



Understanding the  
scale, severity and  
causes of food  
insecurity amongst  
Aboriginal communities  
in NSW: A pilot study of food  
insecurity prevalence and severity.

Final Report, April 2023

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**Disclaimer:** The findings and analysis presented is informed by data obtained from three study sites only (AH&MRC NSW Ethics Approval 1226/16 amended 08th Nov 2022) and reflects completion of an agreed milestone.

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# Contents

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<b>Executive summary</b>	<b>3</b>
Background	3
Purpose of this report	3
Approach	4
Summary of methods	4
Findings	6
Insights	6
<b>Introduction</b>	<b>8</b>
Purpose of this report	10
Approach	10
<b>Findings</b>	<b>15</b>
Demographic characteristics of study population	15
Socio-demographic characteristics	15
Food security prevalence and severity	16
Food insecurity problems during COVID-19 and other times	28
<b>Discussion</b>	<b>32</b>
<b>Guidances</b>	<b>35</b>
<b>Appendices</b>	<b>36</b>
Appendix 1 Original USDA-HFSSM-18 Survey instrument and local adaptation of the survey	36
Appendix 2 Additional COVID questions	37
Appendix 3 Location specific HFSSM questions and responses	38
Appendix 4 Survey field work observations in Bourke	53
<b>References</b>	<b>55</b>

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# Executive summary

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## Background

Food insecurity in Australia is increasing and disproportionately affecting Aboriginal and Torres Strait Islander peoples amidst a wider growing crisis of hunger and food inequality in Australia. The economic fallout from the COVID-19 pandemic, extreme weather events and the ongoing cost of living crisis have further exacerbated this problem. Aboriginal and Torres Strait Islander peoples have been experiencing food insecurity for several decades, all stemming back to the colonisation of 'Australia' and past and current Government policy interventions. The European invasion and colonial systems, policies, and structures that came with it have led to the dispossession of Aboriginal and Torres Strait Islander peoples from their lands, forced changes to diet, inability to practise traditional food practices and environmental harm – all of which have had enormous impacts on food security. The social and economic disruptions caused by the COVID-19 pandemic and the recent floods have further exacerbated food insecurity for Aboriginal Australians (1).

In Australia there is a lack of consistent, regular monitoring and reporting of food insecurity and paucity of evidence on issues such as this hinders the timeliness of actions to address such problems. The U.S. Household Food Security Survey Module (USDA-HFSSM) comprising 18 questions is considered a gold standard for assessment of food security worldwide as it is best placed to determine the true prevalence of food security globally and provide comparative data; responses to the 18 questions are summed to allow for identification of varying levels of severity amongst households (food secure, marginal food insecurity moderate food insecurity, severe food insecurity) (3-5). This tool has been culturally adapted for use in Aboriginal and Torres Strait Islander communities and was found to have contextual reliability and a fair agreement between test and retest in urban families in the Northern Territory in Australia.

In response to the evidence above, the Sax Institute was contracted by Aboriginal Affairs NSW in June 2022 to (i) conduct a rapid review to capture the extent of food insecurity, its systemic causes and key contributory factors among Aboriginal families in remote, regional and urban locations in NSW and; (ii) ascertain the true burden of food insecurity among Aboriginal adults and children and make meaningful comparisons between urban, regional and remote areas to guide policy and interventions to address this issue.

## Purpose of this report

The purpose of this report is to present findings from a pilot quantitative survey that was conducted to determine the prevalence and severity of household food insecurity in Aboriginal families in urban, regional and remote locations across NSW. Specific aims were to:



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1. Conduct initial consultations with select partner Aboriginal Community Controlled Health Services and Aboriginal community organisations in NSW to:
    - (i) develop an ongoing engagement strategy for the conduct of the household food security survey.
    - (ii) Conduct an informal pre-survey test of the modified 18-item USDA-HFSSM questionnaire adapted for the Australian Indigenous population for deployment in NSW.
  2. Using an Aboriginal adapted version of an 18-item USDA-HFSSM food security questionnaire, determine the prevalence and severity and socio-demographic predictors of food insecurity among Aboriginal adults and children in three local Government areas (LGAs) in urban, regional and remote locations across NSW.
  3. Share initial findings with partner ACCHSs, Aboriginal community organisations and policy makers in NSW, with a view to informing a wider, more comprehensive food security study.

The report describing the rapid review has been completed and submitted to Aboriginal Affairs NSW (6).

## Approach

This research took a qualitative approach initially, commencing with preliminary community consultations with three participating Aboriginal Community Controlled Health Services, which was followed by survey development and in person, on-site quantitative surveys conducted in three Aboriginal Community Controlled Health Services (ACCHSs): Tharawal Aboriginal Corporation (Tharawal) in Airds in outer-urban Sydney, Riverina Medical and Dental Aboriginal Corporation (RivMed) in Wagga Wagga, inner regional NSW, and Bourke Aboriginal Corporation Health Service (BACHS) in Bourke, remote north-western NSW. The purpose of these surveys was to obtain data to determine the prevalence and severity of household food insecurity in the previous 12 months and any socio-demographic factors associated with it.

## Summary of methods

### 1. Community Consultations

Initial consultations were held with the CEOs of the participating ACCHSs and Aboriginal Community Organisations about the scope of work and to obtain their approval for the project. Following that, an experienced Aboriginal researcher held further consultations with Aboriginal staff at RivMed to further adapt the 18-item HFSSM food security tool that was already validated and culturally adapted for use in Aboriginal communities. The ACCHS staff consultation also provided suggestions for the language used to draft the additional COVID-related questions. Staff at Tharawal, BACHS and Maranguka Community Hub in Bourke approved the changes made. This feedback included suggestions for examples of support options that were relevant for community (e.g., community food hampers) and providing blank space for respondents to suggest additional issues relevant to their own communities.

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## 2. Online Survey development

The adapted 18-item HFSSM food security survey questions, together with additional COVID-19 food security questions were compiled into a REDCap™ online survey project, in accordance with the protocols agreed in the AH&MRC project ethics approval. The online survey design was optimised for iPad use.

## 3. Survey data collection

Following ethics approval for this research, Aboriginal research officers at the three ACCHSs who were trained in administering the HFSSM food security survey used convenient sampling methods to recruit a non-random sample of approximately 150 adult Aboriginal participants in total from the communities served by the partner ACCHSs and Maranguka Hub in Bourke. Aboriginal research officers verbally went through the information sheet and then confirmed if each participant was freely willing to participate in this project. Participants who consented to participate were screened for eligibility to ensure they are aged 18 years and over, are Aboriginal and/or Torres Strait Islander, and are currently living in NSW. The NSW AH&MRC ethics committee provided approval to cover this study, 1226/16 on 18th November 2022. Aboriginal research officers in participating ACCHSs and those from the research team then requested eligible, consenting participants to anonymously fill out the survey online using REDCap on an electronic device. All the data collected are kept confidential on the REDCap restricted server at the Sax Institute. An incentive of \$50 was given as a local supermarket voucher to the participants as compensation for their time. In Bourke, the voucher was available for the local Bourke's Butchery.

## 4. Assessment of household food insecurity

Household food security status was assessed using the validated and culturally-adapted 18-item USDA-HFSSM household food security questionnaire by McCarthy and colleagues (7), including 10 adult questions and 8 child questions. The US 18-item household food security module was tested at the Danila Dilba Health Service in Darwin and surrounds with Indigenous staff and families for cultural-appropriateness and went on to clarify the terms used, review response options (eg. whether 'sometimes' could be interpreted as 'yes' and therefore be scored affirmatively) and adjusted the delivery of module items from statements to questions. Survey respondents were asked to consider the previous twelve months when answering questions to capture experience during the COVID-19 pandemic. The USDA-HFSSM protocol for households with children uses the number of affirmative responses to the 18 questions to provide a raw score categorising households' food security in 4 categories: food secure (score of 0); marginally food insecure (score of 1–2) moderately food insecure (score of 3–7); and severely food insecure (score 8–18) describing multiple indications of a disrupted eating pattern and reduced food intake. The scoring protocol for households without children differs in that only 10 questions are asked, and the raw score categories for moderate food insecurity is 3-5, while severe food insecurity is 6-10.

Other information collected included household socio-demographic characteristics - gender, age group, number of adults and children in the household, formal education level, housing status and post code. Although income level was not collected, education level was used as a relevant proxy indicator.

## 5. Data Analysis

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Characteristics of study participants were presented as frequencies and percentages. Pearson's chi-squared tests of association were conducted to determine if there were any differences between: 1) sites for socio-demographic and household characteristics; and 2) food security status for sites and socio-demographic and household characteristics. Fisher's exact test was used when one or more cells had an expected frequency of less than 5. Data were analysed using Stata version 16.1 (StataCorp, College Station, TX, USA) and the significance level was set at  $p < 0.05$ .

## Findings

The online household survey was conducted with Aboriginal adults living in the three study sites (n=155): Campbelltown local area (n=55), Wagga Wagga (n=50) and Bourke (n=50). Data for the COVID related questions included in this study are available and reported for all 155 respondents, whilst complete 18-USDA-HFSSM scores were only available for 151. On average, the duration for completing this online survey was 5 minutes and 51 seconds.

The majority of respondents were female (n=109; 72.2%) with the most common age between 25 and 44 years (n=63; 43%). Sixty-two percent of respondents (n = 94) reported not having completed Year 12, 21.9% having 3 or more children (n=33) and 66.9% (n = 101) reported living in public and social housing. There were significant differences in educational level and housing status of the respondents between the three sites, Campbelltown, Wagga Wagga and Bourke. Given the small number of people surveyed in each location (n=50) and the fact that the majority of the respondents were female, the study sample cannot be considered representative of the Aboriginal community in the respective locations.

Overall 3.3% percent of the respondents were categorized as being food secure (n=5) and the remaining 96.7% percent of the respondents (n=146) reported being food-insecure; 6.6% reporting marginal food insecurity (n=10), 30.5.% moderate food insecurity (n=46) and 59.6% (n=90) severe food insecurity. The prevalence of food security status was comparable across the four categories in three locations.

Respondents of households who were classified as having moderate to severe food insecurity were significantly less likely to have post-high school education; and no significant associations between food security status and any of the other demographic and household characteristics were observed.

Our results suggest that, during the COVID pandemic, half of the respondents experienced increased problems with money being tight and not being to afford food, 85.2% worried about food running out before they had enough money to buy more. Respondents who experienced greater problems with food insecurity during COVID-19 reported receiving money for food from extended family or friends (58.1%), accessing food relief from local ACCHSs or Aboriginal regional councils (32.9%), non-Aboriginal charity groups (23.9%) and traditional food sources (18.7%) to put food on the table.

## Insights

- Prevalence of food insecurity was extremely high at 96% among Aboriginal households in NSW surveyed.

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- Utilising local Aboriginal research officers to conduct food security surveys ensured the data was collected in a culturally safe way, increasing participation and supporting respondents to feel safe in answering sensitive questions.
  - This report highlights that Aboriginal peoples living in NSW, regardless of geographical location (based on the sample surveyed in this project), are extremely impacted by food insecurity. This is alarming considering that 80% of the Aboriginal population in NSW resides in (non-remote) locations. The food security prevalence in very remote NSW (Bourke) is comparatively more severe (75%) than in regional (53%) and urban (53%) NSW, though not statistically significant.
  - The recent COVID pandemic, floods (Bourke) and increased cost of living are all likely to be significant triggers for extremely high levels of moderate and severe food insecurity observed.



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# Introduction

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Food insecurity in Australia is increasing and disproportionately affecting Aboriginal and Torres Strait Islander peoples amidst a wider growing crisis of hunger and food inequality in Australia (8). The economic fallout from the COVID-19 pandemic, extreme weather events and the ongoing cost of living crisis have further exacerbated this problem (1, 6, 9). Aboriginal and Torres Strait Islander peoples have been experiencing food insecurity for several decades, all stemming back to the colonisation of 'Australia' and past and current government policy interventions (1, 10, 11). Aboriginal and Torres Strait Islander peoples have lived on the country now referred to as 'Australia' for over 65,000 years and maintained healthy lands, waters, animals, and people (12, 13), through a deep understanding of the land and harvesting foods seasonally and sustainably (14). The European invasion and colonial systems, policies, and structures that came with it have led to the dispossession of Aboriginal and Torres Strait Islander peoples from their lands, forced changes to diet, inability to practise traditional food practices and environmental harm – all of which have had enormous impacts on their food security.

Food security is achieved “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (15). This broad definition emphasises four distinct dimensions of food security which include the availability, accessibility and utilisation of food, in addition to the stability of each of these factors, which refers to an ability to withstand shocks to the broader food system. Food insecurity occurs when at least one of these domains are not met, where the experience at an individual or household level may be temporary or longer-term (16).

Members of several Aboriginal and Torres Strait Islander communities throughout Australia developed a more holistic definition of food security as being (17):

“The land and the sea is our food security. It is our right. Food security for us has two parts: Food security is when the food from our ancestors is protected and always there for us and our children. It is also when we can easily access and afford the right non-traditional food for a collective healthy and active life. When we are food secure we can provide, share and fulfil our responsibilities, we can choose good food, knowing how to make choices and how to prepare and use it”

In Australia there is a lack of consistent, regular monitoring and reporting of food insecurity. A paper by Friel and colleagues titled “No Data, No Problem, No Action: addressing urban health inequity in the 21st century”, states that the paucity of evidence on issues such as food insecurity hinders the timeliness of actions to address such problems (18). The Australian National Health Survey (NHS) (2011-2013) from a decade ago with the latest figures on food insecurity estimated that 4% of all Australians were food insecure (8). By comparison, 22% of Aboriginal and Torres Strait Islander

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peoples living in urban areas, and 31% living in remote areas were found to be food insecure (19). This survey used a single question to identify food insecurity: 'In the last 12 months was there any time you have run out of food and not been able to purchase more?'. Respondents who answered 'Yes' were asked whether they, or members of their household, had gone without food as a result. To ascertain the true burden of food insecurity among Aboriginal and Torres Strait Islander peoples, be able to make meaningful comparisons between urban, regional and remote areas and guide policy and interventions to address this issue, it is imperative that reliable measures of food insecurity be carried out.

The most commonly used measure to assess food insecurity at the household level is the 18-item U.S. Household Food Security Survey Module (USDA-HFSSM). It is a global scale used in national surveys across high-income countries, such as the United States and Canada and considered to be a gold standard for assessment of food security and to determine the true prevalence of food security and provide comparative data between countries. The USDA-HFSSM is the only tool in the literature in which psychometric properties have been substantially evaluated and having undergone rigorous testing among a variety of population groups (20). It captures financial constraints, poor resources, and compromised eating patterns and consumption and assesses the food security situation of adults and children at a household level; responses to the HFSSM items are summed to allow for identification of varying levels of severity amongst households (food secure, marginal food insecurity moderate food insecurity, severe food insecurity) (4). The USDA-HFSSM tool has been culturally adapted for use in Aboriginal and Torres Strait Islander communities and was found to have contextual reliability and a fair agreement between test and retest in urban families in the Northern Territory in Australia (7). In addition, a pre-test of the 18-item tool undertaken in the same population to clarify terminology, ease of question comprehension and simple response options enabled adaption of the questionnaire for use among Aboriginal and Torres Strait Islander populations (7) (adapted survey in Appendix 1).

In NSW, the state with the highest number of Aboriginal and Torres Strait Islander residents, more than 266,000, little to no quantified prevalence studies of household food insecurity are available. According to the 2021 census, the majority of Aboriginal and Torres Strait Islander peoples live in major cities (46.3%), followed by inner regional (34.5%), outer regional (15.5%), and remote (2.8%) and very remote (0.9%) areas (21). While the causes and nature of food insecurity among Aboriginal and Torres Strait Islander peoples have been explored nationally, in NSW, commentary and evidence about the root causes of food insecurity is largely absent. Only three studies specific to NSW on this topic have been published in peer reviewed journals. The scale and distribution of food insecurity is also unknown due to the limited data available in NSW. Data from three studies, all with small sample sizes, may not be generalisable to all Aboriginal and Torres Strait Islander peoples in NSW.

Hereafter, we respectfully use the term Aboriginal to refer to the traditional custodians of lands within NSW, in line with current guidelines (NACCHO, 2018).

Aboriginal Affairs NSW in its aim to support strong Aboriginal communities, particularly in light of recent natural disasters and pandemic-related government responses, has identified a need to optimise food security programs to improve overall social and economic outcomes. However, this work cannot be undertaken without a clearer understanding of prevalence, severity and regional differences of food insecurity amongst NSW communities. This gap in NSW data once addressed, will support both AANSW's advocacy efforts and additionally provide a valuable resource for NSW Health (Centre for

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Aboriginal Health) and related Aboriginal health partners to target food insecurity related chronic health condition prevention and management.

In response to the evidence above, the Sax Institute was contracted by Aboriginal Affairs NSW in June 2022 to (i) conduct a rapid review to capture the extent of food insecurity, its systemic causes and key contributory factors among Aboriginal families in remote, regional and urban locations in NSW and; (ii) ascertain the true burden of food insecurity among Aboriginal adults and children and make meaningful comparisons between urban, regional and remote areas to guide policy and interventions to address this issue.

The [report](#) describing the rapid review has been completed and submitted to Aboriginal Affairs NSW (6).

## Purpose of this report

The purpose of this report is to present findings from a pilot quantitative survey that was conducted to determine the prevalence and severity of household food insecurity in Aboriginal families in urban, regional and remote locations across NSW. Specific aims were to:

1. Conduct initial consultations with select partner Aboriginal Community Controlled Health Services and Aboriginal community organisations in NSW to:
  - (iii) develop an ongoing engagement strategy for the conduct of the household food security survey.
  - (iv) Conduct an informal pre-survey test of the modified 18-item USDA-HFSSM questionnaire adapted for use with Aboriginal peoples in NSW
2. Using an Aboriginal adapted version of an 18-item USDA-HFSSM food security questionnaire, determine the prevalence and severity and socio-demographic predictors of food insecurity among Aboriginal adults and children in three local Government areas (LGAs) in urban, regional and remote locations across NSW.
3. Share initial findings with partner ACCHSs, Aboriginal community organisations and policy makers in NSW, with a view to informing a wider, more comprehensive food security study.

## Approach

This research took a qualitative approach initially, commencing with preliminary community consultations with three participating Aboriginal Community Controlled Health Services and Aboriginal Community Organisations, which was followed by survey development and in person, on-site quantitative surveys conducted in the Aboriginal Community Controlled Health Services (ACCHSs) to obtain data to determine the prevalence and severity of food insecurity in the previous 12 months and socio-demographic predictors associated with it in Aboriginal families in remote, regional and urban locations across NSW.

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## Community Consultations

This research is built upon existing, long-standing partnerships and previous work on food insecurity done between the Sax Institute and two ACCHSs in NSW, Tharawal Aboriginal Corporation (Tharawal) in Airds in outer-urban Sydney, and Riverina Medical and Dental Aboriginal Corporation (RivMed) in Wagga Wagga, inner regional NSW. Bourke Aboriginal Corporation Health Service (BACHS) in Bourke, remote north-western NSW, joined this collaboration as a third, new partner in this project.

Initial consultations were held with the CEOs of the participating ACCHSs and Aboriginal Community Organisations about the scope of work and to obtain their approval for the project. The validated and culturally-adapted 18-item USDA-HFSSM household food security questionnaire (including 10 adult questions and 8 child questions) by McCarthy and colleagues (7) was used to assess household food security status. The questionnaire was tested at the Danila Dilba Health Service in Darwin and surrounds with Indigenous staff and families for cultural-appropriateness and went on to clarify the terms used, review response options (eg. Whether 'sometimes' could be interpreted as 'yes' and therefore be scored affirmatively) and adjusted the delivery of module items from statements to questions. Following that, further consultations were held with experienced Aboriginal staff at RivMed to further adapt the 18-item USDA-HFSSM food security tool adapted by McCarthy and colleagues to ensure it was an acceptable and appropriate tool for use to assess prevalence of household food insecurity in NSW communities. An Aboriginal (Wotjobaluk) researcher at the Sax Institute, who has grown up in NSW and has experience working with RivMed and Tharawal, led the adaptation process for the tool. The Aboriginal researcher held two face to face, in-depth, community consultations with ACCHS staff and compared both the original USDA-HFSSM 18 item household food security tool and the same tool adapted for Aboriginal communities. The local staff discussed the questions and reflected on their local meaning and context in order to ensure that the standardised questions used language that held meaning that could be used for international comparative purposes and still we're well understood by community members. An example of this adaption was instead of saying 'ran out of money and couldn't afford', the community members wanted to use 'money was tight' which is a commonly used phrase among communities. Staff at Tharawal, BACHS and Maranguka Community Hub in Bourke also approved the final adapted version of the tool used in this research found in Appendix 1.

Extensive discussions were also undertaken regarding the questions in the adapted USDA-HFSSM 18 tool around food insecurity among children in the household. Community members felt that these questions were extremely sensitive for many in their community given the past Stolen Generations, its impacts on current family relationships and governments, and the continuing high rates of removal of Aboriginal children still today. They did, however, feel that the questions were valuable to keep in the tool to allow the collection of data covering how children in their communities were experiencing food insecurity. The community members wanted to flag the sensitivity of these questions up front with the participants before they participated in the survey, so a sentence explaining this was written into the survey introduction for participants, and a reminder was written and built into the online survey form structure, with a 'pop up' notice immediately prior to the section on children in the survey flow. The community members involved in the consultation process wanted some reimbursement for the participants' time in the form of supermarket vouchers. A supermarket voucher was provided to each participant for reimbursement of their time and to value their knowledge and expertise'.

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The ACCHS staff consultation also provided suggestions for the language used to draft the additional COVID-related questions. This feedback included duration of focus, types of examples of options for support that were relevant for community (e.g., community food hampers) and providing space for respondents to suggest other options.

## **Online Survey development**

The adapted 18-item HFSSM food security survey questions, together with additional COVID-19 food security questions were compiled into a REDCap™ online survey project, in accordance with the protocols agreed in the AH&MRC project ethics approval. REDCap is a web-based application developed by Vanderbilt University to capture data for clinical research; it is designed to provide a secure environment to enable research teams to collect and store highly sensitive information (22). The consent, participant information sheet, question layout and responses were designed and pre-tested amongst ACCHS and Sax Institute staff members to ensure readability, accessibility (for those with vision constraints) and speed. The online survey design was optimised for iPad use as these have been tested and used in previous Sax research studies. Tests to ensure capability in Wi-Fi and mobile data environments were undertaken. Once tests were completed, the survey was launched as a 'live' survey, with the survey URL made available to specific Sax Institute devices only; that is, the survey URL was not made available for sharing on devices or phones external to this project.

## **Survey data collection**

### ***Recruitment, ethics approval and data collection***

Following community consultations and ethical approvals, the study was conducted in urban (Campbelltown), regional (Wagga Wagga) and very remote (Bourke) NSW.

Aboriginal research officers at the three ACCHSs used convenient sampling methods to recruit a non-random sample of adult participants (total number for all sites =155) from the communities served by the partner ACCHSs. In Bourke, this survey was conducted jointly with Bourke Aboriginal Corporation Health Service and Maranguka Community Hub. Aboriginal research officers verbally went through the information sheet and then confirmed if each participant was freely willing to participate in this project. Participants who consented to participate were screened for eligibility to ensure they are aged 18 years and over, are Aboriginal and/or Torres Strait Islander, and are currently living in NSW. The NSW AH&MRC ethics committee provided approval to cover this study, 1226/16 on 18<sup>th</sup> November 2022.

Aboriginal and/or Torres Strait Islander adults (aged 18 years and over) belonging to families with or without children attending the ACCHSs completed the standard survey on household food security and several additional questions (refer to Appendix 2). This research was promoted through multiple methods – social media, community groups, word of mouth and flyers placed at ACCHS patient waiting areas.

Aboriginal research officers in participating ACCHSs and those from the research team then supported eligible, consenting participants to anonymously fill out the survey online using REDCap on an electronic device. All the data collected have been kept confidential on the REDCap restricted server at the Sax Institute. Every effort was made to complete the survey on at least 50 participants at



each of sites at a minimum. An incentive of \$50 was given as a local supermarket voucher to the participants as compensation for their time. In Bourke, the voucher was available for the local Bourke’s Butchery.

The Aboriginal research officers who conducted the survey were local community members, therefore, knew the participants who required support to complete the survey. To avoid shame for the participants having to ask for assistance, the research officers administered the survey through an interview style for those who they identified through community knowledge as requiring assistance. In many cases the participants completed the survey on the device unassisted, with the research officer nearby to facilitate device hand-over, confirmation of survey completion and provide the voucher.

Survey participants in Bourke shared their experiences with food insecurity with the survey team which can be found in **Appendix 4**.

**Administration of the validated and culturally adapted 18-item USDA-HFSSM household food security questionnaire**

Household food security status was assessed using the validated and culturally-adapted 18-item USDA-HFSSM household food security questionnaire, including 10 adult questions and 8 child questions (4). The USDA-HFSSM tool was selected for determination of food security status because of its reliability across populations and population subgroups; and its ability to capture the severity level and continuum of experience of food security. Survey respondents were asked to consider the previous twelve months when answering questions to capture experience during the COVID-19 pandemic. The USDA-HFSSM protocol for households with children uses the number of affirmative responses to the 18 questions to provide a raw score categorising households’ food security in 4 categories: food secure (score of 0); marginally food insecure (score of 1–2) moderately food insecure (score of 3–7); and severely food insecure (score 8–18) describing multiple indications of a disrupted eating pattern and reduced food intake (**Table 1**). The scoring protocol for households without children differs in that only 10 questions are asked, and the raw score categories for moderate food insecurity is 3-5, while severe food insecurity is 6-10.

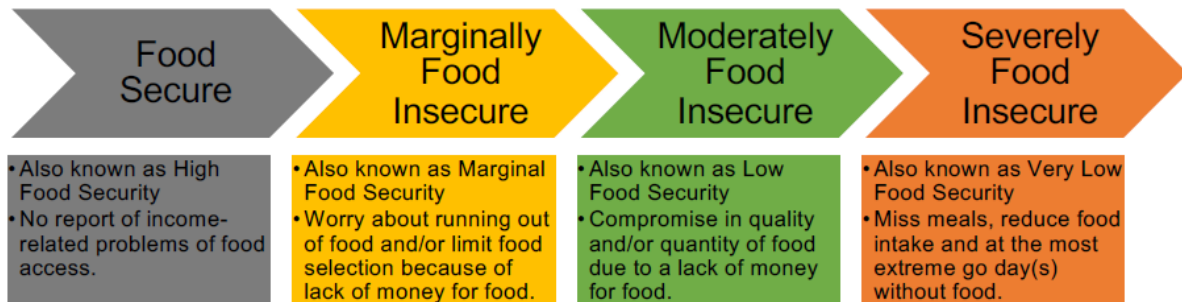
The common definitions for describing the severity of food insecurity can be seen in **Figure 1**.

**Table 1** Scoring algorithm for the USDA-18 HFSSM

<b>Food security status based on score on 18-Item Household Food Security Survey Module</b>		
Households without children: 10-Item Adult Food Security Scale (Maximum 10)		
Households with children: 10-Item Adult Food Security Scale and 8-Item Child Food Security Scale (Maximum 18)		
<b>Food security category</b>	<b>Households without children</b>	<b>Households with children</b>
Food secure	0	0
Marginal food insecurity	1 - 2	1 - 2

Moderate food insecurity	3 - 5	3 - 7
Severe food insecurity	≥6	≥8

Other information collected included information on household socio-demographic characteristics – gender, Aboriginality, age group, number of adults and children in the household, formal education level, housing status and post code. Although income level was not collected, education level was used as a relevant proxy indicator.



**Figure 1** Common definitions of food insecurity severity (adapted from Food Security Data Consensus Statement, 2022, Australian Household Food Security Data Coalition.)

## Data Analysis

Data for a range of socio-demographic and household characteristics of the study participants were reported by site as frequencies and percentages. To test for any differences between the sites for these characteristics we used Pearson's chi-squared tests of association with Fisher's exact test being used when one or more cells had an expected frequency of less than 5. We used the same tests to determine if there were any differences between food security status by site, socio-demographic and household characteristics. The distributions of the responses to the USDA-HFSSM-18 survey questions were examined by food security status with Fisher's exact tests of association being conducted. The data were analysed using Stata version 16.1 (StataCorp, College Station, TX, USA) and the significance level was set at  $p < 0.05$ . If  $p < 0.05$  then this means that there is less than a 5% chance of obtaining a significant result when there is really no difference between the sites or in food security status for the characteristics being examined.

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# Findings

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## Demographic characteristics of study population

The research was conducted in three locations in NSW: Campbelltown (Dharawal), an urban outer suburb of Greater Sydney with a population of 176,519 people (4.1% Aboriginal), Wagga Wagga (Wiradjuri), a large regional area located in inland NSW approximately five hours' drive from Sydney which has a population of 67,611 people (6.6% Aboriginal) and Bourke (Gurnu-Baakandji), a remote town in far western New South Wales with a small and declining population of 2,340 (30.2% Aboriginal) (21). Aboriginal communities have a lower median weekly household income of \$267 in Campbelltown, \$161 in Wagga Wagga and \$266 in Bourke when compared to the median weekly household income for their respective Local Government Areas (21).

## Socio-demographic characteristics

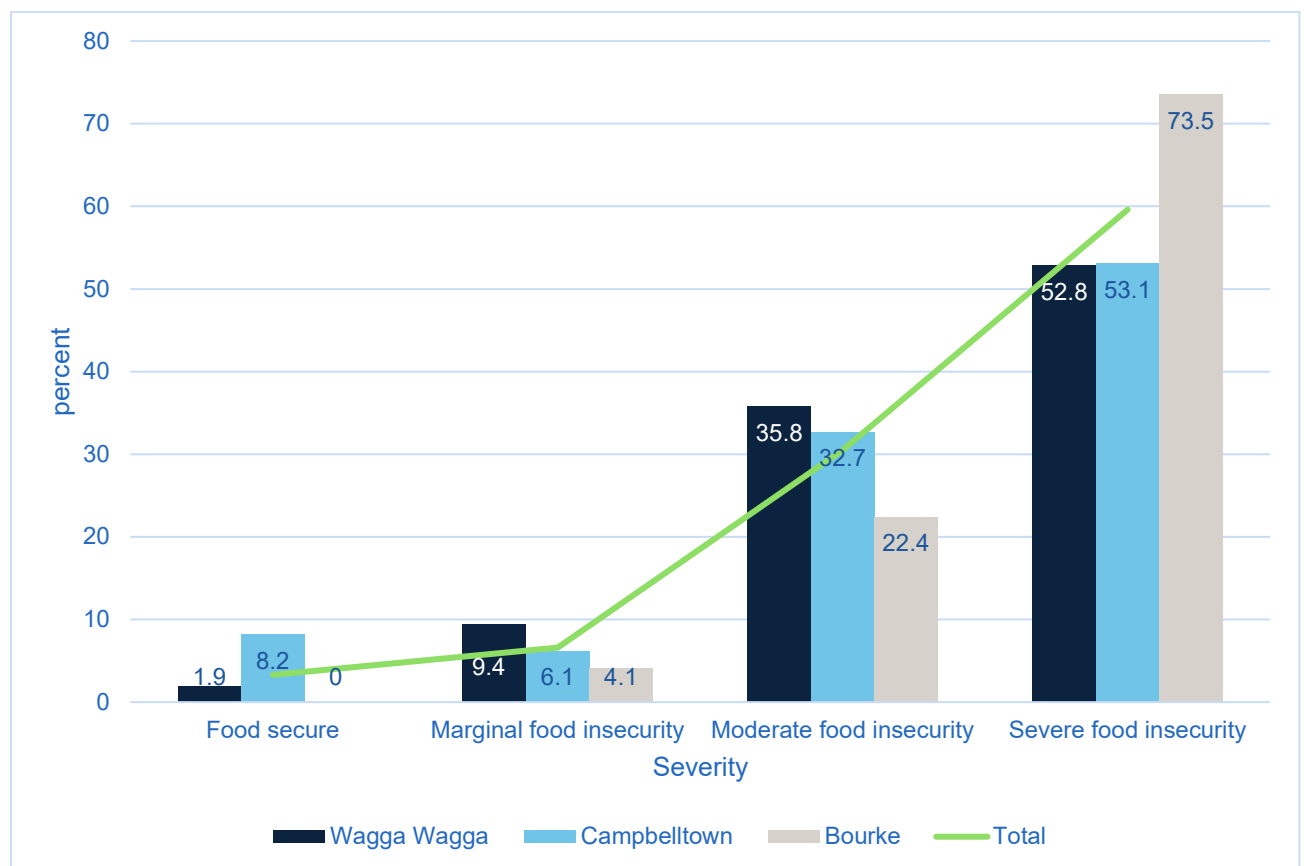
The online household survey was conducted with Aboriginal adults living in the three study sites (n=155): Campbelltown local area (n=55), Wagga Wagga (n=50) and Bourke (n=50). However, due to missing data to the HFSSM 18-item questionnaire for 4 respondents, food security prevalence data for only 151 respondents are included. Data for the COVID related questions included in this study are available and reported for 155 respondents. On average, the duration for completing this online survey was 5 minutes and 51 seconds.

Survey respondent socio-demographic and household characteristics (n=151) are presented in **Table 2**. The majority of respondents were female (72.2%) with the most common age between 25 and 44 years (43%). Sixty-two percent of respondents (n = 94) reported not having completed Year 12, 21.9% having 3 or more children and 66.9% reported living in public and social housing. There were significant differences in educational level of the respondents and housing status between the three sites, Campbelltown, Wagga Wagga and Bourke. Respondents from Bourke were more likely to have the lowest educational level of Year 7 to Year 11 (87.8%) and be renting in public or social housing (77.6%) compared with Campbelltown (42.9% Year 7 to Year 11; 57.1% in public or social housing) and Wagga Wagga (57.7% Year 7 to Year 11; 66.0% in public or social housing). Given the small number of people surveyed in each location (n=50) and the fact that the majority of the respondents were female, the study sample cannot be considered representative of the Aboriginal community in the respective locations.

## Food security prevalence and severity

Data on household food security are presented in accordance with the four categories of food security severity status (**Figure 2**). Overall 3.3% percent of the respondents were categorized as being food secure and the remaining 96.7%- percent of the respondents reported being food-insecure; 6.6% reporting marginal food insecurity, 30.5.% moderate food insecurity and 59.6% having severe food insecurity. The prevalence of food security status was comparable across the four categories in three locations (Wagga Wagga, Campbelltown and Bourke), however site differences can be explored in more detail in [Appendix 3](#), which provides prevalence by severity and responses to HFSSM by each location.

**Figure 2:** Prevalence and severity of household food insecurity among Aboriginal families in Campbelltown, Wagga Wagga and Bourke (n=151)



**Table 2** - Overview of survey respondent sociodemographic and household characteristics

Participant characteristics	Campbelltown	Wagga Wagga	Bourke	Total	Chi-squared test of association
	n (%)	n (%)	n (%)	n (%)	P value
<b>Sex</b>					0.961
Female	35 (71.4)	39 (73.6)	35 (71.4)	109 (72.2)	
Male	14 (28.6)	14 (26.4)	14 (28.6)	42 (27.8)	
<b>Age (years)</b>					0.151
18-24	7 (14.3)	4 (7.5)	5 (10.2)	16 (10.6)	
25-44	19 (38.8)	30 (56.6)	16 (32.7)	65 (43.0)	
45-64	17 (34.7)	13 (24.5)	24 (49.0)	54 (35.8)	
65+	6 (12.2)	6 (11.3)	4 (8.2)	16 (10.6)	
<b>Highest (household) educational qualification §</b>					<0.001
High School (Year 7 to Year 11)	21 (42.9)	30 (57.7)	43 (87.8)	94 (62.7)	
Completed HSC (Year 12)	8 (16.3)	12 (23.1)	3 (6.1)	23 (15.3)	
Completed TAFE qualification	14 (28.6)	4 (7.7)	1 (2.0)	19 (12.7)	
Completed undergraduate degree at university (Bachelor degree or associate degree)	4 (8.2)	5 (9.6)	2 (4.1)	11 (7.3)	



Completed post-graduate degree at university (Masters or PhD)	2 (4.1)	1 (1.9)	0 (0)	3 (2.0)	
<b>Number of children in household</b>					0.166
0	15 (30.6)	17 (32.1)	25 (51.0)	57 (37.7)	
1	16 (32.7)	11 (20.8)	8 (16.3)	35 (23.2)	
2	9 (18.4)	9 (17.0)	8 (16.3)	26 (17.2)	
3 or more	9 (18.4)	16 (30.2)	8 (16.3)	33 (21.9)	
<b>Housing status§</b>					0.049
Renting in private housing	15 (30.6)	11 (20.8)	8 (16.3)	34 (22.5)	
Renting in public or social housing	28 (57.1)	35 (66.0)	38 (77.6)	101 (66.9)	
Own our house with a mortgage	5 (10.2)	6 (11.3)	0 (0)	11 (7.3)	
Own our house out right	1 (2.0)	1 (1.9)	3 (6.1)	5 (3.3)	

∞ Fishers exact test, where appropriate

§ excludes 'not-sure' responses

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Respondent socio-demographic and household characteristics across the four food security categories are presented in **Table 3** below. Respondents of households who were classified as having moderate to severe food insecurity were significantly less likely to have post-high school education; and no significant associations for any of the other demographic and household characteristics and food security status were observed.

The proportions of participants in each food insecurity level and their responses to each of the 18 HFSSM questions are represented in **Table 4** below. Several insights can be gained from the currently available data.

- **Sixty seven percent of respondents** who responded affirmatively to the question "*Were you worried about whether food would run out before you had enough money to buy more?*" were in the severely food insecure group as were **69% of those who answered affirmatively** to the question "*Have there been times the food you bought has not lasted until next pay?*".
- Similar to the Kleve et al's (2021) Australian household study during the COVID-19 pandemic (23), **as the questions increased in the severity of experience there was a small increase in the proportions of households who were moderate-severely food insecure.** However, the proportions reported in the Kleve study were much more evenly spread between food insecurity categories with 66.7% (n=670) reported as food secure in that national study, compared to only 3.3% in this Aboriginal NSW household study.
- Households' who responded sometimes/often to the questions "*Were the children living in your home not eating enough food because your family could not afford enough food?*" and "*Was the size of the children's meals made smaller because money was tight?*" were **100% and 97.2% from those who were in the severe food insecurity category.** These two questions were at the lower end of the food security experience (for households with children) and reflects the extreme distribution of respondents towards the most severe end in this study.

**Table 3** - Respondent sociodemographic and household characteristics by food security status

Sociodemographic and household characteristics	Food security status				Chi-squared test of association (exact)	
	Food secure	Marginal food insecurity	Moderate food insecurity	Severe food insecurity	Total	P value
	n (%)	n (%)	n (%)	n (%)	n (%)	
<b>Local government area</b>						0.131
Campbelltown	4 (8.2)	3 (6.1)	16 (32.7)	26 (53.1)	49 (100)	
Wagga Wagga	1 (1.9)	5 (9.4)	19 (35.8)	28 (52.8)	53 (100)	
Bourke	0 (0)	2 (4.1)	11 (22.4)	36 (73.5)	49 (100)	
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)	
<b>Sex</b>						0.287
Female	5 (4.6)	6 (5.5)	36 (33.0)	62 (56.9)	109 (100)	
Male	0 (0)	4 (9.5)	10 (23.8)	28 (66.7)	42 (100)	
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)	

<b>Age (years)</b>						0.145
18-24	1 (6.3)	3 (18.8)	5 (31.3)	7 (43.8)	16 (100)	
25-44	1 (1.5)	4 (6.2)	23 (35.4)	37 (56.9)	65 (100)	
45-64	2 (3.7)	1 (1.9)	13 (24.1)	38 (70.4)	54 (100)	
65+	1 (6.3)	2 (12.5)	5 (31.3)	8 (50.0)	16 (100)	
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)	
<b>No. of adults usually living in household</b>						0.335
1	0 (0)	1 (2.4)	16 (39.0)	24 (58.5)	41 (100)	
2	3 (5.5)	3 (5.5)	19 (34.5)	30 (54.5)	55 (100)	
3	1 (2.6)	4 (10.5)	8 (21.1)	25 (65.8)	38 (100)	
≥4	1 (5.9)	2 (11.8)	3 (17.6)	11 (64.7)	17 (100)	
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)	
<b>Number of children in household</b>						0.499

0	2 (3.5)	4 (7.0)	15 (26.3)	36 (63.2)	57 (100)
1	1 (2.9)	1 (2.9)	14 (40.0)	19 (54.3)	35 (100)
2	1 (3.8)	0 (0)	7 (26.9)	18 (69.2)	26 (100)
≥3	1 (3.0)	5 (15.2)	10 (30.3)	17 (51.5)	33 (100)
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)
<b>Number of children in household (binary categories)</b>					0.865
Without children	2 (3.5)	4 (7.0)	15 (26.3)	36 (63.2)	57 (100)
With ≥1 child	3 (3.2)	6 (6.4)	31 (33.0)	54 (57.4)	94 (100)
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)
<b>Housing status</b>					0.088
Renting in private housing	1 (2.9)	4 (11.8)	10 (29.4)	19 (55.9)	34 (100)
Renting in public or social housing	3 (3.0)	5 (5.0)	29 (28.7)	64 (63.4)	101 (100)
Own our house with a mortgage	0 (0)	0 (0)	4 (36.4)	7 (63.6)	11 (100)
Own our house out right	1 (20.0)	1 (20.0)	3 (60.0)	0 (0)	5 (100)



Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)
<b>Highest educational qualification of anyone in household</b>					0.005
High School (Year 7 to Year 11)	0 (0)	4 (4.3)	26 (27.7)	64 (68.1)	94 (100)
Completed HSC (Year 12)	2 (8.7)	3 (13.0)	7 (30.4)	11 (47.8)	23 (100)
Completed TAFE qualification	3 (15.8)	1 (5.3)	7 (36.8)	8 (42.1)	19 (100)
Completed undergraduate degree at university (Bachelor degree or associate) degree)	0 (0)	2 (18.2)	3 (27.3)	6 (54.5)	11 (100)
Completed post-graduate degree at university (Masters or PhD)	0 (0)	0 (0)	3 (100)	0 (0)	3 (100)
Not sure	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
Total	5 (3.3)	10 (6.6)	46 (30.5)	90 (59.6)	151 (100)

**Table 4** Distribution of responses to the 18-item food insecurity survey (USDA-HFSSM-18) across food insecurity status.

USDA-HFSSM-18 adapted	Food secure	Marginal food insecurity	Moderate food insecurity	Severe food insecurity	Total	Chi-squared test of association (exact)
	n (%)	n (%)	n (%)	n (%)	n (%)	P value
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>						<0.001
Sometimes true/often true	0 (0)	5 (3.8)	39 (29.3)	89 (66.9)	133 (100)	
Never true	5 (27.8)	5 (27.8)	7 (38.9)	1 (5.6)	18 (100)	
<b>Have there been times the food you bought has not lasted until next pay?</b>						<0.001
Sometimes true/often true	0 (0)	4 (3.1)	37 (28.2)	90 (68.7)	131 (100)	
Never true	5 (25.0)	6 (30.0)	9 (45.0)	0 (0)	20 (100)	
<b>Could you not afford to eat healthy foods at each meal?</b>						<0.001
Sometimes true/often true	0 (0)	3 (2.3)	36 (28.1)	89 (69.5)	128 (100)	
Never true	5 (21.7)	7 (30.4)	10 (43.5)	1 (4.3)	23 (100)	
<b>Did any adults in your household ever cut the size of your meals or skip meals b</b>						<0.001
Sometimes/often	0 (0)	0 (0)	19 (18.6)	83 (81.4)	102 (100)	

Never	5 (10.6)	10 (21.3)	27 (57.4)	5 (10.6)	47 (100)
Don't know	0 (0)	0 (0)	0 (0)	2 (100)	2 (100)
<b>How often did this happen?</b>					0.013
Only 1 or 2 months			7 (43.8)	9 (56.3)	16 (100)
Almost every month/Some months but not every month			11 (13.3)	72 (86.7)	83 (100)
Don't know			1 (33.3)	2 (66.7)	3 (100)
<b>Did you ever eat less than you felt you should because money was tight?</b>					<0.001
Sometimes/often	0 (0)	1 (0.9)	28 (24.1)	87 (75.0)	116 (100)
Never	5 (14.3)	9 (25.7)	18 (51.4)	3 (8.6)	35 (100)
<b>Were you ever hungry but didn't eat because you couldn't afford enough food?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	3 (3.5)	82 (96.5)	85 (100)
Never	5 (7.8)	10 (15.6)	43 (67.2)	6 (9.4)	64 (100)
Don't know	0 (0)	0 (0)	0 (0)	2 (100)	2 (100)
<b>Did you lose weight because you did not have enough money for food?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	4 (5.8)	65 (94.2)	69 (100)
Never	5 (6.4)	10 (12.8)	40 (51.3)	23 (29.5)	78 (100)
Don't know	0 (0)	0 (0)	2 (50.0)	2 (50.0)	4 (100)
<b>Did you or other adults in the household ever not eat for a whole day because money was tight?</b>					<0.001

Yes	0 (0)	0 (0)	0 (0)	44 (100)	44 (100)
No	5 (4.8)	10 (9.6)	46 (44.2)	43 (41.3)	104 (100)
Don't know	0 (0)	0 (0)	0 (0)	3 (100)	3 (100)
<b>If yes, how often did this happen?</b>					<0.001
Only 1 or 2 months				10 (100)	10 (100)
Almost every month/Some months but not every month				33 (100)	33 (100)
Don't know				1 (100)	1 (100)
<b>Have you relied on only a few kinds of low-cost foods (like fast food) to feed children in your household?</b>					<0.001
Sometimes true/often true	0 (0)	1 (1.4)	20 (27.8)	51 (70.8)	72 (100)
Never true	3 (13.6)	5 (22.7)	11 (50.0)	3 (13.6)	22 (100)
<b>Were you not able to feed children in your household healthy foods at each meal ?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	9 (17.0)	44 (83.0)	53 (100)
Never	3 (7.3)	6 (14.6)	22 (53.7)	10 (24.4)	41 (100)
<b>Were the children living in your home not eating enough food because your family could not afford more?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	0 (0)	30 (100)	30 (100)
Never	3 (4.8)	6 (9.5)	31 (49.2)	23 (36.5)	63 (100)
<b>Was the size of the children's meals made smaller because money was tight?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	1 (2.8)	35 (97.2)	36 (100)

Never	3 (5.3)	6 (10.5)	30 (52.6)	18 (31.6)	57 (100)
Don't know	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
<b>Was your child or children ever hungry but you just could not afford more food?</b>					<0.001
Sometimes/often	0 (0)	0 (0)	0 (0)	28 (100)	28 (100)
Never	3 (4.6)	6 (9.2)	31 (47.7)	25 (38.5)	65 (100)
Don't know	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
<b>Did your child or children ever miss meals because money was tight?</b>					0.001
Sometimes/often	0 (0)	0 (0)	0 (0)	17 (100)	17 (100)
Never	3 (3.9)	6 (7.9)	31 (40.8)	36 (47.4)	76 (100)
Don't know	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
<b>If yes, how often did this happen?</b>					
Only 1 or 2 months				12 (100)	12 (100)
Almost every month/Some months but not every month				4 (100)	4 (100)
<b>Did your children ever not eat for a whole day because money was tight?</b>					0.243
Yes	0 (0)	0 (0)	0 (0)	7 (100)	7 (100)
No	3 (3.5)	6 (7.1)	31 (36.5)	45 (52.9)	85 (100)
Don't know	0 (0)	0 (0)	0 (0)	2 (100)	2 (100)



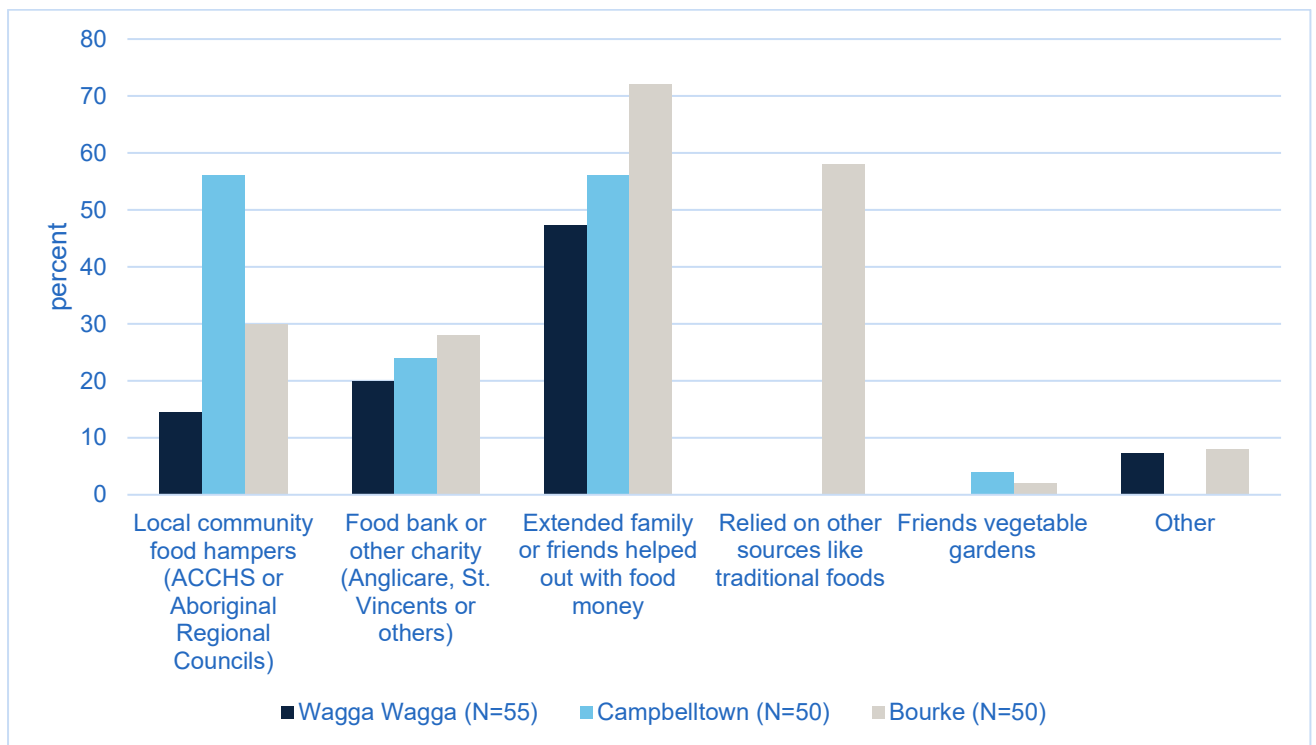
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## Food insecurity problems during COVID-19 and other times

Our results suggest that, during the COVID pandemic, half of the respondents experienced increased problems with money being tight and not being able to afford food, 85.2% worried about food running out before they had enough money to buy more (34.2% reported often and 51% reported sometimes) and 75% had experiences of food not lasting until the next pay and not having enough money to get more food (26.5% reported often and 48.4% reported sometimes) (Table 5). Respondents who reported experiencing greater problems with food insecurity during COVID-19 reported receiving money for food from extended family or friends (58.1%), accessing food relief from local ACCHSs or Aboriginal regional councils (32.9%), Food Bank or other non-Aboriginal charity groups (23.9%) and traditional food sources (18.7%) to put food on the table (Figure 3). All respondents who sourced traditional foods to help out when food did not last until the next pay were from Bourke. Other responses written by participants were attending community events for a feed, using what was available in the pantry and freezer to prepare very basic meals (porridge, can of peas, dampers, scones to fill up the kids), picking up extra work shifts if available, or just go hungry rather than ask for help.

Respondents reported being worried about not having enough money to feed their household at other times (excluding the COVID pandemic) including during Sorry Business (funerals and cultural practices and protocols associated with death) when extended family members stay for long periods (40%), illness or an accident (40%) and emergencies such as bushfires or floods (27.7%, Bourke only). Other reasons included incarceration of one's family members, separation or divorce, birth of a newborn, fuel costs to travel to Sydney to visit sick relatives, increases in energy bills, and unemployment.

**Figure 3:** Combined responses to the lockdowns related question: *If you answered often or sometimes (74.9% of respondents), then where did you find more food or money for food?* Responses are percentages, respondents could select multiple options to this question.



**Table 5** – Respondent’s experiences with food insecurity during the COVID-19 pandemic (n=107)

<b>Food insecurity during the COVID pandemic</b>	Campbelltown N=50 n (%)	Wagga Wagga N=55 n (%)	Bourke N=50 n (%)	Total N=155 n (%)
<i>Did you have increased problems with money being tight and not being able to afford food during the lockdowns?</i>				
Yes, more problems	23 (46.0)	28 (50.9)	27 (54.0)	78 (50.3)
No, fewer problems	18 (36.0)	11 (20.0)	11 (22.0)	40 (25.8)
About the same	9 (18.0)	13 (23.6)	12 (24.0)	34 (21.9)
Don’t know	0 (0)	3 (5.5)	0 (0)	3 (1.9)
<i>Were you worried about food running out before you had enough money to buy more?</i>				
Often	17 (34.0)	18 (32.7)	18 (36.0)	53 (34.2)
Sometimes	25 (50.0)	27 (49.1)	27 (54.0)	79 (51.0)
Never	8 (16.0)	9 (16.4)	5 (10.0)	22 (14.2)
Don’t know	0 (0)	1 (1.8)	0 (0)	1 (0.6)
<i>(During COVID) did it ever happen that food did not last until next pay, and you did have money to get more?</i>				
Often	17 (34.0)	11 (20.0)	13 (26.0)	41 (26.5)
Sometimes	23 (46.0)	24 (43.6)	28 (56.0)	75 (48.4)
Never	10 (20.0)	17 (30.9)	9 (18.0)	36 (23.2)
Don’t know	0 (0)	2 (3.6)	0 (0)	2 (1.3)

Refused	0 (0)	1 (1.8)	0 (0)	1 (0.6)
<i>If answered 'often' or 'sometimes', to the above, where did you find more food or money for food? (Choose all that apply)</i>				
Local community food hampers (ACCHS or Aboriginal Regional Councils)	28 (56.0)	8 (14.5)	15 (30.0)	51 (32.9)
Food bank or other charity (Anglicare, St. Vincent's or others)	12 (24.0)	11 (20.0)	14 (28.0)	37 (23.9)
Extended family or friends helped out with food money	28 (56.0)	26 (47.3)	36 (72.0)	90 (58.1)
Relied other sources like traditional foods	0 (0)	0 (0)	29 (58.0)	29 (18.7)
Friends' vegetable gardens	2 (4.0)	0 (0)	1 (2.0)	3 (1.9)
Other	0 (0)	4 (7.3)	4 (8.0)	8 (5.2)
<i>Aside from the pandemic and the related lockdowns, has there been other events or issues that have caused you to be worried about finding money to feed your household (Choose all that apply)</i>				
An emergency, such as a close bushfire or flooding that meant you needed to evacuate your house suddenly	15 (30.0)	1 (1.8)	27 (54.0)	43 (27.7)
Sorry business that meant lots more family members were staying for awhile	19 (38.0)	14 (25.5)	29 (58.0)	62 (40.0)
A family issue such as sickness or an accident	20 (40.0)	11 (20.0)	31 (62.0)	62 (40.0)
Other	5 (10.0)	4 (7.3)	6 (12.0)	15 (9.7)
Prefer not to say	1 (2.0)	7 (12.7)	1 (2.0)	9 (5.8)
None	15 (30.0)	22 (40.0)	6 (12.0)	43 (27.7)

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# Discussion

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This report presents the first quantitative data on the prevalence and severity of food insecurity among Aboriginal households in NSW, from a pilot survey of 155 Aboriginal adults in urban, regional and remote NSW. Our results indicate that an overwhelming **ninety-six percent of the households experienced food insecurity** to some degree, with a majority being female respondents. Concerningly, 90.1% of households reported experiencing moderate to severe food insecurity, with the highest numbers in families with adults in the 22-44 year and 45-64 year age range, which means that the vast majority of Aboriginal peoples in the areas surveyed were regularly going hungry over the 12 months prior to the survey. Survey data for two sites (Campbelltown in urban NSW and Wagga Wagga in regional NSW) was collected between October 2022 and December 2022, a time when social distancing restrictions were being eased after three years of the COVID-19 pandemic. Survey data collection for Bourke in remote northwest NSW took place in March 2023, in the aftermath of a major flooding event in 2022 and following three years of COVID-19 related community closures. The closures around Bourke resulted in limited mobility and delivery of food packages in both Bourke and the nearby community of Enngonia. The floods devastated many nearby communities and isolated Bourke between Nov-Dec 2022. Clearly, the effects of the pandemic and weather events have contributed to the reported extreme levels of food security reported in this study and have put a new spotlight on this issue.

There are other emerging reports of much higher levels of food insecurity being experienced by people living in Australia (23, 24) and across the world (25) during the COVID-19 pandemic. COVID-19 has brought to light the fragility of food security within Australia, both in terms of the security of food supply chains and the demographics of those experiencing food insecurity. It has exacerbated pre-existing issues and presented numerous challenges for Aboriginal peoples. In recent times, food insecurity challenges faced by Aboriginal peoples have been driven by transitory short-term shocks, such as environmental factors (e.g., floods) and the unforeseen circumstances associated with the pandemic as well as chronic disadvantage, such as poor income and housing (26). These shocks have highlighted Aboriginal peoples' strengths and capability for implementing appropriate targeted responses (1, 27, 28). For example, First Nations health leaders, chief executive officers of ACCHSs, and others responded rapidly to the news of the pandemic. They lobbied governments (federal, state, territory) to close communities, to help with personal protective equipment, testing and contact tracing, prepared sophisticated videos for social media about COVID-19 and what people should do, trained their staff, organised the homeless in safe accommodation, and focused on the elders and those with serious illnesses and ensured services were implemented and culturally appropriate. The result of this First Nations-led response has shown how effective (and extremely cost-effective) giving power and capacity to Indigenous leaders is (29).

Data from the present study has highlighted that Aboriginal and Torres Strait Islander peoples living in NSW, regardless of geographical location, are extremely vulnerable to food insecurity. **Eighty-seven percent of the Aboriginal households in urban and regional NSW (Campbelltown and Wagga Wagga)** in this study were found to experience moderate to severe food insecurity. This is an

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alarming finding considering that 80% of the Aboriginal population in NSW resides in urban and inner regional (non-remote) locations. Despite this, food insecurity in non-remote areas remains a largely under researched and often neglected issue (30, 31). Qualitative evidence obtained by the Sax Institute from the two Aboriginal communities in Tharawal and Wagga Wagga **prior to COVID-19** suggested low income, inter-generational poverty, on-going impacts of colonisation, inadequate public transport infrastructure, unaffordability of health food, the abundance and availability of unhealthy food and limitations of non-Aboriginal food relief services as key factors contributing to food insecurity in their households (31). Community members in these areas suggested a number of potential solutions to help ease food insecurity in the two communities, including the introduction of school breakfast programs, cooking and budgeting programs, community vegetable gardens, increased transport options for the community and establishment of subsidised food programs that cater to the communities' needs. Aboriginal community members also felt strongly that Aboriginal culture and values should be at the heart of new food security initiatives, stating that it would positively impact on community participation, mental health, and overall wellbeing (31).

**Almost all (96%) of the Aboriginal households surveyed in Bourke in this study reported experiencing moderate to severe food insecurity.** This is extremely concerning as food insecurity continues to be a serious and an ongoing issue in remote Aboriginal communities. The unstable supply of quality and affordable food due to poor infrastructure, and the high costs of living and operating stores remotely are among key factors contributing for this problem. Recent extreme weather events have only made it harder for remote communities to stay food secure. The Federal Parliamentary Indigenous Affairs Committee following its inquiry on food pricing and food security in remote communities in 2020 noted in its report that while there was a lack of evidence of systemic price-gouging taking place in remote community stores, food costs were very high in many remote communities, reinforcing long-held concerns regarding food security for Aboriginal and Torres Strait Islander Australians who are living remotely (32). It has called on the Federal Government to partner with First Nations peoples and state and territory governments to develop a strategy to tackle long-standing food security issues in remote Indigenous communities. The government has supported or provided in-principle support for 10 of the 16 recommendations made in the report.

In our study, significant associations between educational status (used as a proxy indicator for socio-economic status in this study) and food security categories were observed. The inquiry on food security in remote Aboriginal communities heard that poverty is the single greatest contributor to food insecurity, and that raising income is essential to stop people going hungry. Widespread disadvantage has resulted in limited access to education and employment opportunities within many Aboriginal populations and have resulted in significant income disparities between Aboriginal and non-Aboriginal populations. The unemployment rate for Aboriginal and Torres Strait Islander peoples can be 3 times that of non-Aboriginal and Torres Strait Islander peoples (33), with Aboriginal men earning up to 25% less and women earning 18% less than their non-Aboriginal counterparts, figures that have changed little in the past 30 years and with much of the difference related to educational attainment (34).

A strength of this study is that it is the first to use the 18-item USDA-HFSSM tool to provide a comprehensive understanding of the prevalence and severity of food insecurity among Aboriginal adults in NSW. The study was done in partnership with ACCHSs and Aboriginal Community Organisations and conducted by local trained Aboriginal research officers, which allowed participants to safely share their experiences of food insecurity. This 18-item tool has also provided insight to the impacts of food insecurity for both adults and children. While there are clear findings from this pilot survey, there are several limitations that need to be acknowledged. Due to the small sample size, it

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was not possible to detect associations between demographic and household characteristics and food security categories that could exist. This study was cross-sectional in design and the analyses are descriptive in nature. It was conducted in only three communities in NSW and findings need to be interpreted with caution. More data is needed to better understand the scale and severity of food insecurity among Aboriginal households to inform the development of policy and programs.



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# Guidances

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- That immediate discussions are held within and amongst government officials, Aboriginal leaders and Elders at Tharawal, RivMed, BACHS and Maranguka to discuss the findings and short-term community-led strategies and longer-term systemic actions to address the chronic food insecurity situation in their communities.
- That leaders and Elders at BACHS and community members led by the Bourke Tribal Council with Maranguka are invited to a consultation by the government to discuss options and source food relief to reduce the acute impact severe food insecurity is having on that community. This should form part of and be in addition to any longer-term systemic actions to address food insecurity in Bourke.
- That these findings will inform the development of a comprehensive study that will include a larger sample from a wider geographical region and will have the potential to provide evidence to inform policy and programs.
- More effort is needed to address the high levels of food insecurity observed in non-remote areas, including research to understand strategies that work and implement them through community-led programs that ensure access to healthy food is regular and affordable.
- That findings will be communicated widely amongst NSW Government agencies and Aboriginal health representative and advocacy bodies following feedback from local ACCHSs and Aboriginal Community Organisations.
- That several additional sites be considered for further household food insecurity surveys, continued in partnership with ACCHSs and local Aboriginal research officers employed where possible. This will provide a better understanding of the true prevalence and distribution of food insecurity severity amongst households in other regions across the state and to also determine key drivers of food security through quantitative analysis with a larger sample size.
- That further work is required to understand the complex and on-going impacts colonisation has had and continues to have on food security among Aboriginal peoples.
- That Aboriginal and Torres Strait Islander communities to play a key role in the co-design of policies and actions to address food insecurity.

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# Appendices

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## Appendix 1 Original USDA-HFSSM-18 Survey instrument and local adaptation of the survey



USDA hh2012.pdf Appendix 1a



UnderstandingAboriginalFamilies\_Survey Appendix 1b

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## Appendix 2 Additional COVID questions

Page 1

### Some additional questions about the lockdowns and impact of the pandemic

**We have a few questions now about how you lived during the COVID-19 lockdowns and how you find ways to access food for your household.**

Thinking about the two years of COVID and lockdowns from 2020 and 2021. Did you have increased problems with running out of food and not being able to afford to buy more during these times (compared with before the pandemic?)

- Yes more problems  
 No fewer problems  
 About the same  
 Don't know

During the pandemic, from 2020 through to now, were you worried about whether food would run out before you had enough money to buy more?

- Often  
 Sometimes  
 Never  
 Don't know  
 Refused

During COVID did it ever happen that food bought did not last until next pay AND you did not have money to get more?

- Often  
 Sometimes  
 Never  
 Don't know  
 Refused

If you answered often or sometimes, then where did you get find additional food or money for food? Select all the options that applied to you:

- Local community food hampers, eg provided by Aboriginal regional councils or Aboriginal medical service  
 Other charity or food bank (eg. Anglicare, St Vinnies, or others)  
 Extended family or friends helped out with food money  
 Traditional foods  
 Friends vege gardens  
 Other

Please describe this here

(covid food)

Aside from the pandemic and the related lockdowns, has there been other events or issues that have caused you to be worried about finding money to feed your household? Choose all that have applied to you

- An emergency, such as a close bushfire or flooding event that meant you needed to evacuate your house suddenly  
 Sorry business that meant lots more family members were staying for awhile.  
 A family issue such as sickness or an accident  
 Other  
 Prefer not to say  
 None

Please describe this here

(covid food)

10/10/2022 8:33am

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## Appendix 3 Location specific HFSSM questions and responses

<b>Wagga Wagga</b>											
Question	Food secure		Marginal food insecurity		Moderate food insecurity		Severe food insecurity		Total		
	n	%	n	%	n	%	n	%	n	%	
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>											
Sometimes true/often true	0	0	3	6.7	15	33.3	27	60.0	45	100	
Never true	1	12.5	2	25.0	4	50.0	1	12.5	8	100	
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100	
<b>Have there been times the food you bought has not lasted until next pay?</b>											
Sometimes true/often true	0	0	1	2.3	15	34.1	28	63.6	44	100	
Never true	1	11.1	4	44.4	4	44.4	0	0	9	100	
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100	
<b>Could you not afford to eat healthy foods at each meal?</b>											
Sometimes true/often true	0	0	2	4.7	14	32.6	27	62.8	43	100	
Never true	1	10.0	3	30.0	5	50.0	1	10.0	10	100	

Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100
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**Did any adults in your household ever cut the size of your meals or skip meals because money was tight?**

Sometimes/often	0	0	0	0	8	26.7	22	73.3	30	100
Never	1	4.8	5	23.8	11	52.4	4	19.0	21	100
Don't know	0	0	0	0	0	0	2	100	2	100
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100

**How often did this happen?**

Only 1 or 2 months					4	50.0	4	50.0	8	100
Almost every month/Some months but not every month					3	15.0	17	85.0	20	100
Don't know					1	50.0	1	50.0	2	100
Total					8	26.7	22	73.3	30	100

**Did you ever eat less than you felt you should because money was tight?**

Sometimes/often	0	0	1	2.6	12	30.8	26	66.7	39	100
Never	1	7.1	4	28.6	7	50.0	2	14.3	14	100
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100

**Were you ever hungry but didn't eat because you couldn't afford enough food?**

Sometimes/often	0	0	0	0	0	0	24	100	24	100
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Never	1	3.4	5	17.2	19	65.5	4	13.8	29	100
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100
<b>Did you lose weight because you did not have enough money for food?</b>										
Sometimes/often	0	0	0	0	1	4.5	21	95.5	22	100
Never	1	3.3	5	16.7	17	56.7	7	23.3	30	100
Don't know	0	0	0	0	1	100	0	0	1	100
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100
<b>Did you or other adults in the household ever not eat for a whole day because money was tight?</b>										
Yes	0	0	0	0	0	0	10	100	10	100
No	1	2.4	5	12.2	19	46.3	16	39.0	41	100
Don't know	0	0	0	0	0	0	2	100	2	100
Total	1	1.9	5	9.4	19	35.8	28	52.8	53	100
<b>If yes, how often did this happen?</b>										
Only 1 or 2 months							4	100	4	100
Almost every month/Some months but not every month							5	100	5	100
Don't know							1	100	1	100

Total							10	100	10	100
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**Have you relied on only a few kinds of low-cost foods (like fast food) to feed children in your household, because money was tight?**

Sometimes true/often true	0	0	0	0	10	37.0	17	63.0	27	100
Never true	1	11.1	3	33.3	4	44.4	1	11.1	9	100
Total	1	2.8	3	8.3	14	38.9	18	50.0	36	100

**Were you not able to feed children in your household healthy foods at each meal because you could not afford to?**

Sometimes/often	0	0	0	0	5	27.8	13	72.2	18	100
Never	1	5.6	3	16.7	9	50.0	5	27.8	18	100
Total	1	2.8	3	8.3	14	38.9	18	50	36	100

**Were the children living in your home not eating enough food because your family could not afford enough food?**

Sometimes/often	0	0	0	0	0	0	11	100	11	100
Never	1	4.0	3	12.0	14	56.0	7	28.0	25	100
Total	1	2.8	3	8.3	14	38.9	18	50	36	100

**Was the size of the children's meals made smaller because money was tight?**

Sometimes/often	0	0	0	0	0	0	12	100	12	100
Never	1	4.2	3	12.5	14	58.3	6	25.0	24	100
Total	1	2.8	3	8.3	14	38.9	18	50.0	36	100

**Was your child or children ever hungry but you just could not afford more food?**

Sometimes/often	0	0	0	0	0	0	11	100	11	100
Never	1	4.0	3	12.0	14	56.0	7	28.0	25	100
Total	1	2.8	3	8.3	14	38.9	18	50.0	36	100
<b>Did your child or children ever miss meals because money was tight?</b>										
Sometimes/often	0	0	0	0	0	0	5	100	5	100
Never	1	3.3	3	10.0	14	46.7	12	40.0	30	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	1	2.8	3	8.3	14	38.9	18	50.0	36	100
<b>If yes, how often did this happen?</b>										
Only 1 or 2 months							3	100	3	100
Almost every month/Some months but not every month							2	100	2	100
Total							5	100	5	100
Yes	0	0	0	0	0	0	1	100	1	100
No	1	2.9	3	8.8	14	41.2	16	47.1	34	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	1	2.8	3	8.3	14	38.9	18	50.0	36	100



## Campbelltown

Question	Food secure		Marginal food insecurity		Moderate food insecurity		Severe food insecurity		Total	
	n	%	n	%	n	%	n	%	n	%
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>										
Sometimes true/often true	0	0	1	2.4	15	35.7	26	61.9	42	100
Never true	4	57.1	2	28.6	1	14.3	0	0	7	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Have there been times the food you bought has not lasted until next pay?</b>										
Sometimes true/often true	0	0	2	5.0	12	30.0	26	65.0	40	100
Never true	4	44.4	1	11.1	4	44.4	0	0	9	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Could you not afford to eat healthy foods at each meal?</b>										
Sometimes true/often true	0	0	0	0	14	35.0	26	65.0	40	100
Never true	4	44.4	3	33.3	2	22.2	0	0	9	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Did any adults in your household ever cut the size of your meals or skip meals because money was tight?</b>										
Sometimes/often	0	0	0	0	5	16.7	25	83.3	30	100

Never	4	21.1	3	15.8	11	57.9	1	5.3	19	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>How often did this happen?</b>										
Only 1 or 2 months					2	50.0	2	50.0	4	100
Almost every month/Some months but not every month					3	11.5	23	88.5	26	100
Total					5	16.7	25	83.3	30	100
<b>Did you ever eat less than you felt you should because money was tight?</b>										
Sometimes/often	0	0	0	0	9	26.5	25	73.5	34	100
Never	4	26.7	3	20.0	7	46.7	1	6.7	15	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Were you ever hungry but didn't eat because you couldn't afford enough food?</b>										
Sometimes/often	0	0	0	0	3	10.7	25	89.3	28	100
Never	4	19.0	3	14.3	13	61.9	1	4.8	21	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Did you lose weight because you did not have enough money for food?</b>										
Sometimes/often	0	0	0	0	2	10.0	18	90.0	20	100
Never	4	14.8	3	11.1	14	51.9	6	22.2	27	100

Don't know	0	0	0	0	0	0	2	100	2	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Did you or other adults in the household ever not eat for a whole day because money was tight?</b>										
Yes	0	0	0	0	0	0	12	100	12	100
No	4	11.1	3	8.3	16	44.4	13	36.1	36	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	4	8.2	3	6.1	16	32.7	26	53.1	49	100
<b>Did you or other adults in the household ever not eat for a whole day because money was tight?</b>										
Only 1 or 2 months							1	100	1	100
Almost every month/Some months but not every month							11	100	11	100
Total							12	100	12	100
<b>Have you relied on only a few kinds of low-cost foods (like fast food) to feed children in your household, because money was tight?</b>										
Sometimes true/often true	0	0	1	4.0	7	28.0	17	68.0	25	100
Never true	2	22.2	0	0	6	66.7	1	11.1	9	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100
<b>Were you not able to feed children in your household healthy foods at each meal because you could not afford to?</b>										
Sometimes/often	0	0	0	0	2	11.1	16	88.9	18	100

Never	2	12.5	1	6.3	11	68.8	2	12.5	16	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100

**Were the children living in your home not eating enough food because your family could not afford enough food?**

Sometimes/often	0	0	0	0	0	0	10	100	10	100
Never	2	8.3	1	4.2	13	54.2	8	33.3	24	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100

**Was the size of the children's meals made smaller because money was tight?**

Sometimes/often	0	0	0	0	1	7.1	13	92.9	14	100
Never	2	10.5	1	5.3	12	63.2	4	21.1	19	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100

**Was your child or children ever hungry but you just could not afford more food?**

Sometimes/often	0	0	0	0	0	0	10	100	10	100
Never	2	8.7	1	4.3	13	56.5	7	30.4	23	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100

**Did your child or children ever miss meals because money was tight?**

Sometimes/often	0	0	0	0	0	0	7	100	7	100
Never	2	7.4	1	3.7	13	48.1	11	40.7	27	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100
<b>If yes, how often did this happen?</b>										
Only 1 or 2 months							7	100	7	100
Total							7	100	7	100
<b>Did your children ever not eat for a whole day because money was tight?</b>										
Yes	0	0	0	0	0	0	3	100	3	100
No	2	6.7	1	3.3	13	43.3	14	46.7	30	100
Don't know	0	0	0	0	0	0	1	100	1	100
Total	2	5.9	1	2.9	13	38.2	18	52.9	34	100

## Bourke

Question	Food secure		Marginal food insecurity		Moderate food insecurity		Severe food insecurity		Total	
	n	%	n	%	n	%	n	%	n	%
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>										
Sometimes true/often true	0		1	2.2	9	19.6	36	78.3	46	100
Never true	0		1	33.3	2	66.7	0	0	3	100
Total	0		2	4.1	11	22.4	36	73.5	49	100
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>										
Sometimes true/often true	0		1	2.1	10	21.3	36	76.6	47	100
Never true	0		1	50.0	1	50.0	0	0	2	100
Total	0		2	4.1	11	22.4	36	73.5	49	100
<b>Were you worried about whether food would run out before you had enough money to buy more?</b>										
Sometimes true/often true	0		1	2.2	8	17.8	36	80.0	45	100
Never true	0		1	25.0	3	75.0	0	0	4	100
Total	0		2	4.1	11	22.4	36	73.5	49	100
<b>Did any adults in your household ever cut the size of your meals or skip meals because money was tight?</b>										

Sometimes/often	0	0	0	6	14.3	36	85.7	42	100
Never	0	2	28.6	5	71.4	0	0	7	100
Total	0	2	4.1	11	22.4	36	73.5	49	100
<b>How often did this happen?</b>									
Only 1 or 2 months	0	0		1	25.0	3	75.0	4	100
Almost every month/Some months but not every month	0	0		5	13.5	32	86.5	37	100
Don't know	0	0		0	0	1	100	1	100
Total	0	0		6	14.3	36	85.7	42	100
<b>Did you ever eat less than you felt you should because money was tight?</b>									
Sometimes/often	0	0	0	7	16.3	36	83.7	43	100
Never	0	2	33.3	4	66.7	0	0	6	100
Total	0	2	4.1	11	22.4	36	73.5	49	100
<b>Were you ever hungry but didn't eat because you couldn't afford enough food?</b>									
Sometimes/often	0	0	0	0	0	33	100	33	100
Never	0	2	14.3	11	78.6	1	7.1	14	100
Don't know	0	0	0	0	0	2	100	2	100

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Total	0	2	4.1	11	22.4	36	73.5	49	100
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**Did you lose weight because you did not have enough money for food?**

Sometimes/often	0	0	0	1	3.7	26	96.3	27	100
Never	0	2	9.5	9	42.9	10	47.6	21	100
Don't know	0	0	0	1	100	0	0	1	100
Total	0	2	4.1	11	22.4	36	73.5	49	100

**Did you or other adults in the household ever not eat for a whole day because money was tight?**

Yes	0	0	0	0	0	22	100	22	100
No	0	2	7.4	11	40.7	14	51.9	27	100
Total	0	2	4.1	11	22.4	36	73.5	49	100

**If yes, how often did this happen?**

Only 1 or 2 months	0					5	100	5	100
Almost every month/Some months but not every month	0					17	100	17	100
Total	0					22	100	22	100

**Have you relied on only a few kinds of low-cost foods (like fast food) to feed children in your household, because money was tight?**



Sometimes true/often true	0	0	0	3	15.0	17	85.0	20	100
Never true	0	2	50.0	1	25.0	1	25.0	4	100
Total	0	2	8.3	4	16.7	18	75.0	24	100
<b>Were you not able to feed children in your household healthy foods at each meal because you could not afford to?</b>									
Sometimes/often	0	0	0	2	11.8	15	88.2	17	100
Never	0	2	28.6	2	28.6	3	42.9	7	100
Total	0	2	8.3	4	16.7	18	75.0	24	100
<b>Were the children living in your home not eating enough food because your family could not afford enough food?</b>									
Sometimes/often	0	0	0	0	0	9	100	9	100
Never	0	2	14.3	4	28.6	8	57.1	14	100
Total	0	2	8.7	4	17.4	17	73.9	23	100
<b>Was the size of the children's meals made smaller because money was tight?</b>									
Sometimes/often	0	0	0	0	0	10	100	10	100
Never	0	2	14.3	4	28.6	8	57.1	14	100
Total	0	2	8.3	4	16.7	18	75.0	24	100
<b>Was your child or children ever hungry but you just could not afford more food?</b>									
Sometimes/often	0	0	0	0	0	7	100	7	100

Never	0	2	11.8	4	23.5	11	64.7	17	100
Total	0	2	8.3	4	16.7	18	75.0	24	100
<b>Did your child or children ever miss meals because money was tight?</b>									
Sometimes/often	0	0	0	0	0	5	100	5	100
Never	0	2	10.5	4	21.1	13	68.4	19	100
Total	0	2	8.3	4	16.7	18	75.0	24	100
<b>If yes, how often did this happen?</b>									
Only 1 or 2 months	0					2	100	2	100
Almost every month/Some months but not every month	0					2	100	2	100
Total	0					4	100	4	100
<b>Did your children ever not eat for a whole day because money was tight?</b>									
Yes	0	0	0	0	0	3	100	3	100
No	0	2	9.5	4	19.0	15	71.4	21	100
Total	0	2	8.3	4	16.7	18	75.0	24	100

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## Appendix 4 Survey field work observations in Bourke

### Observations from food security survey implementation in Bourke, NSW during February 2023

The Sax Institute was funded to support the study of food security in three local sites in NSW in 2022. Due to delays travelling to Bourke to complete the final location, the survey work in Bourke was only able to commence in February 2023. The Sax Institute team who trained local Bourke Aboriginal Corporation Health Service (BACHS) staff completed this work in record time and gained much insight into the local community. Whilst the following descriptive details of the survey work in Bourke represent useful and relevant contextual information regarding the lives and families of Bourke, they are only anecdotal observations.

#### Day 1

- Training the local Aboriginal Health Workers in the content and conduct of the study, answering questions about confidentiality and sensitivities and privacy and consent. The AHWs conducted two interviews in the BACHS to become comfortable with the survey protocol and procedures, then all other **interviews were out in community**, by stopping people in the street, and driving around and beeping horns outside homes to get people's attention and then shouting out the car window to see if they wanted to do the survey.
- To escape the heat, people would climb into the back seat of the car (in the air-con) where we would administer the survey. The majority of interviews were conducted by the survey team, with the AHWs reading out questions.
- At the time of conducting Bourke fieldwork, it is a **couple of days before benefits payments** are due so funds are stretched across all the community
- People were very appreciative of a \$50 meat voucher, making recruitment relatively easy.
- Survey team were distressed by the numbers of people saying they often **went without a meal** and when prompted 'how often' they volunteer this is weekly or fortnightly occurrence.
- Quite a few people mentioned **traditional sources** of food; living off the land is not uncommon, especially when money is getting tight. The types of traditional foods people told us about included:
  - Kangaroo, emu and even echidna when you can get it
  - Fishing in the Darling River for yellow belly, trout and yabbies
- During **COVID lockdowns** during Aug-Oct 2021 (when mobility was restricted and people were unable to leave town) people found it stressful if they couldn't go on Country to get traditional foods. There were many mentions of the army and police enforcing town boundary restrictions which meant people couldn't hunt. Where people live close to the river they were still able to fish.
- **Remote communities** such as Enngonia (a very small town about 100km from Bourke) really struggled during COVID lockdowns. Enngonia relies on Bourke for employment and all of their supplies.
  - During lockdowns, there was a one-month period where no supplies were delivered to town. Apparently, army and police turned away charities who had arranged food deliveries to Enngonia leaving many in the community with severe food shortages (and limited medications)
  - In these instances, people talked about 'living off pantry rations'. One fellow told us he resorted to stealing a sheep cos his family were hungry and they couldn't go on Country to get traditional foods.

- A couple of people told us that, while food supplies (and work) were short during COVID, they were better off than before COVID because of the **food hampers** that were being delivered (more than what they were surviving on previously):
  - We heard a number of times that, while the hampers were appreciated, a lot of the stuff in the hampers people didn't know what to do with it (e.g. lentils) or they had no meat to go with any of the dry ingredients to make a meal
- The **recent floods (Nov-Dec 2022)** had a major impact on people in Bourke, especially out at 'The Village' (Aboriginal housing) where people were evacuated into town or to Dubbo for 6 weeks while the flood waters receded.

## Day 2

- Further surveys in the community including the **Maranguka weaving group**
- **Food insecurity appears to be at the high end and possibly understated.** The extent of insecurity with some people (young mums in particular) choosing 'sometimes' rather than 'often' when it comes to reducing meal sizes or skipping meals. Even though we re-iterate the importance of being straight and confidentiality, their body language suggests they feel shame responding to these questions.
- At the women's group today I had 3 ladies in their 60s and 70s with limited access to school education in their younger years. These parents & grandparents are stating they'll **forgo food to make sure the kids are fed**; they're good at using what's in the cupboard when money is tight (making damper, Johnny Cakes, bread)
- Again, **wild meat** comes up as a common source of food (kangaroo, emu, echidna, fish)
- One mum today who wanted to ensure sure that the outcome of the research wouldn't be the introduction of Basics Cards in the region. Team explained that the CEOs of AMS and Maranguka will be given the research findings and are advocating for what they know the community wants and needs.

## Day 3



- The survey team attended the regular community 'mums & bubs group' in the morning at the BACHS. Not only did we finish the interviews but we had some great yarns with the AMIHS health worker and the local GP around local issues.
- A couple of observations from this morning's interviews:
  - All of the mums we spoke to were **single mums**
  - All were **worried** about cutting down on food for themselves
  - But **bub always had enough** to eat
  - One mum was breastfeeding her 1 year-old. She was saying that she **can't afford to stop** breastfeeding, she even went to the doctor to get medication to produce more milk
  - Mums were telling us that you can't give birth at the local hospital here in Bourke (there's a birthing suite at the local hospital, but no midwives to staff it). Pregnant mums have to **drive 370km to Dubbo to give birth** and many mums have no support network in Dubbo.
- One of the earlier survey respondents was chuffed about being able to do a big cook-up the previous night, feeding three families, with the meat she got at the butcher yesterday.

*Photo shows a baby and his aunty at the local BACHS 'mums and bubs group' after completing the food security survey, Bourke, NSW. Many thanks to the staff of Bourke Aboriginal Corporation Health Service who were keen to lead this research study in their community.*

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# Understanding Aboriginal families access to food and food affordability in NSW

The following questions are about food eaten by everyone in your household in the last 12 months since October of last year, and whether you were able to afford the food you need to live a healthy and normal life. We appreciate your honesty and understand that sometimes answering these questions about finding the money for healthy food can be hard or bring back bad memories. This survey will help the Aboriginal Medical Service and researcher team to understand how they can better support Aboriginal families with access to healthy food for their families. We won't ask your name and address and the researchers will NOT know who you are. Your responses will be completely anonymous. We are interested in your views whether or not you have children living in your home right now. Children that live with you regularly, regardless of their family status are important. These questions should only take between 2 to 5 minutes to answer. If you need any help with what the questions mean our local research staff are happy to help you. We would appreciate answers to all these questions. If your answer is a clear 'Yes' please select 'Often true', and if it is 'No' please select 'Never true' and if you are a bit unsure you could choose the 'sometimes' option. In rare cases you may wish to say 'Don't know'. We would appreciate if you could talk to your local Aboriginal research officer at your location for help with any doubts. After you've finished and pressed 'submit' please take this device to the local researcher. Thank you for contributing to this work.

**Simone Sherriff and Jacqui Davison**

**Aboriginal Health Team at the Sax Institute**    [saxinstitute.org.au](http://saxinstitute.org.au)

First we'll start with a few general questions about you and your household.

Are you male or female?

male     female     prefer not to say

What is your age?

- 18-24 years old
- 25-44 years old
- 45-64 years old
- 65 years or above

How many adults usually live in your household?

- 1
- 2
- 3
- 4
- 5 or more

---

How many children (under 18 years) usually live in your household? These can include extended family, friend's children or children in your temporary care

0  
 1  
 2  
 3  
 4  
 5  
 6 or more

---

In the last 12 months, were you worried about whether food would run out before you had enough money to buy more? Was that often true, sometimes true, or never true for your household?

Often true/Yes  
 Sometimes true  
 Never true/No  
 Don't know  
 Refused

---

In the last 12 months, have there been times the food you bought has not lasted until next pay. Was that often, sometimes, or never true for your household?

Often true/Yes  
 Sometimes true  
 Never true/No  
 Don't know  
 Refused

---

In the last 12 months, could you not afford to eat healthy foods at each meal? Was that often, sometimes, or never true for your household?

Often true/Yes  
 Sometimes true  
 Never true/No  
 Don't know  
 Refused

---

In the last 12 months, did any adults in your household ever cut the size of your meals or skip meals because money was tight?

Often  
 Sometimes  
 Never  
 Don't know  
 Refused

---

How often did this happen - almost every month, some months but not every month, or in only 1 or 2 months?

Almost every month  
 Some months but not every month  
 Only 1 or 2 months  
 Don't know  
 Refused

---

In the last 12 months, did you ever eat less than you felt you should because money was tight?

Often  
 Sometimes  
 Never  
 Don't know  
 Refused

---

In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?

Often  
 Sometimes  
 Never  
 Don't know  
 Refused

---

In the last 12 months, did you lose weight because you did not have enough money for food?

Often  
 Sometimes  
 Never  
 Don't know  
 Refused

---



---

In the last 12 months, did you or other adults in the household ever not eat for a whole day because money was tight?

- Yes
- No
- Don't know
- Refused

---

If yes, how often did this happen?

- Almost every month
- Some months but not every month
- Only 1 or 2 months
- Don't know
- Refused

---

The next questions are about children that live in your home in your care. They could be your own children or part of your extended family, including those that are living with you temporarily. We know that questions about feeding your own children can bring up strong feelings about caring for kids, but we would like you to be as honest as you can. Your answers are completely anonymous.

let's continue

---

In the 12 months, have you relied on only a few kinds of low-cost foods (like fast food) to feed children in your household, because money was tight? Was that often, sometimes, or never true for your household?

- Often true
- Sometimes true
- Never true
- Don't know
- Refused

---

In the last 12 months, were you not able to feed children in your household healthy foods at each meal because you could not afford to?

- Often
- Sometimes
- Never
- Don't know
- Refused

---

In the last 12 months, were the children living in your home not eating enough food because your family could not afford enough food?

- Often
- Sometimes
- Never
- Don't know
- Refused

---

In the last 12 months, was the size of the children's meals made smaller because money was tight?

- Often
- Sometimes
- Never
- Don't know
- Refused

---

In the last 12 months, was your child or children ever hungry but you just could not afford more food?

- Often
- Sometimes
- Never
- Don't know
- Refused

---

In the last 12 months, did your child or children ever miss meals because money was tight?

- Often
- Sometimes
- Never
- Don't know
- Refused

---

If yes, how often did this happen?

- Almost every month
- Some months but not every month
- Only 1 or 2 months
- Don't know
- Refused

---

In the last 12 months, did your children ever not eat for a whole day because money was tight?

- Yes
- No
- Don't know
- Refused

**Thank you for completing these questions.**

**We now have a few questions about how you lived during the COVID-19 lockdowns and how you found ways to access food for your household.**

Compared to before COVID, did you have more problems with money being tight and not being able to afford food during the lockdowns?

- Yes more problems  
 No fewer problems  
 About the same  
 Don't know

Since COVID - from 2020 through to now - were you worried about whether food would run out before you had enough money to buy more?

- Often  
 Sometimes  
 Never  
 Don't know  
 Refused

During COVID did it ever happen that food bought did not last until next pay AND you did not have money to get more?

- Often    Sometimes    Never    Don't know    Refused

If you answered often or sometimes, then where did you get find more food or money for food? Select all the options that applied to you:

- Local community food hampers, eg provided by Aboriginal regional councils or Aboriginal medical service  
 Other charity or food bank (eg. Anglicare, St Vinnies, or others)  
 Extended family or friends helped out with food money  
 Traditional foods  
 Friends vege gardens  
 Other

Please describe this briefly here

\_\_\_\_\_

Aside from COVID and the related lockdowns, has there been other events or issues that have caused you to be worried about finding money to feed your household ? Choose all that have applied to you

- An emergency, such as a close bushfire or flooding event that meant you needed to evacuate your house suddenly  
 Sorry business that meant lots more family members were staying for awhile.  
 A family issue such as sickness or an accident  
 Other  
 Prefer not to say  
 None

Please describe this briefly here

\_\_\_\_\_

We just have a couple of final questions please.  
What is the housing status of the home you are currently living in?  
Select the one that best applies to you

- Renting in private housing  
 Renting in public or social housing  
 Own our house with a mortgage  
 Own our house out right

---

What is the highest educational qualification of anyone in your household (over 15 years) that usually live with you?  
Please selected the highest one that applies.

- 1. High School (Year 7 to Year 11)
- 2. Completed HSC (Year 12)
- 3. Completed TAFE qualification
- 4. Completed undergraduate degree at university (Bachelor degree or associate degree)
- 5. Completed post-graduate degree at university (Masters or PhD)
- Not sure

---

Which local government area are you usually a resident of?

- Wagga Wagga
- Campbelltown
- Bourke
- Other

---

Your postcode or local government area name

\_\_\_\_\_

---

Thank you very much for your assistance with this project. Your time and contributions are valued. Once you have pressed 'Submit' please see the Research Officer regarding your voucher.

(Optional) If you you like to receive a copy of the project results please include your email address here:

\_\_\_\_\_

**U.S. HOUSEHOLD FOOD SECURITY SURVEY MODULE:  
THREE-STAGE DESIGN, WITH SCREENERS  
Economic Research Service, USDA  
September 2012**

**Revision Notes:** The food security questions are essentially unchanged from those in the original module first implemented in 1995 and described previously in this document.

***September 2012:***

- Corrected skip specifications in AD5
- Added coding specifications for “How many days” for 30-day version of AD1a and AD5a.

***July 2008:***

- Wording of resource constraint in AD2 was corrected to, “...because there wasn’t enough money for food” to be consistent with the intention of the September 2006 revision.
- Corrected errors in “Coding Responses” Section

***September 2006:***

- Minor changes were introduced to standardize wording of the resource constraint in most questions to read, “...because there wasn't enough money for food.”
- Question order was changed to group the child-referenced questions following the household- and adult-referenced questions. The Committee on National Statistics panel that reviewed the food security measurement methods in 2004-06 recommended this change to reduce cognitive burden on respondents. Conforming changes in screening specifications were also made. NOTE: Question numbers were revised to reflect the new question order.
- Follow up questions to the food sufficiency question (HH1) that were included in earlier versions of the module have been omitted.
- User notes following the questionnaire have been revised to be consistent with current practice and with new labels for ranges of food security and food insecurity introduced by USDA in 2006.

**Transition into Module (administered to all households):**

These next questions are about the food eaten in your household in the last 12 months, since (current month) of last year and whether you were able to afford the food you need.

**Optional USDA Food Sufficiency Question/Screeners: Question HH1 (This question is optional. It is not used to calculate any of the food security scales. It may be used in conjunction with income as a preliminary screener to reduce respondent burden for high income households).**

HH1. [IF ONE PERSON IN HOUSEHOLD, USE "I" IN PARENTHETICALS, OTHERWISE, USE "WE."]

Which of these statements best describes the food eaten in your household in the last 12 months: —enough of the kinds of food (I/we) want to eat; —enough, but not always the kinds of food (I/we) want; —sometimes not enough to eat; or, —often not enough to eat?

- [1] Enough of the kinds of food we want to eat
- [2] Enough but not always the kinds of food we want
- [3] Sometimes not enough to eat
- [4] Often not enough to eat
- [ ] DK or Refused

**Household Stage 1: Questions HH2-HH4 (asked of all households; begin scale items).**

[IF SINGLE ADULT IN HOUSEHOLD, USE "I," "MY," AND "YOU" IN PARENTHETICALS; OTHERWISE, USE "WE," "OUR," AND "YOUR HOUSEHOLD."]

HH2. Now I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 12 months—that is, since last (name of current month).

The first statement is "(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more." Was that often true, sometimes true, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

HH3. "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

HH4. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

**Screener for Stage 2 Adult-Referenced Questions:** If affirmative response (i.e., "often true" or "sometimes true") to one or more of Questions HH2-HH4, OR, response [3] or [4] to question HH1 (if administered), then continue to ***Adult Stage 2***; otherwise, if children under age 18 are present in the household, skip to ***Child Stage 1***, otherwise skip to ***End of Food Security Module***.

**NOTE:** In a sample similar to that of the general U.S. population, about 20 percent of households (45 percent of households with incomes less than 185 percent of poverty line) will pass this screen and continue to Adult Stage 2.

**Adult Stage 2: Questions AD1-AD4** (asked of households passing the screener for Stage 2 adult-referenced questions).

AD1. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

- Yes
- No (Skip AD1a)
- DK (Skip AD1a)

AD1a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- Almost every month
- Some months but not every month
- Only 1 or 2 months
- DK

AD2. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- Yes
- No
- DK

AD3. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

- Yes
- No
- DK



AD4. In the last 12 months, did you lose weight because there wasn't enough money for food?

Yes

No

DK

**Screener for Stage 3 Adult-Referenced Questions:** If affirmative response to one or more of questions AD1 through AD4, then continue to *Adult Stage 3*; otherwise, if children under age 18 are present in the household, skip to *Child Stage 1*, otherwise skip to *End of Food Security Module*.

**NOTE:** In a sample similar to that of the general U.S. population, about 8 percent of households (20 percent of households with incomes less than 185 percent of poverty line) will pass this screen and continue to Adult Stage 3.

**Adult Stage 3: Questions AD5-AD5a** (asked of households passing screener for Stage 3 adult-referenced questions).

AD5. In the last 12 months, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food?

- Yes
- No (Skip AD5a)
- DK (Skip AD5a)

AD5a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- Almost every month
- Some months but not every month
- Only 1 or 2 months
- DK

**Child Stage 1: Questions CH1-CH3 (Transitions and questions CH1 and CH2 are administered to all households with children under age 18)** Households with no child under age 18, skip to *End of Food Security Module*.

SELECT APPROPRIATE FILLS DEPENDING ON NUMBER OF ADULTS AND NUMBER OF CHILDREN IN THE HOUSEHOLD.

**Transition into Child-Referenced Questions:**

Now I'm going to read you several statements that people have made about the food situation of their children. For these statements, please tell me whether the statement was OFTEN true, SOMETIMES true, or NEVER true in the last 12 months for (your child/children living in the household who are under 18 years old).

CH1. “(I/we) relied on only a few kinds of low-cost food to feed (my/our) child/the children) because (I was/we were) running out of money to buy food.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

CH2. “(I/We) couldn’t feed (my/our) child/the children) a balanced meal, because (I/we) couldn’t afford that.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

CH3. “(My/Our child was/The children were) not eating enough because (I/we) just couldn't afford enough food.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?

- Often true
- Sometimes true
- Never true
- DK or Refused

**Screener for Stage 2 Child Referenced Questions:** If affirmative response (i.e., "often true" or "sometimes true") to one or more of questions CH1-CH3, then continue to ***Child Stage 2***; otherwise skip to ***End of Food Security Module***.

**NOTE:** In a sample similar to that of the general U.S. population, about 16 percent of households with children (35 percent of households with children with incomes less than 185 percent of poverty line) will pass this screen and continue to Child Stage 2.

**Child Stage 2: Questions CH4-CH7** (asked of households passing the screener for stage 2 child-referenced questions).

**NOTE:** In Current Population Survey Food Security Supplements, question CH6 precedes question CH5.

CH4. In the last 12 months, since (current month) of last year, did you ever cut the size of (your child's/any of the children's) meals because there wasn't enough money for food?

- Yes
- No
- DK

CH5. In the last 12 months, did (CHILD'S NAME/any of the children) ever skip meals because there wasn't enough money for food?

- Yes
- No (Skip CH5a)
- DK (Skip CH5a)

CH5a. [IF YES ABOVE ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- Almost every month
- Some months but not every month
- Only 1 or 2 months
- DK

CH6. In the last 12 months, (was your child/were the children) ever hungry but you just couldn't afford more food?

- Yes
- No
- DK

CH7. In the last 12 months, did (your child/any of the children) ever not eat for a whole day because there wasn't enough money for food?

Yes

No

DK

## END OF FOOD SECURITY MODULE

### User Notes

#### **(1) Coding Responses and Assessing Household Food Security Status:**

Following is a brief overview of how to code responses and assess household food security status based on various standard scales. For detailed information on these procedures, refer to the *Guide to Measuring Household Food Security, Revised 2000*, and *Measuring Children's Food Security in U.S. Households, 1995-1999*. Both publications are available through the ERS Food Security in the United States Briefing Room.

Responses of “yes,” “often,” “sometimes,” “almost every month,” and “some months but not every month” are coded as affirmative. The sum of affirmative responses to a specified set of items is referred to as the household’s raw score on the scale comprising those items.

- Questions HH2 through CH7 comprise the U.S. Household Food Security Scale (questions HH2 through AD5a for households with no child present). Specification of food security status depends on raw score and whether there are children in the household (i.e., whether responses to child-referenced questions are included in the raw score).
  - For households with one or more children:
    - Raw score zero—High food security
    - Raw score 1-2—Marginal food security
    - Raw score 3-7—Low food security
    - Raw score 8-18—Very low food security
  - For households with no child present:
    - Raw score zero—High food security
    - Raw score 1-2—Marginal food security
    - Raw score 3-5—Low food security
    - Raw score 6-10—Very low food security

Households with high or marginal food security are classified as food secure. Those with low or very low food security are classified as food insecure.

- Questions HH2 through AD5a comprise the U.S. Adult Food Security Scale.
  - Raw score zero—High food security among adults
  - Raw score 1-2—Marginal food security among adults
  - Raw score 3-5—Low food security among adults
  - Raw score 6-10—Very low food security among adults

- Questions HH3 through AD3 comprise the six-item Short Module from which the Six-Item Food Security Scale can be calculated.
  - Raw score 0-1—High or marginal food security (raw score 1 may be considered marginal food security, but a large proportion of households that would be measured as having marginal food security using the household or adult scale will have raw score zero on the six-item scale)
  - Raw score 2-4—Low food security
  - Raw score 5-6—Very low food security
  
- Questions CH1 through CH7 comprise the U.S. Children’s Food Security Scale.
  - Raw score 0-1—High or marginal food security among children (raw score 1 may be considered marginal food security, but it is not certain that all households with raw score zero have high food security among children because the scale does not include an assessment of the anxiety component of food insecurity)
  - Raw score 2-4—Low food security among children
  - Raw score 5-8—Very low food security among children

**(2) Response Options:** For interviewer-administered surveys, DK (“don’t know”) and “Refused” are blind responses—that is, they are not presented as response options, but marked if volunteered. For self-administered surveys, “don’t know” is presented as a response option.

**(3) Screening:** The two levels of screening for adult-referenced questions and one level for child-referenced questions are provided for surveys in which it is considered important to reduce respondent burden. In pilot surveys intended to validate the module in a new cultural, linguistic, or survey context, screening should be avoided if possible and all questions should be administered to all respondents.

To further reduce burden for higher income respondents, a preliminary screener may be constructed using question HH1 along with a household income measure. Households with income above twice the poverty threshold, AND who respond <1> to question HH1 may be skipped to the end of the module and classified as food secure. Use of this preliminary screener reduces total burden in a survey with many higher-income households, and the cost, in terms of accuracy in identifying food-insecure households, is not great. However, research has shown that a small proportion of the higher income households screened out by this procedure will register food insecurity if administered the full module. If question HH1 is not needed for research purposes, a preferred strategy is to omit HH1 and administer Adult Stage 1 of the module to all households and Child Stage 1 of the module to all households with children.

**(4) 30-Day Reference Period:** The questionnaire items may be modified to a 30-day reference period by changing the “last 12-month” references to “last 30 days.” In this case, items AD1a, AD5a, and CH5a must be changed to read as follows:

AD1a/AD5a/CH5a [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen?

\_\_\_\_\_ days

[ ] DK

Responses of 3 days or more are coded as “affirmative” responses.