in the Greater Sydney area included:

- WeChat (local and China-based networks)
- Fleamarket
- SBS radio (Mandarin, Vietnamese, Filipino, Korean and Cantonese)
- Radio2000 (Sydney bilingual community radio)
- NESB newspapers
- Australian Chinese Growers Association (part of Hort-Innovation's VegNet)
- Marketplaces (especially at the Flemington and Homebush markets)
- Online marketplaces (such as Gumtree, Taobao, Alibaba, Facebook Buy Swap and Sell, Farm Trader and T-mall)
- The podcast *G'day Australia* run by Sean Cho (in Mandarin)
- *Hanho Daily*, *Kakao Talk*, *Missy Australia*, *Hojunara* and *KOWHY* (online Korean platforms)

Recommendation C1: Identify alternative channels for NESB community engagement (by identifying other NESB community advocates as well as service providers such as vets and livestock contractors) including those which target women and other sub-groups (e.g. growers associations, market goers, high school/agriculture students) within these communities.

Recommendation C2: Use trusted NESB media (such as *SydneyToday* and *SBS radio*) to extend the reach of biosecurity messages.

Recommendation C3: Engage with high schools where all year 7 and 8 students learn agriculture, as well as agriculture-focused schools (such as James Ruse Agricultural High in north/north-west Sydney). These schools often have high numbers of NESB students from farming families. Connect NESB champions with the Sydney Agricultural Teachers Association to promote understanding and best practice pig keeping.

Recommendation C4: Investment in a public WeChat account for biosecurity engagement with the 902 million daily users (Scott, 2018).

d) NESB communities, food retailers and pig ownership data

Mapping and data identified:

- suburbs in the Greater Sydney (GS) area which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership
- that pigs were being kept within relatively built up and densely populated areas of Greater Sydney (including suburbs with both high numbers or demographics of interest in this project and those identifying as NESB within these populations) such as Fairfield, Blacktown and Canterbury
- a number of GS suburbs with a high proportion of NESB residents which overlap with retail pork outlets (potential suppliers of swill) which have not yet been surveyed
- a cross-section of potential points of engagement with five cultural groups (and in particular with NESB residents in those communities)
- a comprehensive subset of potentially high-risk (with respect to biosecurity practices) points of contact for smallholder pig owners (including retail food outlets)
- smaller communities of ethnic groups outside of higher-density, inner city locations where pig ownership is more likely (but which may have been previously overlooked due to their relatively lower numbers of any given demographic)
- no reported contact between vets or service providers and NESB pig owners in the Greater Sydney area (even those areas identified as likely to have NESB owners of pigs)
- the absence of NESB smallholder pig owners at live auctions or abattoirs suggests that any who do exist in the region do not share points of contact with the local pig industry.

Recommendation D1: Identify and use additional, broader community engagement channels for effective communication with more isolated, lower density, less serviced communities (both to extend key messages and identify any differences between outer- and inner-city populations).

Recommendation D2: Investigate as a priority any suburbs with a high proportion of NESB residents, and where retail outlets as potential suppliers of food waste have not been surveyed

Recommendation D3: Further investigate any relationship or contact with service providers in relatively built up and densely populated areas of Greater Sydney (with both high numbers or demographics of interest in this project and those identifying as NESB within these populations areas) to inform future engagement.

Recommendation D4: Further investigate NESB communities, networks and associations in suburbs which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography that supports pig ownership.

Recommendation D5: Use the available (comprehensive) land use data for Greater Sydney to more accurately predict the likelihood of pig ownership based on land area available, and its suitability for large livestock ownership.

Recommendation D6: Use the information mapped in this project to determine a) the demographic in contact with service providers b) the size of the demographic that each service provider network could reach, particularly through the use of traditional passive communication materials (such as flyers and posters) at the points of contact.

Recommendation D7: Facilitate contact between service providers and NESB pig owners (once identified) by, for example, inviting service providers to speak or give demonstrations at events attended by NESB communities.

Recommendation D8: Investigate how cultural, geographical, resource and physical variables affect smallholder behaviours and engagement and tailor engagement strategies accordingly.

e) Other recommendations

Recommendation E1: The procedures of waste cycle refuse depots (such as the Green Point used by the Flemington markets) should be reviewed to quantify what is collected, processed and how, type and destination of any off-site movement of food matter. This information could be used to assess the swill feeding risk posed by waste cycle refuse depots.

Bibliography

Brookes, V.J., Schembri, N., Ward, M.P., 2014. Network analysis of the structure of the pig industry and its associated industries in Australia. Report prepared for Australian Pork Limited, Canberra, Australia., pp. 49.

Collins, J., Krivokapic-Skoko, B., Monani, D. RIRDC: New Immigrants Improving Productivity in Australian Agriculture. September 2016. Publication No. 16/027 Project No. PRJ-007578
<https://www.agrifutures.com.au/wp-content/uploads/publications/16-027.pdf> Accessed December 2018

Hernández-Jover, M., Toribio, J.-A., Hayes, L., 2014. Characterization of smallholder production in Australia. In: 2014 College Science Week Scientific Meeting, Australian and New Zealand College of Veterinary Scientists, Gold Coast, July 2014.

.Idcommunity, accessed 28 December 2018 <https://profile.id.com.au/australia/language?WebID=250>
Local Land Services. 2018 Frequently asked questions about Local Land Services rates.
https://www.ils.nsw.gov.au/__data/assets/pdf_file/0009/795627/2018.01.10-2018-rates-external-frequently-asked-questions.pdf Accessed December 2018

Kancans, R., Stenekes, N. and Benedictos, T. (2010). Improving engagement of culturally and linguistically diverse persons in agriculture, fisheries and forestry. Australian Government: Australian Bureau of Agricultural and Resource Economics/Bureau of Rural Sciences. Canberra. See also this webpage which summarises the publication.
http://data.daff.gov.au/data/warehouse/pe_abarebrs99000003/ImpEngagStrat.html

Nampanya, S., Khounsy, S., Abila, R., Dy, C. and Windsor, P. A. (2016), Household Financial Status and Gender Perspectives in Determining the Financial Impact of Foot and Mouth Disease in Lao PDR. *Transbound Emerg Dis*, 63: 398-407. <https://doi:10.1111/tbed.12281>

NSW Department of Primary Industries 2017. STOP feeding swill to your pigs flyer
https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/319474/Stop-Do-not-feed-swill-to-your-pigs.pdf

NSW Department of Primary Industries 2017. Swill feeding Prime Fact
https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0019/163414/swill-feeding.pdf

Schembri, N., Hernandez-Jover, M., Toribio, J.-A. LML., & Holyoake, P. (2015). On-farm characteristics and biosecurity protocols for small-scale swine producers in Australia. *Preventive Veterinary Medicine*, 118(1), 104-116. <https://doi.org/10.1016/j.prevetmed.2014.11.008>

Schembri, N., Holyoake, P.K., Hernández-Jover, M., Toribio, J.-A.L.M.L., 2010. A qualitative study of the management and biosecurity practices of 13 interviewed pig owners selling via informal means in New South Wales, Australia. *Anim. Prod. Sci.* 50, 852–862.

Schembri, N., Hernández-Jover, M., Toribio, J.-A.L.M.L., Holyoake, P.K., 2009. Feeding of prohibited substances (swill) to pigs in Australia. *Aust. Vet. J.* 88, 294–300.

Scott, M. 2018. WeChat is a way of life for 900 million daily users. In the Black
<https://www.intheblack.com/articles/2018/05/01/wechat-super-app> Accessed December 2018

Rob Woodgate, R., Hernandez-Jover, M., Hayes, L., Schembri, N. 2018. Biosecurity engagement of small-scale pig producers. APL Project 2016/084. May 2018.

Wright, B., Jorgensen, B., Smith L. July 2016 Development of behaviour change strategies for animal disease surveillance and reporting. https://www.behaviourworksaustralia.org/wp-content/uploads/2016/11/BWA-Final-Report_Animal-Disease-Surveillance-November-2016.pdf Accessed December 2018

Young, J.R., Evans-Kocinski, S., Bush, R.D. and Windsor, P. A. (2015), Improving Smallholder Farmer Biosecurity in the Mekong Region Through Change Management. *Transbound Emerg Dis*, 62: 491-504. <https://doi:10.1111/tbed.12181>

Young, JR, Suon, S, Olmo, L., Bun, C., Hok, C., Ashley, K., Bush, R.D., Windsor, P.A. 2012. Investigation of smallholder farmer biosecurity and implications for sustainable foot-and-mouth disease control in Cambodia. *Transbound Emerg Dis*, 2017;64:2000–2012. <https://doi.org/10.1111/tbed.12609>

Windsor, P. A., Freeman, P., Abila, R., Benigno, C., Verin, B., Nim, V. and Cameron, A. (2011). Foot-and-Mouth Disease Control and Eradication in the Bicol Surveillance Buffer Zone of the Philippines. *Transboundary and Emerging Diseases*, 58: 421-433. <https://doi:10.1111/j.1865-1682.2011.01225.x>

Appendices

Appendix A

Additional NESB champion engagement materials

A1. NSW DPI Swill feeding Prime Fact



Swill feeding

July 2017, Primefact 637, fourth edition
Animal Biosecurity and Welfare, NSW DPI

What is swill feeding?

Swill feeding is the traditional name for the feeding of food scraps to pigs. This practice has caused foot-and-mouth disease outbreaks overseas, including the catastrophic epidemic in the United Kingdom in 2001. Some food substances have been categorised as prohibited pig feed ('swill') and it is illegal to feed them to pigs in Australia.

What food substances are prohibited pig feed?

You must not feed meat, meat products or anything that has been in contact with meat to pigs. This includes:

- pies, sausage rolls, bacon and cheese rolls, pizza, deli meats, table scraps etc, and
- household, commercial or industrial waste including restaurant food and discarded cooking oils, and
- anything that has been in contact with prohibited pig feed via collection, storage or transport in contaminated containers (such as meat trays and take-away food containers).

These restrictions apply to all pigs, including pet pigs.

Are there any food substances that are not prohibited pig feed?

Yes, provided they have not been in contact with meat or stored in contaminated containers. !

You can feed pigs: !

- milk, milk products and milk by-products either of Australian origin or legally imported into Australia ! for stock feed use
- eggs
- dry meal made from meat, blood or bone (processed by commercial hot rendering and purchased from a reputable produce store or feed merchant)
- non-meat bakery food substances
- fruit, vegetables and cereals.

Note: the feeding of discarded or downgraded food substances to pigs tends to be popular because it reduces food costs. However, it is important to make sure that the food substances you are feeding to your pigs are 'clean' and not contaminated with any antibiotic or pesticide residues.

Why all the fuss over prohibited pig feed?

Foot and mouth disease has been identified as the single greatest threat of any disease to Australian livestock industries. An outbreak of Food and Mouth Disease (FMD) in Australia would have devastating socio-economic impacts. The feeding of prohibited pig feed to pigs provides the most likely opportunity for the foot and mouth disease virus to become established in Australia. Illegally

www.dpi.nsw.gov.au

A2. Biosecurity Regulation 2017, Section 37, Prohibited pig feed

Biosecurity Regulation 2017

Current version for 2 June 2017 to date (accessed 12 October 2017 at 15:32)

Part 2 > Division 9 > Clause 37

37 Prohibited pig feed

- (1) A person must not feed stock food to a pig if the stock food contains a mammal product unless the feeding of the mammal product to the pig is otherwise authorised by this clause.
- (2) A mammal product may be fed to a pig if the mammal product:
 - (a) has been rendered in accordance with the relevant Australian Standard dealing with the rendering of animal products, or
Note. See AS 5008—2007, *Hygienic rendering of animal products* (or any standard that replaces that standard).
 - (b) has been cooked using a process that ensured that the mammal product had, during the cooking process, an internal temperature of at least 70 degrees Celsius for at least 30 minutes and the cooking was carried out under a jurisdictional permit, or
 - (c) has been treated using a process that has been approved by the Animal Health Committee and that process is carried out under a jurisdictional permit, or
 - (d) is identified in a permit issued by the Chief Veterinary Officer that authorises the mammal product to be fed to a pig for the purposes of research or baiting during the period specified in the permit.
- (3) Milk (including milk products and by-products) may be fed to a pig if the milk is of Australian provenance or it has been lawfully imported into Australia for stock food use.
- (4) Cooking oil or fat may be fed to a pig if the oil or fat:
 - (a) has been used in Australia for cooking, and
 - (b) has been treated in accordance with the *National Standard for Recycling of Used Cooking Fats and Oils Intended for Animal Feeds* approved by the Primary Industries Ministerial Council and published on the website of the Australian Renderers Association.
- (5) Any part of a domestic pig may be fed to another pig on a property if:
 - (a) the domestic pig was born on and spent its entire life on the property, and
 - (b) the feeding occurs as part of a therapeutic process in accordance with the written instructions of a registered veterinary practitioner.
- (6) A person must not possess (which includes collecting or storing) stock food containing a mammal product on a property on which a pig is kept unless the feeding of the stock food to the pig is authorised by this clause or the stock food is intended to be consumed by an animal other than a pig.
- (7) A person must not supply stock food containing a mammal product to another person knowing or reasonably suspecting that it is to be fed to a pig unless the feeding of the mammal product to a pig is authorised by this clause.
- (8) This clause applies to something that has had direct contact with a mammal product in the same way it applies to the mammal product.
- (9) In this clause:



Dear Sir/Madam,

Healthy Pigs project - Asian Women at Work

This letter is to confirm that the purpose of this visit by the officer of the Asian Women at Work (AWA) is to provide you with information about keeping healthy pigs. It is part of a Healthy Pigs project being run by the Australian Government, NSW Department of Primary Industries and Greater Sydney Local Land Services.

The aim of the project is to protect human and animal health. The following applies:

- Waste meat, meat products or anything that has been in contact with meat cannot be fed to pigs, cows, sheep and goats.
- Waste meat, meat products or anything that has been in contact with meat can carry diseases that can affect the health of humans and other animals.
- It is illegal for butchers, restaurants and bakeries to provide these products to pigs, cows, sheep and goats for food. Penalties apply to businesses and individuals who provide these products as food for pigs, cows, sheep and goats.
- These rules apply to all pigs, cows, sheep and goats including pet animals and animals for consumption.

If you would like more information or assistance with pig or animal health, please speak with the Asian Women at Work officer or contact Nerida Gill on (02) 4724 2139.

Regards,

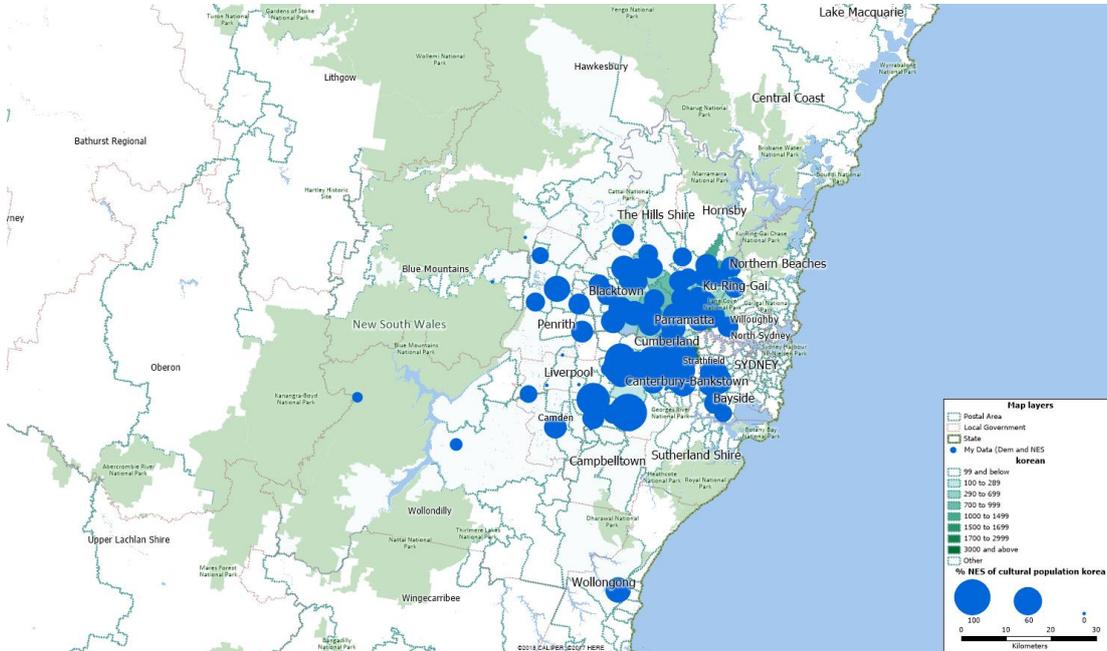
Nerida Gill
Senior Land Services Officer

Appendix B

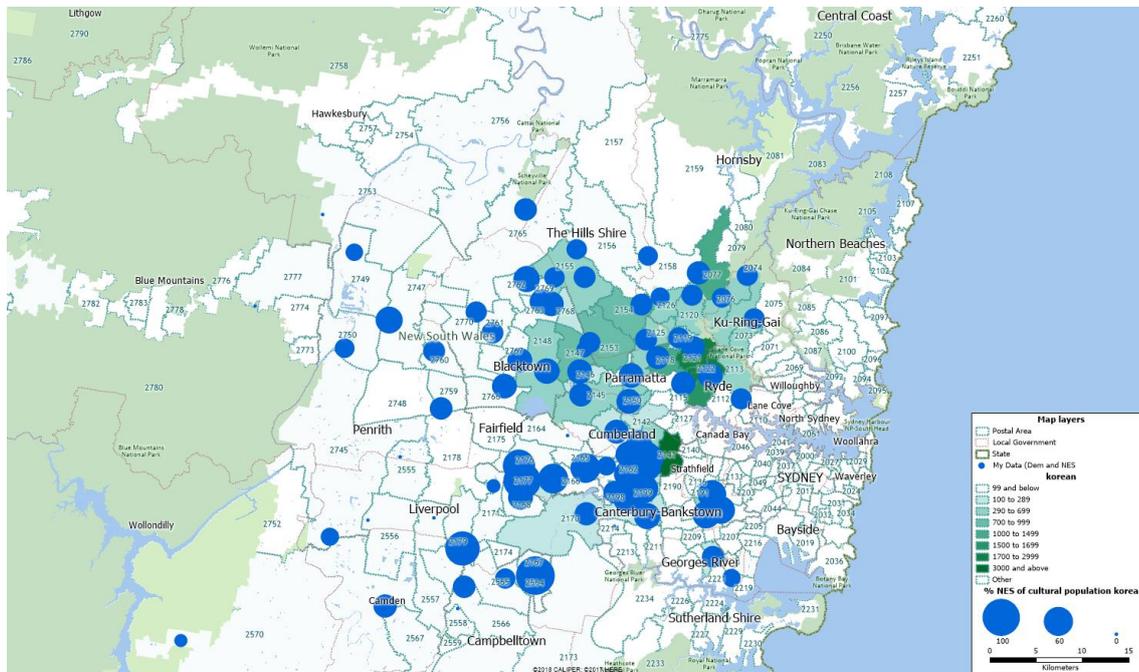
Additional service provider demographics

Demographic and NESB data Korean, Vietnamese, Maltese and Philippines.

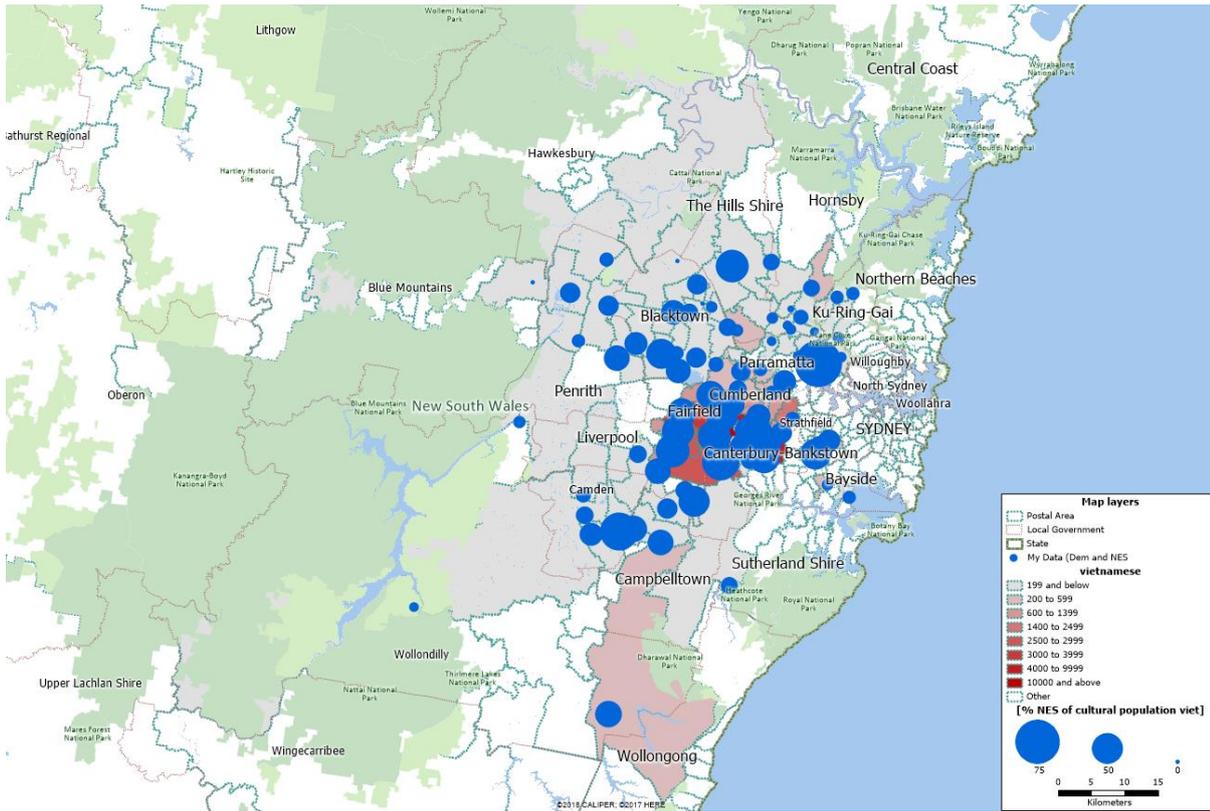
B1. Korean demographics and % NESB by postal district Greater Sydney



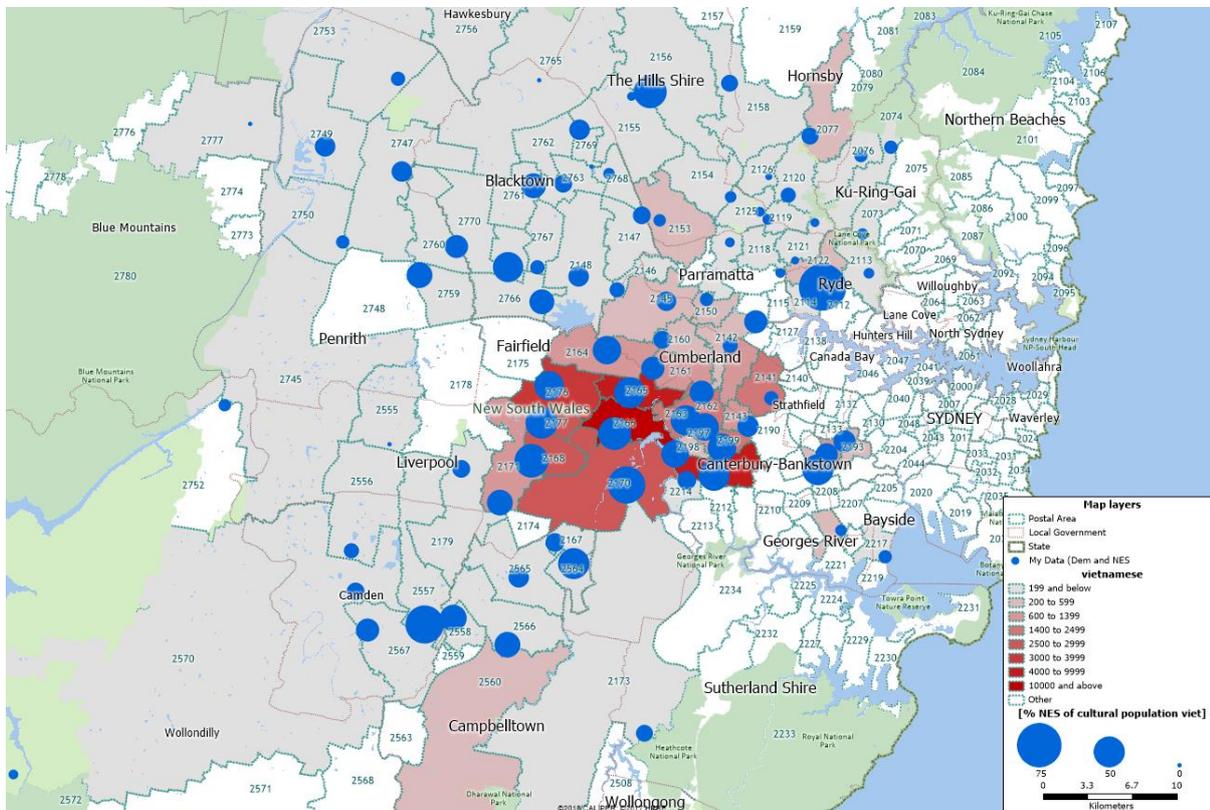
B2. Korean demographics and % NESB by postal district Inner Greater Sydney



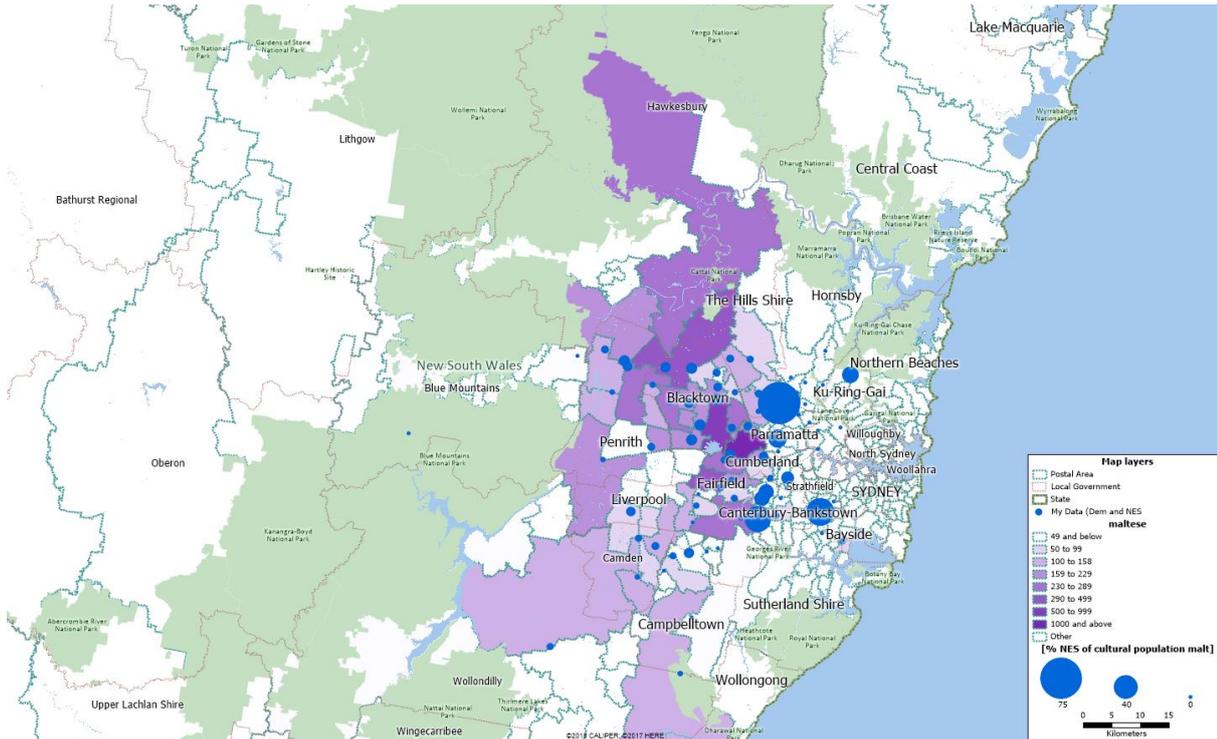
B3. Vietnamese demographics and % NESB by postal district Greater Sydney



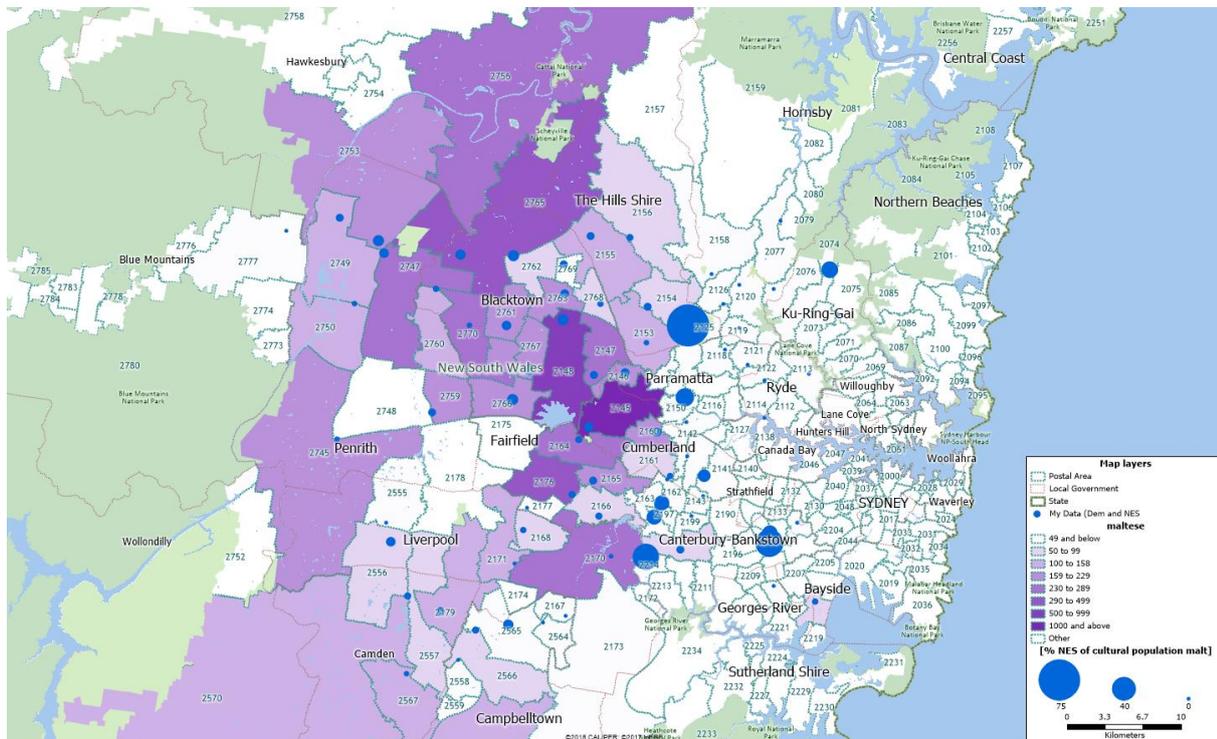
B4. Vietnamese demographics and % NESB by postal district Greater Sydney



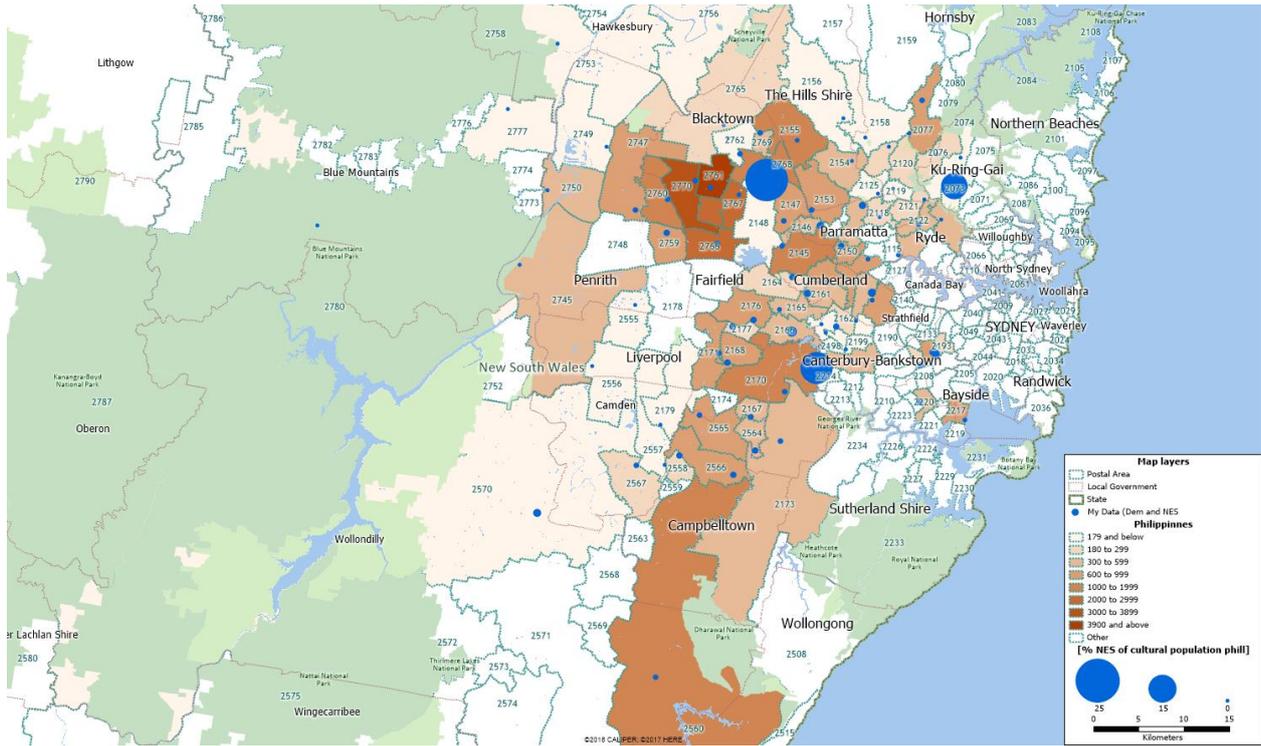
B5. Maltese demographics and % NESB by postal district Greater Sydney



B6. Maltese demographics and % NESB by postal district Greater Sydney



B7. Philippine demographics and % NESB by postal district Greater Sydney



- General husbandry)
- Euthanasia/slaughter)
- Other (please outline))

Q6. If you provide advice or services to NES pig owners how often would you be contacted (on average) (please tick the most appropriate answer below))

- Once per week)
- Once per month)
- Once per year)
- Twice+ per year)

If you would be willing to answer further questions on this topic as part of the broader project, please leave your name and phone number in the space below;)

Name..... Phone

Thank you for your time to complete this short questionnaire. Please do not hesitate to contact me if you would like further information regarding this initiative.)

Dr Helen McGregor - 0421 052302)

Appendix D

EHO personnel questionnaire

Biosecurity & Food Safety NSW



Department of
Primary Industries

Pig owner service provision and networks in Greater Sydney - survey

17 December 2018

Redefining Agriculture Pty Ltd together with NSW Department of Primary Industries, are collating information on biosecurity and food safety aspects of the production, feeding, husbandry and supply chain of pigs and pig meat in the Greater Sydney area.

We're particularly interested to learn how pig owners from non-English speaking backgrounds access advice and services, such as resources for feeding pigs (which may include food waste from restaurants) and supply of pig meat to food outlets/restaurants.

This work forms part of a larger project in which we are more broadly surveying and mapping service provision and engagement with peri-urban pig owners.

You can contribute to this work by completing a brief survey which can be accessed [here](#). The survey should take no longer than a few moments to complete, all responses are anonymous and are handled in complete confidence.

We appreciate your participation by Friday 21 December 2018.

Please do not hesitate to contact Dr Helen McGregor, Redefining Agriculture on 0421 052 302 if you have questions or would like additional information.



This initiative is part of the Australian Government's Agricultural Competitiveness White Paper, the government's plan for stronger farmers and a stronger economy.



⊕ PAGE TITLE

* 1. Please list the postcode districts within which you work

* 2. Have you had any dealings with restaurant owners who source pig meat for preparation and sale in their restaurants?

Yes

No

Comments (optional)

* 3. Do you have any evidence (anecdotal or dependable) that pig meat may at times be sourced (eg. processor) from anywhere other than a certified source in the food outlets you visit

Yes

No

Comments (optional)

* 4. Have you ever requested to see invoices or evidence of the source of produce/meat sold in a restaurant or food outlet?

Yes

No

Comments (optional)

* 5. For any of the food outlets you visit, have you seen any evidence (anecdotal or dependable) that food waste may be being held aside for collection, other than through council/EPA schemes?

Yes

No

Comments (optional)

* 6. Have you ever investigated a complaint related to the collection or redistribution of food waste?

Yes

No

Comments (optional)

Thank you for your time to complete this short questionnaire. Please do not hesitate to contact me if you have questions or would like additional information.

Dr Helen McGregor - Redefining Agriculture - 0421 052 302

⊕ NEW QUESTION



or Copy and paste questions

Appendix E

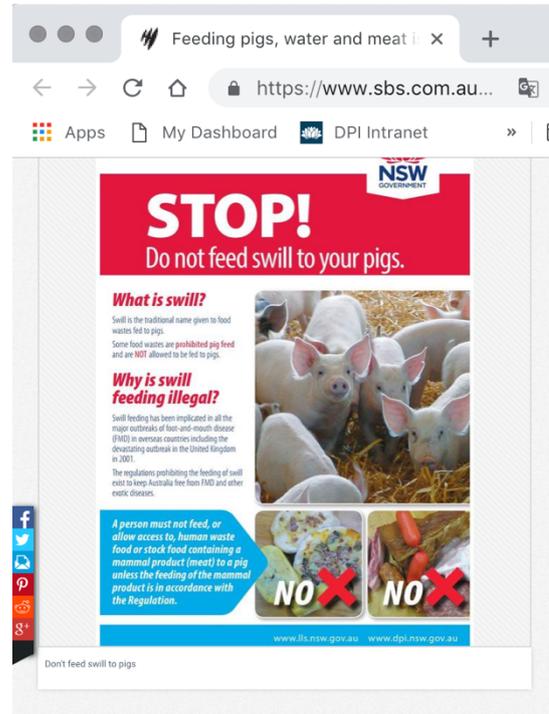
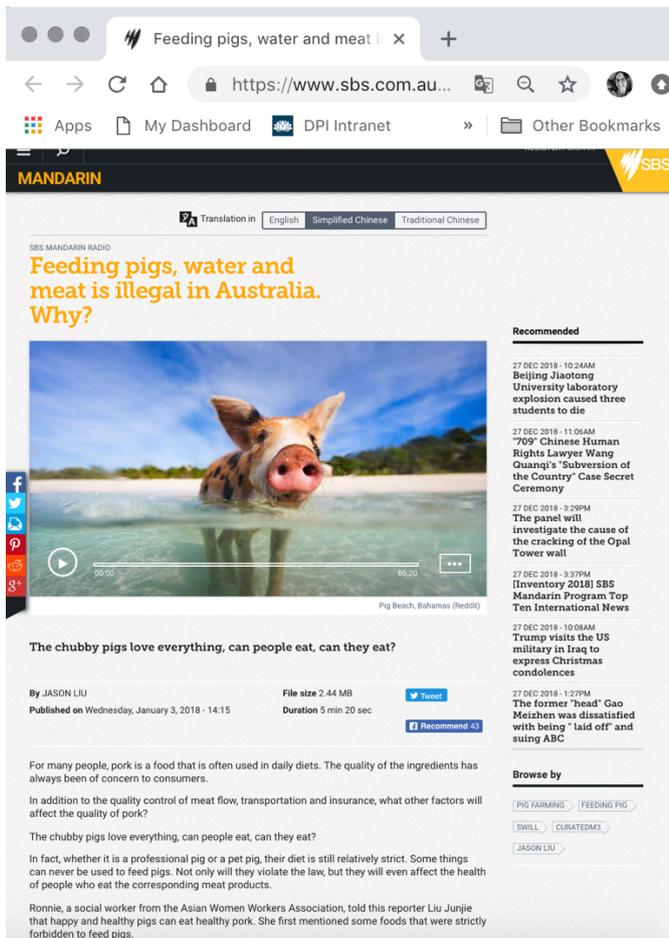
NESB Radio interview coverage

AWaW's telephone interview on SBS Mandarin radio on 3 January 2018 on pig health and swill feeding:
<https://www.sbs.com.au/yourlanguage/mandarin/zh-hans/audiotrack/why-cant-feed-swill-pigs?language=zh-hans>

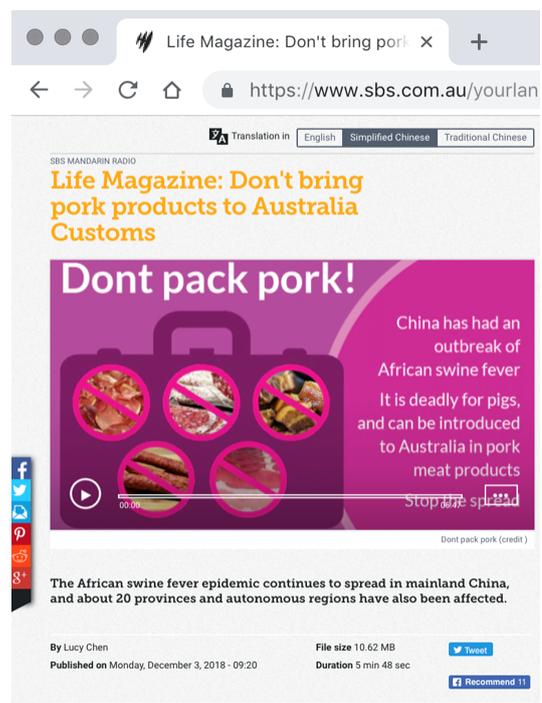
E1. SBS Mandarin radio web page of Asian Women at Work's interview, 3 January 2018 on pig health and swill feeding

The screenshot shows a web browser window displaying the SBS Mandarin website. The main content is an audio player for a video titled "喂猪泔水和肉在澳洲竟然是违法的, 为什么?" (Feeding pig manure and meat in Australia is illegal, why?). The video player shows a pig in the water. Below the player, there is a section titled "胖嘟嘟的猪什么都爱吃, 人能吃的东西, 它们也可以吃么?" (Plump pigs love to eat everything, can they eat what humans can eat?). The author is listed as JASON LIU, published on Wednesday, January 3, 2018. The file size is 2.44 MB and the duration is 5 min 20 sec. There are social media sharing buttons for Twitter and Facebook. A "Recommended" section on the right lists several news items, including "中国即将迎来猪年, 小猪佩奇独领风骚" and "【盘点2018】SBS普通话节目十大国际新闻".

E2. English translation of the SBS Mandarin radio interview by Asian Women at Work, 3 January 2018 on pig health and swill feeding



SBS Mandarin radio interview by Asian Women at Work, 3 December 2018 on the importance of not bringing pork products into Australia, swill feeding and African swine fever, <https://www.sbs.com.au/yourlanguage/mandarin/zh-hans/audiotrack/sheng-huo-za-zhi-bu-yao-si-dai-zhu-rou-zhi-pin-guo-ao-zhou-hai-guan>



E3. SBS Mandarin radio interview by Asian Women at Work, 3 December 2018 on the importance of not bringing pork products into Australia, swill feeding and African swine fever (English translation)

SBS Mandarin radio interview transcript

Ronnie: Since August 2018, China has an outbreak of African Swine Fever in a lot of provinces. It is getting more serious now. The Australian Department of Agriculture and Water Resources is responding actively to this new outbreak. As many Chinese like to bring some meat products from China to Australia and it's very important for people to know the new policy.

Lucy: Australian customer is very strict with bring meat products into Australia, including posting meat products. What's the new policy now?

Ronnie: Before 7th November, passengers arriving Australia are not allowed to bring any meat products, except meat products from Japan, Singapore and Indonesia. As at 7th November 2018 personal consignments of pork jerky and pork biltong from any country will not be permitted entry.

Lucy: That means neither pork floss nor pork pancake would be permitted entry.

Ronnie: Yes.

Lucy: What would happen if you bring some pork products?

Ronnie: Your pork products would be confiscated and you will be fined, depending what kind of the products and how many you are bringing.

Lucy: So where could people go to buy safe products?

Ronnie: Australia is very strict on biosecurity requirements. People should go to supermarket to buy meat products and should learn how to choose the healthy pork products. If people want to buy pork jerky or pork floss, most of the products were imported from other countries, and they had met Australia's import conditions, so people don't need to worry about the food safety. To keep healthy and safe of pork, we also need to avoid swill feeding to the pig. Don't feed pig with any meat, no matter it was raw or cooked. Pig would get sick.

Radio2000 interview

Asian Women at Work radio interview, 7 December 2018 on the importance of not bringing pork products into Australia, swill feeding; <https://mp.weixin.qq.com/s/jXU9kmSUczuxBRLDO9rgyw>

E5. Radio2000 radio interview by Asian Women at Work, 7 December 2018 on pig health and swill feeding

1. The world's pigs are coming, and the Australian Customs is investigating

(Image from the network)

Australian Asian Women Workers Association, volunteering to promote how to control piglets

Speaker: Ronnie

For a detailed analysis, please click on the audio above...

Radio 2000 interview transcript

Michael: It's almost Christmas and Chinese New Year time. Many people will go back and come to Australia during the holiday season. Australia has very strict biosecurity requirements. When you arrive in Australian airport, you should know what to bring and what not to bring. Recently Asian Women at Work was working with Greater Sydney Local Land Services to deliver some important message to the community. Because of the African Swine Fever, Australian customer had new policy about bringing pork products.

Ronnie: Since August 2018, China has an outbreak of African Swine Fever in a lot of provinces. It is getting more serious now. The Australian Department of Agriculture and Water Resources is responding actively to this new outbreak. After 7th November 2018 no pork products were permitted to enter Australia, no matter where they came from.

Michael: Why those pork products are not permitted to enter now?

Ronnie: People might get confused about the new policy, because we already know that no meat was allowed to bring to Australia. Actually, it did not include pork products from Japan, Singapore and Indonesia. You could bring the pork products from those three countries after you claim it when you arrive in airport. Because the ASF, from 7th November, no pork products are allowed to enter Australia at all.

Michael: All products, including canned pork food

Ronnie: Yes, all kinds of the pork products.

Michael: I heard that to avoid disease in pork, Australia government also had some message to pig farmer. Could you please talk about it?

Ronnie: In China, we always heard that people like to feed pig with food waste, such as meat and vegetables. Actually, it's illegal to swill feed in Australia. Swill may contain serious exotic diseases that could devastate our livestock industries and stop our meat products being exported.

Michael: So, we should not bring any pork products to Australia and we should not fee pig with food waste so we can make sure that the pigs in Australia are safe and healthy.

Ronnie: Yes, it's our responsibilities to deliver the information to the community. We went to Flemington market this morning. We talked to the vegetable growers and distributed the information about swill feeding so they could also pass the message to any pig farmers they might know.

Michael: So, we should not feed pig with waste food, especially meat.

Appendix F

NESB Newspaper Advertisements

“Do not pack pork” advertisements were published in NESB (Chinese, Korean and Vietnamese) newspapers on the weekend 26 January for Chinese New Year, Year of the Pig.

不要 携带猪肉制品

中国近期爆发非洲猪瘟疫情
这是一种猪的致命性疾病

来自海外的猪肉或猪肉制品可能会给澳大利亚带来严重的外来疾病与疫情，从而损害我们珍视的畜牧业，并禁止我们的肉类产品出口。

在旅途中请尽享您的美食但请
一定**不要**将相关猪肉制品带入
澳大利亚

猪肉制品的例子包括:

- 猪肉
- 火腿
- 腊肠
- 香肠
- 加工肉制品
- 肉干



阻止疫情的传播蔓延!

更多详情, 请参阅
www.dpi.nsw.gov.au



Department of
Primary Industries

돼지고기를 짐으로 포장하지 마십시오

중국에는 최근 아프리카 돼지 열병이 발생했습니다
이는 돼지에게 치명적입니다

해외에서 들어오는 돼지고기 혹은
돼지고기 제품은 호주에 심각한 외
래성 질병을 가져올 수도 있습니다.
이는 우리의 소중한 축산계를 황폐
화시키고 우리의 육류 제품 수출을
막을 수도 있습니다.

여행 중에 음식을 즐기시되
이를 **호주로 반입하시면 안
됩니다**

예:

- 돼지고기
- 햄
- 살라미
- 소시지
- 가공 육류 식품
- 육포



전염병 전파를 방지하십시오!

더 자세한 정보를 위한 사이트
www.dpi.nsw.gov.au



Department of
Primary Industries

ĐỪNG ĐEM THỊT HEO VỀ ÚC

Gần đây ở Trung Quốc đã xảy ra đợt bùng phát sốt heo châu Phi
ĐÂY LÀ BỆNH GIẾT CHẾT HEO

Thịt heo hoặc các sản phẩm thịt heo nước ngoài
nhiều khi đưa những bệnh ngoại lai, nghiêm trọng
vào Úc. Chúng có thể gây thiệt hại nặng nề cho các
ngành chăn nuôi giá trị của chúng ta và khiến chúng
ta không được phép xuất khẩu sản phẩm thịt.

Hãy thưởng thức các món ăn ngon trong khi đi du
lịch nhưng **ĐỪNG BAO GIỜ ĐEM CHỨNG VÀO ÚC**

Những ví dụ bao gồm:

- thịt heo
- giăm bông
- salami
- Lạp xưởng
- sản phẩm thịt chế biến
- thịt bò khô



HÃY CHẶN ĐỨNG DỊCH BỆNH LÂY LAN!

Muốn biết thêm thông tin, truy cập
www.dpi.nsw.gov.au



Department of
Primary Industries

Appendix G

WeChat – translated NESB (Chinese) social media posts

NSW DPI African Swine Fever “Do not pack pork” social tile for WeChat (above) and Destination NSW WeChat post (below)



Appendix H

NESB Responsible disposal of food waste

H1. Responsible disposal of food waste brochure in Chinese for food outlets



负责任地处置食品垃圾

准备食品或出售食品的企业有责任妥善处置食品垃圾。每个人应该负责任地处理食品垃圾用于饲养生猪或反当动物。食品垃圾应该送到指定的垃圾收集桶。由当地的市政部门收集。或者由商业垃圾服务公司进行填埋处理或在回收站进行堆肥处理。

获取更多信息

获取更多关于禁止喂饲生猪和反当动物的信息，请访问网站：www.dpi.nsw.gov.au/animals-and-pests/pigs-pig-nutrition/swill-feeding

获取更多关于禁止喂饲动物源性饲料的信息，请访问网站：www.animalhealthaustralia.com.au 或联系澳大利亚反当动物饲料专家。

动物疾病监测应急热线 1800 675 888

为食品店提供的信息



负责任地处置食品垃圾

生猪和反当动物的饲养受到《2017年生物安全条例》第九节第二部分的监管，以下情况可能会发生：《2015年生物安全法令》

- 用违禁食品垃圾喂饲生猪或反当动物
- 允许生猪或反当动物接触违禁饲料
- 在饲养生猪或反当动物的地方存储违禁饲料
- 收集和供应违禁饲料，用于喂饲生猪或反当动物



这些禁令适用于所有的生猪和反当动物，包括宠物和由休闲农场主所养的家畜。

不允许含有肉或其他哺乳动物副产品（生、解冻、山羊或鹿）的食品垃圾喂饲生猪或反当动物。这些食物是违禁饲料，就生猪而言，俗称“泔水”；就反当动物而言，俗称“禁止喂饲动物源性饲料”（RAM）。

在澳大利亚所有的州和地区，用泔水和禁止使用动物源性饲料喂饲生猪或反当动物是非法的。用泔水喂饲可能导致生猪患上严重的疾病，包括口蹄疫、非洲猪瘟和禽流感。禁止使用动物源性饲料可能含有引起致命性疾病的病原体，如疯牛病的病原体。

目前澳大利亚没有这些疾病，但是，含有这些病原体的食品垃圾可能未被检测到而流出。而使用泔水喂饲澳大利亚，禁止喂饲食品垃圾的生猪和反当动物，可提供一道重要的屏障，阻止这些疾病以及其他严重的牲畜疾病进入澳大利亚。

禁止供应/或饲喂给生猪和反当动物的食品

禁止给生猪或反当动物喂饲让它们接触到含有肉或肉制品的食品垃圾。非澳大利亚产的非正规进口的奶制品，亦或是任何属于这些食品垃圾的食品。

例如，包括食物碎屑、肉碎、香肠肉、熏肉和奶酪面包、含有肉类的沙拉、鸡肉及未经处理已用过的食用油和脂肪。

在收集、存储或运送受污染的食品，如鲜肉和生肉或外表覆盖着的垃圾时，任何澳大利亚产或进口的动物源性饲料（RAM）禁止用于喂饲生猪和反当动物，或让它们接触到这些东西。

H2. Responsible disposal of food waste brochure in Korean for food outlets



음식을 쓰레기를 책임있게 처리하십시오.

음식을 쓰레기 또는 반찬은 판매하는 사업체는 음식을 쓰레기를 적절히 처리해야 할 책임이 있습니다. 돼지 또는 반찬을 동물에게 먹이지 마세요. 음식물 쓰레기를 버리거나 그릇에 집거나 돼지 또는 반찬을 먹이지 마세요. 쓰레기를 버리는 것은 영국의 법입니다. NSW 환경부에서 제공하는 NSW 음식물 쓰레기 처리 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오.

돼지 또는 반찬 동물의 금지된 음식물 쓰레기 먹이지 혹은 공급금지

금지된 음식물 쓰레기가 돼지 또는 반찬 동물 주위에 공급되고 있다고 의심하거나 돼지 또는 반찬의 금지된 음식물 쓰레기에 접근할 수 있게 하거나 그릇에 버리는 것은 영국의 법입니다. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오.



음식물 쓰레기의 책임이 있는 처분

NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오. NSW 환경부에서 제공하는 지침을 확인하십시오.

동물 질병 긴급상황 전사 핫라인 1800 675 888

요식업소용 정보



이러한 금지사항들은 애완동물과 취미로 키우는 가족을 포함, 모든 돼지 및 반찬 동물에게 적용됩니다.

육류 또는 기타 동물 부산물을 포함하는 음식물 쓰레기는 돼지나 반찬 동물 (소, 양, 염소 또는 사슴)에게 먹이지는 않습니다. 이것은 영국의 법입니다. RAM에는 동물에게 먹이지 마세요. RAM은 동물에게 먹이지 마세요. RAM은 동물에게 먹이지 마세요. RAM은 동물에게 먹이지 마세요.

돼지 및 반찬 동물에게 공급하거나 먹이지 않아야 하는 음식

돼지 또는 반찬 동물은 육류, 육류 제품, 조식이나 다른 불법적으로 수입된 닭고기 및 닭고기 제품을 먹이지 마세요. 돼지 또는 반찬 동물에게 먹이지 마세요. 돼지 또는 반찬 동물에게 먹이지 마세요. 돼지 또는 반찬 동물에게 먹이지 마세요.

H3. Responsible disposal of food waste brochure in Vietnamese for food outlets



Thải bỏ rác thực phẩm của quý vị một cách có trách nhiệm

Các doanh nghiệp chế biến và hoặc bán thực phẩm chịu trách nhiệm thải bỏ rác thực phẩm một cách thích hợp. Công nhân thực phẩm bị cấm cho bất kỳ rác hoặc động vật tiếp xúc với động vật thực phẩm. Công nhân thực phẩm bị cấm cho bất kỳ rác hoặc động vật tiếp xúc với động vật thực phẩm. Công nhân thực phẩm bị cấm cho bất kỳ rác hoặc động vật tiếp xúc với động vật thực phẩm.

Trình báo trường hợp cho ăn hoặc cung cấp rác thực phẩm bị cấm cho heo hoặc động vật nhai lại

Nếu nghi ngờ chủ nuôi heo hoặc động vật nhai lại đang được cung cấp rác thực phẩm bị cấm, hoặc heo hoặc động vật nhai lại có thể tiếp xúc hoặc đang được cho ăn rác thực phẩm bị cấm, quý vị hãy gọi cho Đường dây Thurgờng trực tiếp về thực phẩm của Bộ Công nghiệp & Bán lẻ NSW qua số 1800 680 244 hoặc Đường dây Thurgờng trực tiếp về thực phẩm bị cấm cấp qua số 1800 675 888. Mọi vụ trình báo sẽ được ghi lại.



Thải bỏ rác thực phẩm một cách có trách nhiệm

Việc cho heo và động vật nhai lại ăn được quy định trong Phần 2, Mục 9, Quy định An toàn Sinh học năm 2017 và các hình phạt có thể được áp dụng theo Điều lệ An toàn Sinh học năm 2015 đối với trường hợp:

- cho heo hoặc động vật nhai lại ăn rác thực phẩm bị cấm
- cho phép heo hoặc động vật nhai lại tiếp cận thức ăn bị cấm
- tồn trữ thức ăn bị cấm tại một nơi có một hoặc nhiều con heo hoặc động vật nhai lại
- thủ tục giám sát cung cấp thức ăn bị cấm để cho heo hoặc động vật nhai lại.

Muốn biết thêm thông tin

Gọi cho Đường dây Thurgờng trực tiếp An toàn Sinh học của Bộ Công nghiệp & Bán lẻ NSW qua số 1800 680 244

Muốn biết thêm thông tin về cho ăn bằng thức ăn tạp, truy cập www.dpi.nsw.gov.au/animals-and-pests/pigs-pig-nutrition/swill-feeding

Muốn biết thêm thông tin về cho ăn bằng thức ăn tạp, truy cập www.animalhealthaustralia.com.au và tìm Australian Ruminant Feed Ban (rạn chuồng sử dụng thức ăn tạp)

ĐƯỜNG DÂY THURGỜNG TRỰC TIẾP VỀ THỰC PHẨM BỊ CẤM CHO HEO VÀ ĐỘNG VẬT NHAI LẠI 1800 675 888

Thông tin danh sách các thực phẩm thực phẩm



Những lệnh hạn chế này áp dụng với TẤT CẢ heo và động vật nhai lại, bao gồm thú nuôi và gia súc do nông dân nuôi như là thú tiêu khiển.

Cấm cho heo hoặc động vật nhai lại (gia súc, dê hoặc hươu) tiếp xúc ăn hoặc tiếp xúc với bất kỳ rác thực phẩm bị cấm nào. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật.

Cho ăn thức ăn tạp và RAM là bất hợp pháp đối với các bệnh và bệnh do virus. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật.

Thực phẩm BỊ CẤM cung cấp hoặc cho heo và động vật nhai lại ăn

Cấm cho heo hoặc động vật nhai lại ăn hoặc tiếp xúc với bất kỳ rác thực phẩm bị cấm nào. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật. Cho heo hoặc động vật nhai lại tiếp xúc với bất kỳ rác thực phẩm bị cấm nào là một hành vi vi phạm pháp luật.