The problem
Feeding pigs meat, food which contains or has been in contact with meat, or imported dairy products is called swill feeding and is illegal in Australia. This is because swill feeding to pigs is well recognised as a significant risk factor for the introduction and spread of emergency animal diseases, such as foot-and-mouth disease and African swine fever. (For more information about swill feeding please visit the Farm Biosecurity website.) Legislation, training, audits and information campaigns are all used in Australia to reduce the risk of swill feeding. However, it is difficult to cost-effectively determine how well these interventions work (and with who).

What we hoped to find out
Prior research identified backyard and small-scale producers (and in particular those in or near peri-urban areas) as more likely to feed swill to their pigs (Schembri et al. 2014). However, as little is currently known about pig owners from non-English speaking backgrounds in Australia, it is not known whether these pig owners have an increased likelihood of engaging in swill feeding due to traditional cultural pig rearing practices.

Through the use of bilingual community champions, the project team sought to increase government knowledge about and communication with those from a non-English speaking background (NESB) community who potentially provide or feed swill. This information would be used to tailor effective interventions for this community, if required. The target NESB community groups for this work (Chinese, Korean and Vietnamese) were selected based on traditional pig-rearing practices and pork consumption in the study location.

Who was involved
This project was funded by a small grant from the Department of Agriculture, and implemented by NSW Department of Primary Industries (NSW DPI) and Greater Sydney Local Land Services (GSLLS) as part of the NSW Peri Urban Biosecurity Program. Asian Women at Work (AWaW) and the Ethnic Communities Council (ECC), along with consultant Redefining Agriculture, were sub-contracted by NSW DPI and GSLLS.

Where we worked
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.
What we did
To investigate behaviours related to pig ownership and pork, the team:

- interviewed NESB farmers, food outlet businesses (who either traded in pork products or utilised meat products as part of everyday business) and consumers (including those at markets)
- mapped NESB communities, pig farming service providers (vets, feed suppliers and contractors) and relevant NESB food outlets
- surveyed NSW local council environmental health officers about sourcing and disposal of pork at retail outlets
- surveyed vets about veterinary services and advice provided to pig owners in the area

In addition, the team developed written biosecurity information (about swill feeding and bringing pork products to Australia) in languages other than English, and communicated biosecurity messages (in languages other than English) via radio, social media, newspapers and word of mouth.

What we found
How useful did the engagement of NESB community champions prove?
The project team gained more insight into the practices and beliefs of communities and relevant businesses through collaboration with community champions than would otherwise have been possible. For example, the champions identified several new (to the project team) channels for communicating with NESB community members. These included:

- WeChat (local and China-based social media networks)
- SBS radio (Mandarin, Vietnameze, Filipino, Korean and Cantonese)
- Radio2ooo (Sydney bilingual community radio)
- Australian Chinese Growers Association (part of HortInnovation’s VegNet)
- Marketplaces (especially the Flemington and Homebush produce markets)
- Online marketplaces (such as Taobao, 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 (all online Korean platforms).
- Sydney Korean Herald, Australian Chinese Daily, and Chieu Duong newspapers

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

- identifying and communicating (in languages other than English) with NESB community members (butchers, food outlets, farmers, pork consumers, butcher clients and market attendees)
- identifying alternative engagement pathways (outside of the pork industry)
- 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 sectors of the NESB community (e.g. retail food businesses) who could offer culturally-appropriate advice about biosecurity practices to other NESB community members.

What else did we learn?
The need for further social network exploration
Importantly, the project team found evidence that much of the interaction associated with smallholder pig ownership (including those relating to swill feeding) is likely to occur outside of conventional agricultural networks, and instead be located within family or cultural community networks. For instance, the project found no reported contact between vets and NESB pig owners (even in those areas identified by mapping as likely to have NESB owners of pigs). Likewise, there was no reported contact between Asian butchers and NESB smallholder pig owners, and investigation of saleyards and abattoirs did not identify NESB smallholder pig owners using these services.

This means that identifying and communicating with NESB smallholder pig owners requires contact with cultural communities who have little or no contact with conventional agricultural networks. In addition, initial engagement with NESB smallholders will require building trust through mutually beneficial engagement (for example, a focus on increasing livestock productivity), and further exploration of how livestock rearing functions within these communities, before any biosecurity behaviour change can be attempted.

Swill feeding perceptions
Anecdotal data gathered by the team detected a worrisome perception within NESB communities (interviewed for the project) that the risks associated with swill feeding are lower in Australia than in Asia because food in Australia is ‘healthier’.
What did the mapping of geo-spatial data tell us?

Mapping and analysis by Redefining Agriculture identified that:

• there are suburbs in the Greater Sydney area which support an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography supporting 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
• there are a number of Greater Sydney suburbs with a high proportion of NESB residents which overlap with retail pork outlets (potential suppliers of swill) which have not yet been surveyed
• geographic points of contact for smallholder pig owners with retail food outlets
• the existence of 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.

The project team supports further investigation of the above points.

So what?

Based on these findings, the project team advocates the following actions (grouped by topic). Note that discussion has not yet been undertaken to allocate responsibility or resourcing for these actions.

NESB community groups

• further government partnership with NESB community groups to better understand and engage with their members
• addressing the perception of NESB community members (in this project) that the risks associated with swill feeding are lower in Australia than in Asia

NESB smallholder pig owners

• focusing investigation and engagement efforts on suburbs with (as identified by mapping) an ethnic population, a high proportion of NESB residents within that ethnic population, and land use data and geography supporting pig ownership
• making greater use of the comprehensive land use data for Greater Sydney (combined with population-based information) to more accurately predict the likelihood of NESB smallholder pig ownership, followed by validation through field visits and investigation of what engagement would be successful with these pig owners
• further discussion with agricultural teachers to identify NESB smallholder pig owners
• further identifying and using alternative channels for making contact with NESB pig owners (such as NESB networks and associations, and agricultural schools)
• investigating key differences between NESB smallholder pig owners in inner and outer suburbs, and between cultures and communities (preferably by engaging relevant cultural community leaders, advocates or volunteers to provide insight and advice).

Environmental health and food safety personnel

• greater collaboration between biosecurity staff and 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
• making 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 providing any necessary training to those officers)

NESB food outlets

• ongoing biosecurity engagement with food safety and retail personnel to deter the supply of swill (in particular 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)
• including additional information about prohibited pig feed and responsible disposal of food waste in the NSW Retail Meat Diary and User Guide (including in languages other than English)