**Supplementary File**

**Food environments in the Pacific: A scoping review protocol**

**Background**

The burden of diet-related non-communicable diseases (NCDs) is alarming in the Pacific region and globally, with unhealthy diets causing 11 million deaths worldwide in 2017(1). In the Pacific region, the burden of NCD risk factors including hypertension, high blood glucose, overweight and obesity are significantly high (2). Consequently, approximately 75% of deaths in the region are due to NCDs (3-5). NCDs are preventable health conditions with an unhealthy diet as one of its major risk factors (6). Among Pacific Island countries and territories, there is a shift of dietary behaviour from consuming nutritious ‘traditional diets’ to unhealthy diets dominated by highly processed foods (7,8). In some Pacific Island countries and territories, imported highly processed foods are increasing while local food production is declining (9,10). Evidence shows that there is an association between the food environment and the dietary behaviours of individuals through its influence on their food purchasing behaviour (11,12). Swinburn *et al.* (1999) developed the ANGELO framework to conceptualize obesogenic environments where it divides the food environment into two environmental sizes including micro and macro environments (13). Within these two different sizes of environment, there are four different types of environments: physical (what is available), political (rules including regulations and policies), economic (costs) and sociocultural (values, attitudes and beliefs related to food) (13).

Imported processed foods in Pacific countries have become increasingly available partly due to trade agreements as shown by studies in Fiji, Samoa, and Vanuatu (14, 15). The import of foods to Pacific countries were found to be from 54 countries including countries in Asia, the United States, Europe, and the Middle East (16). The sales of highly processed foods in Pacific countries were also increasing (17). There have been some studies describing different aspects of the food environment in individual Pacific countries. A scoping review on the food environment in low- and middle-income countries was conducted in 2017, the focus was more on the physical external domains (e.g., availability, prices, marketing, and vendor properties) and personal domains (e.g., accessibility, affordability, and convenience) and that review only included one study from the Pacific region (18). However, beyond these physical domains there is a need to gain a better understanding of the studies on different dimensions of the food environment such as the broader economic, political, and sociocultural factors that influence the food choices of individuals. Since that review in 2017, further literature may now exist on the food environment in the Pacific region and the interventions that have been implemented to improve food environments in the region. This study will address the following aims:

Aims   
The aims of this systematic scoping review are to understand the:

1. characteristics of the physical food environment in the Pacific
2. the broader economic, policy, and sociocultural surroundings that influence food choices in the region
3. interventions to improve food environments for Pacific communities.

Study design

A systematic scoping review will be used in this study as they are commonly used to examine available evidence in research areas that are yet to be reviewed. This review will identify the extent, breadth, and nature of range of research studies and how they can address the objectives of this study. A scoping review is also used to identify characteristics or aspects of a concept, in this case the food environment in the Pacific. The definition of food environments by Swinburn *et al.* (2013) and the International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS) food environment categories (food composition, food provision, food labelling, food promotion, food prices, and food availability) (19) will be used to guide this systematic scoping review, focusing on the different dimensions of the food environment including physical, economic, sociocultural and political. This will allow better understanding of the characteristics of the food environment in the Pacific and the interventions that have been implemented to improve the food environment.

Eligibility criteria:

i) Studies conducted in the Pacific region, or any Pacific Island country will be included. These countries include Tonga, Fiji, Samoa, Papua New Guinea, Guam, Marshall Islands, Cook Islands, Nauru, Federated States of Micronesia, Commonwealth of the Northern Mariana Island, Vanuatu, Solomon Islands, Tuvalu, Tokelau, Wallis and Futuna, Niue, French Polynesia, Palau, American Samoa, Kiribati, Pitcairn Islands or New Caledonia.

ii) Studies eligible to be included in this systematic scoping review will include those that describe, examine, or assess any aspect or characteristic of any type of food environment. It will also include studies that describe any aspect of the broader economic, policy, and sociocultural surroundings that influence food choices or describe and/or evaluate interventions implemented to improve the food environment.

iii) Different types of study designs will be considered, such as qualitative, quantitative, mixed methods, including observational (descriptive or analytical) or interventional studies. Publicly available grey literature reports and non-academic publications will also be included.

iv) Year of publication will be from 1993 until 2023. The year 1996 is when the first few Pacific countries started becoming members of the World Trade Organization (20), where trade agreements play a role in shaping food environments, hence, covering the last 30 years to include this time.

Exclusion criteria:

1. Papers that are reviews, editorials, opinion pieces or conference abstracts.
2. Studies that described or assessed the impacts of the COVID-19 pandemic on the characteristics of the food environment.

Methods:

The Joanna Briggs Institute (JBI) methodological guidance for conducting a scoping review will guide this systematic scoping review (21). The steps will include determining the research question, identifying studies that are relevant and selecting studies based on inclusion criteria, data extraction, analysing of the evidence and reporting results. It will also follow the Preferred Reporting Items for Systematic Reviews and Meta Analyses—Extension for Scoping Reviews (PRISMA-ScR) checklist and guidelines (22).

Search strategy:

Database search strategy

The search will be conducted on electronic databases including EBSCO MEDLINE Complete, EBSCO Business Source Complete, EBSCO Academic Search Complete, EMBASE and Global Health. The search strategy for MEDLINE Complete is outlined in Table S1. The search terms for the literature search were developed based on the definition and key aspects of the food environments developed by Swinburn *et al.* (2013) and based on the INFORMAS food environment categories (19). These terms will be used to identify other synonyms and related keywords that will be included in the literature search. The reference lists of all relevant studies will be screened to identify additional studies to be included.

Grey literature search strategy

Google and Google scholar will be searched for unpublished studies/ grey literature. In addition, websites of international organizations such as the WHO and FAO as well as one of the regional organisations, the Pacific Community (SPC) will be searched as well. Also, the search terms used for database searches will be revised to extract word combinations which will be used to search websites of any relevant organisation through Advanced Google. Organisations’ URL will be inserted into Advanced Google’s ‘site or domain’ field while the word combinations will be inserted into the appropriate search box. These searches will be limit to Pacific Island countries using the region limits on Advanced Google.

Study selection

Two authors will review the title and abstract of all identified articles and those that do not meet the inclusion criteria will be excluded. If the two authors disagree in judgement during the review or screening process, they will discuss until they reach consensus. However, if consensus is not achieved, a third reviewer or author will be considered to determine whether the article will be included based on majority decision. The full text of articles identified for possible inclusion in the title and abstract screening stage will be assessed for eligibility by one author. The search results, process for inclusion and reason for exclusion of studies will be recorded and reported in the systematic scoping review.

Data Extraction (Charting evidence)

A data extraction template approved by the reviewers will be used to extract data from included citations. Two reviewers will independently do 10% of data extraction then they will discuss to see whether the extraction tool is being used in the same way before they cross-check their results. Extracted data will include title, author(s), country, year of publication, populations and sample size, aims, methodology (including study design), phenomenon of interest, such as the type of food environment or characteristics of food environment being studied, and key findings. The draft data extraction template will be revised during the data extraction stage and any amendments will be recorded and provided in the systematic scoping review.

Data Analysis and Presentation

Extracted data will be recorded and organised in Microsoft Excel. A table will be used to provide a summary of the extracted data accompanied by a narrative summary to describe relations between the results and the review objectives.

Conflicts of Interest

This project does not involve any conflict of interest.

Resources and Feasibility

This review will use online databases which are free for students to access through the university library website.

Ethics   
Ethics approval will not be required for this review as it will only use publicly available articles and documents.

Date protocol was developed:

August- October 2022

**Table S1: EBSCO MEDLINE Complete search terms and subject headings**

|  |  |  |
| --- | --- | --- |
| **Concepts** | **Line** | **Search terms and Subject headings** |
| 1.Food/beverage | 1 | TI food\* OR AB food\* |
|  | 2 | TI beverage\* OR AB beverage\* |
|  | 3 | (TI drink\* OR AB drink\*) NOT alcohol |
|  | 4 | TI fruit\* OR AB fruit\* |
|  | 5 | TI vegetable\* OR AB vegetable\* |
|  | 6 | TI snack\* OR AB snack\* |
|  | 7 | TI (diet OR diets OR dietary) OR AB (diet OR diets OR dietary) |
|  | 8 | TI (nutrition OR nutritional) OR AB (nutrition OR nutritional) |
|  | 9 | (MH "Food+") OR (MH "Beverages+") |
|  | 10 | **1-9 combined with OR** |
| 2.Food environments | 11 | TI "food environment\*" OR AB "food environment\*" |
|  | 12 | TI "nutrition environment\*" OR AB "nutrition environment\*" |
|  | 13 | TI (obesogenic N2 environment\*) OR AB (obesogenic N2 environment\*) |
|  | 14 | TI ((urban OR rural OR school\* OR communit\* OR work\*) N2 environment\*) OR AB ((urban OR rural OR school\* OR communit\* OR work\*) N2 environment\*) |
|  | 15 | TI ((social OR cultural OR sociocultural OR socio-cultural) N2 food) OR AB ((social OR cultural OR sociocultural OR socio-cultural) N2 food) |
|  | 16 | TI "food industry" OR AB "food industry" |
|  | 17 | TI "food system\*" OR AB "food system\*" |
|  | 18 | TI (farming OR farm) OR AB (farming OR farm) |
|  | 19 | TI "corner store\*" OR AB "corner store\*" |
|  | 20 | TI "convenience store\*" OR AB "convenience store\*" |
|  | 21 | TI "grocery store\*" OR AB "grocery store\*" |
|  | 22 | TI supermarket\* OR AB supermarket\* |
|  | 23 | TI ((food\* OR beverage\* OR drink\*) N2 (shop\* OR retail\* OR store\* OR outlet\*)) OR AB ((food\* OR beverage\* OR drink\*) N2 (shop\* OR retail\* OR store\* OR outlet\*)) |
|  | 24 | TI cafe\* OR AB cafe\* |
|  | 25 | TI restaurant\* OR AB restaurant\* |
|  | 26 | TI deli or AB deli |
|  | 27 | TI delicatessen or AB delicatessen |
|  | 28 | TI canteen\* OR AB canteen\* |
|  | 29 | TI "tuck shop" or AB "tuck shop" |
|  | 30 | TI tuckshop OR AB tuckshop |
|  | 31 | TI "vending machine\*" OR AB "vending machine\*" |
|  | 32 | TI in-store or AB in-store |
|  | 33 | TI "point of purchase" or AB "point of purchase" |
|  | 34 | TI "store environment\*" OR AB "store environment\*" |
|  | 35 | TI “food composition” OR AB “food composition” |
|  | 36 | TI “nutri\* composition” OR AB “nutri\* composition” |
|  | 37 | TI (food N2 label\*) OR AB (food N2 label\*) |
|  | 38 | TI (food N2 promot\*) OR AB (food N2 promot\*) |
|  | 39 | TI advert\* OR AB advert\* |
|  | 40 | TI market OR AB market |
|  | 41 | TI (Food N2 (campaign OR “mass communication\*” OR “mass media” OR “social marketing” OR “social media”)) OR AB (Food N2 (campaign OR “mass communication\*” OR “mass media” OR “social marketing” OR “social media”)) |
|  | 42 | TI “product placement” OR AB “product placement” |
|  | 43 | TI “pric\* promot\*” OR AB “pric\* promot\*” |
|  | 44 | TI “store promot\*” OR AB “store promot\*” |
|  | 45 | TI ((Price\* N2 (food\* OR beverage\* OR “soft drink\*” OR “energy drink\*” OR “sugar\* drink\*” OR fruit\* OR vegetable\*)) OR AB ((Price\* N2 (food\* OR beverage\* OR “soft drink\*” OR “energy drink\*” OR “sugar\* drink\*” OR fruit\* OR vegetable\*)) |
|  | 46 | TI pricing\* OR AB pricing\* |
|  | 47 | TI affordab\* OR AB affordab\* |
|  | 48 | TI ((Provision OR provide OR offer\* OR availab\* OR access) N2 (food\* OR beverage\* OR “soft drink\*” OR “energy drink\*” OR “sugar\* drink\*” OR water\* OR fruit\* OR vegetable\* OR meal\* OR snack\*)) OR AB ((Provision OR provide OR offer\* OR availab\* OR access) N2 (food\* OR beverage\* OR “soft drink\*” OR “energy drink\*” OR “sugar\* drink\*” OR water\* OR fruit\* OR vegetable\* OR meal\* OR snack\*)) |
|  | 49 | TI ((food\* OR nutrition) N2 trade\*) OR AB ((food\* OR nutrition) N2 trade\*) |
|  | 50 | TI “food sovereignty” OR AB “food sovereignty” |
|  | 51 | TI (“food policy” OR “food policies) OR AB (“food policy” OR “food policies”) |
|  | 52 | TI (food N2 (politic or politics or political)) OR AB (food N2 (politic or politics or political)) |
|  | 53 | TI ((economic OR fiscal) N2 (strateg\* OR intervention\* OR policy OR policies OR regulation OR legislat\*)) OR AB ((economic OR fiscal) N2 (strateg\*OR intervention\* OR policy OR policies OR regulation OR legislat\*)) |
|  | 54 | TI “food literacy” OR AB “food literacy” |
|  | 55 | TI (“food supply” OR "food supplies" OR “food supplier”) OR AB (“food supply” OR "food supplies" OR “food supplier”) |
|  | 56 | (MH "Food Industry") OR (MH "Food Services+") OR (MH "Food Supply") |
|  | 57 | **11-56 combined with OR** |
| 3.Food environment intervention | 58 | TI (food environment intervention\*) OR AB (food environment intervention\*) |
|  | 59 | TI ((food AND environment\*) AND (intervention\* OR policy OR policies OR strateg\* OR initiative\* OR program\* OR regulation OR legilat\*)) OR AB ((food AND environment\*) AND (intervention\* OR policy OR policies OR strateg\* OR initiative\* OR program\* OR regulation OR legilat\*)) |
|  | 60 | TI “food program evaluation” OR AB “food program evaluation” |
|  | 61 | **58-60 combined with OR** |
| 4. Pacific region | 62 | TI Pacific OR AB Pacific |
|  | 63 | TI Tonga\* OR AB Tonga\* |
|  | 64 | TI Fiji\* OR AB Fiji\* |
|  | 65 | TI Samoa\* OR AB Samoa\* |
|  | 66 | TI Nauru\* OR AB Nauru\* |
|  | 67 | TI “New Caledonia\*” OR AB “New Caledonia\*” |
|  | 68 | TI “Papua New Guinea” or AB “Papua New Guinea” |
|  | 69 | TI “Solomon Islands” OR AB “Solomon Islands” |
|  | 70 | TI Vanuatu OR AB Vanuatu |
|  | 71 | TI “American Samoa” OR AB “American Samoa” |
|  | 72 | TI “Cook Islands” OR AB “Cook Islands” |
|  | 73 | TI “French Polynesia\*” OR AB “French Polynesia\*” |
|  | 74 | TI Niue\* OR AB Niue\* |
|  | 75 | TI Tokelau\* OR AB Tokelau\* |
|  | 76 | TI Tuvalu\* OR AB Tuvalu\* |
|  | 77 | TI “Wallis and Futuna” OR AB “Wallis and Futuna” |
|  | 78 | TI “Federated States of Micronesia” OR AB “Federated States of Micronesia” |
|  | 79 | TI Guam OR AB Guam  TI Pitcairn Islands or AB Pitcairn Islands |
|  | 80 | TI Kiribati OR AB Kiribati |
|  | 81 | TI “Marshall Islands” OR AB “Marshall Islands” |
|  | 82 | TI “Commonwealth of Northern Mariana Islands” OR AB “Commonwealth of Northern Mariana Islands” |
|  | 83 | TI Palau OR AB Palau |
|  | 84 | (MH "Melanesia+") OR (MH "Micronesia+") OR (MH "Polynesia") |
|  | 85 | **62-84 combined with OR** |
|  | 86 | **10, 57, 61, 85 combined with AND** |
| 4. Limits | 87 | **86 with limit- Language: English and Publication date: 1993-current** |

**Explanatory notes:**

The keywords will all be searched using Title (TI) and Abstract (AB).

MH – Medical Subject heading search.

The + at the end of a subject heading term indicates that the term has been exploded.

**Table S2: Key word combinations for google search and search of key organizations**

|  |  |
| --- | --- |
| **Concepts** | **Search terms** |
| 1. Food/beverage | (food OR beverage) |
| 1. Food environments | (food environment\*) |
| (economic OR fiscal) AND food |
| (social OR cultural OR sociocultural OR socio-cultural) AND food |
| (“food policy” OR “food policies) |
| 1. Food environment interventions | (food environment intervention\*) |
| 1. Pacific region | Pacific region |

**References**

1. Afshin A, Sur PJ, Fay KA *et al.* (2019) Health effects of dietary risks in 195 countries, 1990--2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 393(10184):1958.
2. Reeve E, Lamichhane P, McKenzie B *et al.* (2022) The tide of dietary risks for noncommunicable diseases in Pacific Islands: an analysis of population NCD surveys. *BMC Public Health* 22, 1521.
3. World Health Organization (2022) The Global Health Observatory 2022. Available from: <https://www.who.int/data/gho>
4. Pacific Community (SPC) (2018) Status of non-communicable diseases policy and legislation in Pacific Island countries and territories.
5. Tin STW, Vivili P, Na'ati E *et al.* (2020) Insights in Public Health: COVID-19 Special Column: The Crisis of Non-Communicable Diseases in the Pacific and the Coronavirus Disease 2019 Pandemic. Hawaii J Health Soc Welf. 79(5):147-8.
6. World Health Organization (2023) Noncommunicable diseases. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
7. Snowdon W, Raj A, Reeve E, *et al*. (2013) Processed foods available in the Pacific Islands. Globalization & Health. 9(1):1-12.
8. Sievert K, Lawrence M, Baker P, Naika A (2019) Processed foods and nutrition transition in the pacific: Regional trends, patterns and food system drivers. Nutrients.11(6).
9. Andrew NL, Allison EH, Brewer T, *et al*. (2022) Continuity and change in the contemporary Pacific food system. Glob Food Sec. 32.
10. Nichole Georgeou CH, Nidhi W, Lountain S, *et al.* (2022) Food security and small holder farming in Pacific Island countries and territories: A scoping review Public Library of Science (PLOS).
11. Winkler MR, Zenk SN, Baquero B, *et al*. (2020) A Model Depicting the Retail Food Environment and Customer Interactions: Components, Outcomes, and Future Directions. International journal of environmental research and public health.17(20).
12. Atanasova P, Kusuma D, Pineda E, *et al.* (2022) The impact of the consumer and neighbourhood food environment on dietary intake and obesity-related outcomes: A systematic review of causal impact studies. Soc Sci Med.299:114879. doi: 10.1016/j.socscimed.2022.114879.
13. Swinburn B, Egger G, Raza F (1999) Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. Prev Med. 29(6):563-70.
14. Thow AM, Heywood P, Schultz J, Quested C, Jan S, Colagiuri S (2011) Trade and the nutrition transition: Strengthening policy for health in the pacific. Ecology of Food and Nutrition. 50(1):18-42.
15. Ravuvu A, Lui JP, Bani A, Tavoa AW, Vuti R, Win Tin ST (2021) Analysing the impact of trade agreements on national food environments: the case of Vanuatu. Global Health.17(1):1-15.
16. Snowdon W, Raj A, Reeve E, *et al.* (2013) Processed foods available in the Pacific Islands. Globalization & Health. 9(1):1-12.
17. Sievert K, Lawrence M, Baker P, Naika A. (2019) Processed foods and nutrition transition in the pacific: Regional trends, patterns and food system drivers. Nutrients.11(6).
18. Turner C, Kalamatianou S, Drewnowski A, Kulkarni B, Kinra S, Kadiyala S. (2020) Food Environment Research in Low- and Middle-Income Countries: A Systematic Scoping Review. Adv Nutr.11(2):387-97.
19. Swinburn B, Sacks G, Vandevijvere S *et al.* (2013) INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. *Obes Rev* 14, 1.
20. World Trade Organization Members and Observers. <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm>
21. Aromataris E MZE. JBI Manual for Evidence Synthesis (2020) JBI Manual for Evidence Synthesis.
22. Tricco AC, Lillie E, Zarin W *et al.* (2018) PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med* 169, 467-473.

**Table S3: Summary of studies describing characteristics of the food environment, determinants of food choice, and interventions implemented to improve food environments in Pacific Island countries (n=66)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Reference** | **Country** | **Food environment type** | **Study Design** | **Key findings** |
| **Food environment characteristics** | | | | |
| McCreadie *et al.* (2005) | Palau | Food labelling | A cross-sectional study of 14 different food categories in Koror, the main commercial centre in the Republic of Palau, to explore the extent of expired foods provided in retailers and the food labelling in imported products. | This study found that there were some expired foods among all 14 categories assessed in 2 main supermarkets and 2 grocery stores. Some food items also did not have any expiry date and some had labels that were not in English. This study recommended the development of policies on food labelling and to improve the quality of imported foods. |
| Snowdon *et al*. (2013) | Multiple countries- Fiji, Samoa, Guam, Nauru and New Caledonia | Food labelling | A cross-sectional study in 2011 of food labelling on food products (n=6041) in larger stores in the capitals of included countries. | 54 countries of origin identified from 6041 foods studied. 524 foods were produced within the 5 included countries. 132 products had inaccurate labels and 6% did not have any nutrient data on packaging. |
| Shahid *et al*. (2021) | Fiji | Food labelling | A systematic survey in 2018 estimating the proportion of food products in five supermarkets meeting the labelling regulation (n=4278 foods). | Among 14 categories of packaged foods studied, only 14% met Fijian national labelling regulations. |
| Buechel *et al*. (2022) | Tonga | Food labelling | A cross-sectional study in 2019 of labelling quality and the availability of processed foods sold in 3 supermarkets in Nuku’alofa (capital of Tonga). (n=317 food items) | 50% of food items assessed had legible nutrient label while only 14% of foods used the Health Star Rating because this is an Australian scheme. |
| Grant *et al*. (2012) | Republic of the Marshall Islands | Food price | A study of the cost of healthy food products from 7 large walk-in grocery stores and 136 convenience stores in the study country. | No healthy options were significantly cheaper than their less healthy counterparts. Healthy foods had significantly higher prices than their less healthy counterparts. |
| Jones & Charlton (2015) | Vanuatu | Food price | A cross-sectional analysis in 2015, of the 2010 Vanuatu Consumer Price Index and the 2010 Vanuatu Household Income and Expenditure Survey to investigate the cost of meeting the internationally recommended amount of fruits and vegetables (at least 400 g of fruits and vegetables per person, daily), and assess its affordability by households’ income. | The minimum cost of buying the recommended amount of non-starchy fruits and vegetables only was 486.24 vatu (US $16.60) per person per month. Low income households would need 40.9% of their total food budget to meet this recommended amount. 23% of households spent less than one-tenth of the cost of meeting their recommended amount of fruits and vegetables. |
| Greenberg *et al.* (2020) | American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Republic of the Marshall Islands and Republic of Palau | Food price and affordability | A survey was conducted in retail food environments in included countries using a protocol from the United States Department of Agriculture Community Food Security Assessment Toolkit. Food prices were collected and the affordability of food was assessed by comparing estimated food costs to reported average incomes in different countries. | This study found that the average weekly food cost as a percentage of median household income was higher in CNMI (51.6%) compared to American Samoa (40%), Guam (23.6%). The information on the average weekly income was not available for the Federated States of Micronesia, Republic of Palau and the Republic of the Marshall Islands. Fruits, vegetables, dairy, grains and protein foods were the most costly. |
| Ulijaszek (2003) | Cook Islands | Food availability | This study provides data on the food availability between 1961 and 2000 in the Cook Islands. | In the Cook Islands, data from the FAO showed that rice availability increased from 18g per person per day in the period 1961- 1970 to 29g per person per day in the period 1991-2000. In the period 1961-2000, wheat availability was greater than rice. Meat availability per person per day increased from 8g in 1961 to 122g in 2000. Both wheat and rice were imported and most of the meat, including mutton, chicken and pork. |
| Cassels (2006) | Federated States of Micronesia | Food availability | A paper in 2006 explored the impact of the influence of colonization, reliance on foreign aid and trade on the availability of imported foods in the Federated States of Micronesia. | The Federated States of Micronesia have had colonial rule since the late 1800’s until the 1980’s. They now have a Compact of Free Association agreement with the United States where the United States provides benefits and economic assistance to the Federated States of Micronesia. The Federated States of Micronesia is dependent on foreign aid for development and they are also heavily dependent on imported foods. Foods such as corned beef, spam, rice, sugar, turkey tails and other processed foods are commonly consumed in the Federated States of Micronesia. The influence of the United States has changed the availability and preference of foods from local to imported foods. |
| Seiden *et al.* (2012) | Samoa | Food availability | A secondary data analysis of national-level data on food supply, agricultural production and food security to determine food availability in Samoa in 2011. | Between 1961 and 2007, the availability of vegetable oils and meat increased substantially. Coconut products and locally grown fruit and root crops showed little to no increase during this time. |
| Matanane *et al.* (2017) | Guam | Food availability | A cross-sectional study assessing fruit and vegetable availability in retail food environments in Guam. | This study found that 73% of the 111 stores assessed were small markets, 11% were supermakets or large grocery stores and 16% were convenience stores. Supermarkets had the highest scores for the availability of fruits and vegetables. Of all stores, fruits and vegetables were available in 77%; however, only 21% and 37% of stores met the score for having good quality and variety of fruits and vegetables, respectively. |
| Shah *et al.* (2018) | Fiji | Food availability | This study looked at food security in Fiji, the traditional knowledge system related to food security and the shift from traditional farming to cash crops. | The integration of traditional and modern food production systems or a neo-traditional approach is recommended to ensure food security in Fiji. This involves conservation of land for production of local food crops and establishing connections between farming and the tourism industry. |
| Underhill *et al.* (2020) | Tonga | Food availability | A cross-sectional survey of 292 municipal market vendors and road-side vendors in Tongatapu (main island of Tonga) and Vava’u (one of the outer islands). This study aimed to provide an overview of Tonga’s horticultural fresh food system and the horticultural postharvest food loss to inform the development of interventions to improve consumer accessibility to locally grown fruits and vegetables. | This study found that Tonga’s horticultural market system includes a central municipal market supplemented by road-side vendors. These markets were concentrated in the town centres with many households relying on these markets for fresh food. The markets were supplied with fruits, vegetables and fresh food from farms within the island and there were few inter-island value chains. In the road-side market and municipal market, the horticultural postharvest loss was 5.3% and 1.4%, respectively. |
| Bogard *et al.* (2021) [30] | Solomon Islands | Food availability | A study of the typology of food environments in the Pacific, including six types of food environments: wild; kin and community; cultivated; informal and formal retail; and food aid and services. The 2012/13 Household Income and Expenditure survey in the Solomon Islands was analysed to explore the relationship between these food environments and diet quality of people. | The cultivated food environment accounts for 60% of the quantity of food acquired nationally in the Solomon Islands. This was followed by wild (15%), kin and community (9%), then formal and informal retail food environments (8% each). There was a wide variation between urban and rural households, provinces and different socioeconomic groups. The reliance of people on different food environments is a significant predictor of diet quality. |
| Bottcher *et al*. (2021) | Solomon Islands | Food availability | An observational cross-sectional study in 2018 of food availability in 56 retailers (stores, road-side stalls, market stall and bakery) in Solomon Islands. | Items from the ‘Pacific guidelines for a healthy lifestyle’ food group were available mostly in market stalls, but few varieties of these food products were recorded. |
| Burkhart *et al.* (2021) | Fiji | Food availability | This project was conducted in Fiji in 2021 with four components. The component related to this review was the assessment of the retail food environment in order to inform policy dialogue at the UN Food Systems Summit in 2021. | This study found high availability of nutrient poor foods, such as sugary drinks, confectionary and chips in food retail outlets in Fiji, both in urban and rural areas. There are numerous policies in place to address the food environment, however this research noted that there are points of incoherence that influence successful implementation of these policies. This includes lack of coordination among relevant sectors. |
| Andrew *et al.* (2022) | Pacific region | Food availability | This study describes the Pacific food system in terms of their agricultural and fisheries production, as well as international food trade. | This study found that in the Pacific region, the production or the availability of root crops and other starchy vegetables per capita has been decreasing in the last 50 years. The region is heavily reliant on imported foods, including meat, rice, sugar, and other foods. |
| Gueli *et al.* (2022) | Fiji | Food availability | This study conducted semi-structured interviews with 32 participants involved in local food production in Fiji in 2018 to understand the barriers and facilitators of strengthening local food systems. | This study found that the barriers to production of local foods included poor economic factors hindering investment, slow technological improvements, and the lack of interest in employment in the agricultural sector. Some of the facilitators of strengthening local food systems included preference of local foods to show loyalty to their culture, the cultural value of team effort and sharing of relevant new ideas. To strengthen local food production, government should prioritise investment in local produce over import markets and assist collaboration among people in this sector. |
| Pauuvale *et al.* (2022) [31] | Tonga | Food provision | A cross-sectional study in 2018 mapping the retail food environment in a 1 km radius of a secondary school in Tonga. Food outlets assessed included any shop selling food, such as grocery stores, convenience stores, markets, take-away foods, bakeries, cafés, supermarkets or restaurants. | There were 150 outlets found in the assessed area, and 98% were considered as very unhealthy, 0.7% were categorized as unhealthy, and 1.3% were considered healthy. The 12 outlets that were considered as very unhealthy included the school canteen. |
| Hope *et al.* (2013) | Fiji | Food promotion | A questionnaire was used in 2010 with 103 secondary school students and 88 primary school students in Fiji to explore the exposure and the influence of the advertising of junk food on children and adolescents in Fiji. | Among students in this study, 94% reported that viewing advertisements makes them want to taste the product. There was also a high level of junk foods advertising on the television and on the street. |
| Astika *et al.* (2013) | Fiji | Food promotion | A 2012 study was conducted assessing food and drink advertising on the FBC TV channel in Fiji. | In compared to other channels, there was a lower proportion of junk food advertising on FBC TV channel; however, almost two-thirds of food adverts were junk foods (65%). |
| Lee-Kwan *et al.* (2015) | American Samoa | Food price, food availability and food promotion | An audit of 9 grocery stores, 61 convenience stores and 20 restaurants to assess the price, promotion and availability of healthy foods in American Samoa was conducted in 2014. | In convenience stores and restaurants, healthy items were less available and were more expensive than their less healthy counterparts. The promotion of healthy eating, such as providing information on the calorie, was not common among restaurants. |
| Lundeen *et al.* (2017) | Guam | Food price, availability and food promotion | A descriptive study in 2015 of the food environment in 114 retail stores and 63 restaurants focusing on the promotion and availability of healthy foods. | Healthier foods were less available and more expensive in smaller stores than larger stores. There was limited availability of healthier foods, and nutrition information was generally unavailable in restaurants. Stores and restaurants commonly promoted unhealthy eating through their promotional materials. |
| Jackson *et al.* (2016) | Guam | Food promotion and availability | A cross-sectional study in 2015 of the promotion and availability of food options with lower sodium in 114 stores and 63 restaurants. | In small stores, food with low sodium were less commonly available than regular sodium food products. Few restaurants engaged in menu labeling for sodium content. |
| **Economic, policy and sociocultural surroundings influencing food choices** | | | | |
| **Sociocultural surroundings influencing food choices** | | | | |
| Singh *et al*. (2021) | Fiji | Sociocultural (beliefs, values and culture) | Community-based participatory research of the cultural and social factors contributing to obesity among Indigenous Fijians (n=14) in rural areas of Fiji. | Factors influencing diets included the gendered belief around food distribution, where male receive greater quantities than female. |
| Buksh *et al*. (2022) | Fiji | Sociocultural (beliefs, values and culture) | A qualitative study in 2021 of the sociocultural factors influencing the food consumption of iTaukei (Indigenous Fijians) (n=15 women) in urban areas in Fiji. | Factors influencing diets included cultural myths around energy needs of lactating women and the energy needs of men. Another factor is the cultural belief that larger body size is a sign of good health, and the value ascribed to foods, such as meat and junk foods. |
| McKenzie *et al.* (2022) | Fiji | Sociocultural (beliefs, values and culture) | A qualitative study in 2019 of the perceptions of iTaukei (indigenous) Fijians (n=46) in four villages in Viti Levu, regarding their ability to have a healthy diet. | Factors influencing diet included beliefs around food provision that is centered around gender, the religious and cultural obligations related to food, food preferences and knowledge. |
| **Economic surroundings influencing food choices** | | | | |
| Makun (2021) | Fiji | Broader economic surroundings (food inflation) | This study explored the determinants of food inflation in Fiji by developing two inflation models- domestic factor and external factor model, using annual data from 1983 to 2018. | This study found that domestic factors such as per capita GDP and money supply positively influence food inflation. For example, an increase in per capita GDP and in money supply result in an increase in food inflation. In terms of external factors, the exchange rate, world food price and oil price are also important factors that have influenced domestic food inflation in Fiji. |
| **Policy surroundings influencing food choices** | | | | |
| Thow *et al.* (2010) | Fiji, Samoa and Tonga | Political (Trade-related food policies) | Case studies of national policy processes in order to understand the barriers and enablers involved in the adoption and implementation of trade-related policy targetting the food supply in the Pacific. | Some of the enablers of the adoption of trade-related food policies included effective advocacy, better collaboration between relevant actors and making use of policy opportunities. Some of the barriers to policy adoption and implementation included poor engagement and collaboration among relevant stakeholders, lack of clear mechanism for enforcing the policy, and having a limited policy scope. |
| Thow *et al.* (2011) | Fiji, Samoa, Nauru and French Polynesia | Political (Soft drink taxes) | Case studies between 2007-2009 of four soft drink taxes in included countries, where interviews with multiple relevant parties (n= Fiji-10, Samoa-11, Nauru-6, French Polynesia-4) were conducted focusing on the lessons learnt from the policy adoption and implementation processes. | Key strategies to successful soft drink tax adoption included early engagement with all relevant stakeholders, having better collaboration among different sectors and developing proposals based on existing legislative mechanisms. |
| Thow *et al.* (2011) | Fiji and Samoa | Political (trade policies) | A case study to determine the impact of trade policy changes on the availability of staple foods, processed and packaged foods, oils and meat and how it has contributed to changes in the food supply and the nutrition transition. | This study found that trade policy changes between 1960 and 2005 have had impacts on the food supply in Fiji and Samoa where it reduced the availability of traditional root crops and contributed to an increase in the availability of foods, including fats and oils, meat, processed foods and refined cereals (e.g., rice and white flour). |
| Hendriks *et al*. (2015) | Fiji | Political (food-related policies) | Semi-structured interviews were conducted with 15 policymakers in 2014 to understand their perspectives on the policies for obesity prevention in Fiji. | Inappropriate framing of obesity as an issue, power inequalities and limited evidence on the effectiveness and feasibility of policies were some of the identified barriers in this study. These barriers could be overcome through collaboration among relevant sectors and for policymakers to be able to identify when there is an opportunity on the political agenda for policies to be adopted. |
| Mialon *et al.* (2016) | Fiji | Political (Corporate political strategies and practices of food industry actors) | A qualitative study in 2015 of the Corporate Political Activity strategies of major food industries in Fiji. This study involved collecting data for 14 key food industry actors and conducting semi-structed interviews with 10 individuals involved in diet and public health work. | Food industry adopted diverse strategies to influence public policy in Fiji, where six Corporate political activity strategies were identified. Widespread corporate political activity of the food industry could influence the efforts targeting NCDs in Fiji. |
| Ravuvu *et al*. (2017) | Fiji | Political (trade agreements) | A desktop review in 2016 analysing available food supply data to determine the impact of Fiji’s commitments under the WTO trade agreements on food import volumes and food environment. | This study found that the membership of Fiji under the WTO, together with policy changes associated with this, contributed to the increased availability of imported foods in Fiji. |
| Waqa *et al.* (2017) | Fiji | Political (food-related policies) | A qualitative study involving semi-structured interviews in 2015 with 31 policymakers from the Ministry of Health and Medical Services and the Ministry of Agriculture in Fiji. This was to identify the barriers and facilitators to the use of evidence to inform the development of food-related policies in Fiji. | This study found that the use of evidence to inform food-related policy making process is important; however, lack of collaboration among relevant sectors, lack of strategies to improve the use of evidence and poor technical support for training on how to effectively use evidence in policy- making were found as barriers to evidence use in Fiji. |
| Latu *et al.* (2018) | Fiji | Political (Food-related policies) | A case study (n=20 interviewees) in 2015 exploring the barriers and facilitators to the development of food-related policies in Fiji. | Barriers to food policy implementation included lack of support from leaders and a lack of collaboration with relevant actors. Facilitators included high commitment of leaders to driving the policy and good collaboration among relevant parties. |
| Lin *et al.* (2018) | Fiji | Political (trade agreements) | A study which used the United Nations Comtrade dataset to analyse data on the amount of imported sugar and processed foods to countries including Fiji. | This study found that Fiji’s commitments to different trade agreements contributed to increasing imports of processed foods, such as confectionery, cereals, pastry items and sugar-sweetened beverages which almost quadrupled in 15 years. |
| Dodd *et al.* (2019) | Pacific Region | Political (food policies) | A policy content analysis in 2018 to understand the food policy development process and regional priorities in this area in order to identify opportunities for progress. | Food environment policies and policies to address NCDS are a priority across various platforms in the region. There is a clear recognition on the need for a cross- sectoral effort and commitment. |
| Thow *et al.* (2020) | Fiji | Political (Policies to address food marketing to children and marketing of breast milk substitutes) | A 2018 case study (n=11 key informants from relevant sectors) of the decision-making process to identify barriers and facilitators for adopting policies to address food marketing to children and marketing of breast milk substitutes. | Factors influencing decision-making included the power imbalance in policymaking between food industry actors and public health stakeholders. |
| Bell *et al*. (2021) | Tonga | Political (import duties) | A 2017 case study (n= 15 policymakers) of the barriers and facilitators to implementation of import duties in Tonga. | Facilitators of import duties included strong management and leadership among key stakeholders, strong collaboration among key stakeholders, awareness raising and advocacy. Another key facilitator is the use of modelling to identify potential impacts of the policy. The lack of clarity on the enforcement mechanism and a decrease in collaboration over time were factors that hindered the implementation of import duties. |
| Lo *et al.* (2021) | Multiple countries- Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, New Caledonia, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu. | Trade and investment (sweetened beverages) | A secondary data analysis was conducted on food commodities data to identify changes in sweetened beverages imports between 2000 to 2015 to Pacific countries. | This study found an increase in the imports of sweetened beverages to Pacific countries from 24 million kg to 39 million kg between 2000 to 2015. This means that on average, there was an increase of 0.30 kg per person per year in sweetened beverages imported to Pacific countries. |
| Ravuvu *et al*. (2021) | Vanuatu | Political (trade agreements) | A 2020 case study involving a desktop review analysing available food supply data to determine the impact of Vanuatu’s commitments under WTO trade agreements on the food environment. | Trade liberalisation has an impact on imported foods, including ultra-processed foods as shown in measured indicators such as: (i) high import volumes in food trade with 32 WTO countries; and (ii) a rise in less healthy imported foods. |
| Reeve *et al*. (2021) | Samoa | Political (School food policy) | A qualitative case study in 2018 of lessons learnt from the school food policy implementation process in Samoa to identify opportunities to further strengthen its implementation. Semi-structured interviews were conducted in 2018 with 30 people and an analysis of relevant documents was also undertaken. | Barriers to the effectiveness of school food policy included the lack of priority given by non-health stakeholders to food in schools and the high availability and accessibility of unhealthy food in surrounded areas. |
| Burkhart *et al*. (2022) | Multiple countries- Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Niue, Nauru, Marshall Islands, Palau, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu | Political (School Food Programmes) | A cross-sectional study in 2019 of lessons learnt from the School Food Programs in multiple Pacific countries to identify potential barriers to its adoption in countries without this program. Four workshops were conducted with 14 participants. | Some of the key barriers to the use of School Food Programs included lack of advocacy, leadership and lack of collaboration among relevant stakeholders. |
| Mounsey *et al*. (2022) | Fiji and Tonga | Political (food tax) | A qualitative comparative case study (n=42 policymakers (Fiji n = 18 and Tonga n = 24)) in 2020 to understand the political economy drivers affecting the effective implementation of diet-related fiscal policies in included countries. | For Fiji, factors affecting diet-related fiscal policy included lack of engagement and collaboration among key sectors, having competing policy priorities and lack of enforcement. For Tonga, factors included how the policy is framed, having fragmented policy processes and lack of healthier options to substitute the unhealthy foods being taxed. |
| Reeve *et al*. (2022) | Vanuatu and Solomon Islands | Political (Current policies and legislation of government sectors relevant to food systems governance) | A comparative documentary policy content analysis of 37 policy documents relevant to food systems was conducted exploring opportunities for food industry sectors to promote nutrition. | Food systems key actors in the studied countries have aims to promote healthier food systems, but policies need to be designed carefully to reflect these aims. |
| Thow *et al.* (2022) | Multiple countries- 18 Pacific Island countries and territories | Trade and investment | A descriptive quantitative analysis examining the trends in food trade from 1995-2018 among Pacific Island countries and territories, and their impact on food environments. | In 2018, 51% of total foods traded among Pacific Island countries and territories were cereal grains and flour. Highly processed foods, such as tinned fish, confectionary and sweetened beverages are also traded in large amounts among Pacific Island countries. |
| Thow *et al.* (2022) | Pacific region | Political (food system policies) | A qualitative policy analysis to explore the role of regional governance in improving food system policies. Interviews were conducted in 2021 with 21 experts from the Pacific region, and 17 regional food system policy documents from 2012- 2021 were analyzed. | This study found that there has been improvement in regional governance related to food system policies including better coordination and engagement across key actors. However, there is still opportunities to enhance regional food system governance through paradigm change, fostering new coordination methods, and improving interactions among institutions at the regional level, country level and communities. |
| Farrell *et al.* (2023) | Solomon Islands | Political (policies on fruit and non-starchy vegetables supply and acquisition) | This study in 2021 used a documentary policy content analysis, where a food systems framework was used to identify problems related to the supply and acquire of fruit and vegetables, identify barriers to and opportunities to improve its consumption. | This study found that the production of fruit and non-starchy vegetables in the Solomon Islands is insufficient to meet the per capita demands. Some of the barriers to fruit and vegetable consumption were identified with opportunities to improve them through policies to make fruit and vegetable more affordable and strengthen agricultural practices to support the production of more fruit and vegetables. |
| Mauli *et al.* (2023) | Solomon Islands | Political (fish supply chain policies) | A qualitative study in 2019 involved key informant interviews with 12 policymakers in the Solomon Islands and a review of 15 policy documents to identify better options to strengthen fish supply chain policy to improve the affordability and accessibility to fish. | This study found that recognising the connections between fisheries and nutrition and having community based management approaches were facilitors of fish supply chain policies in the Solomon Islands. Some of the barriers to the implementation of the fish supply chain policies included lack of collaborative efforts across relevant stakeholders and lack of clear enforcement of the policies. |
| Patay *et al.* (2023) | Multiple countries- Pacific Region | Political (general food system policies) | A qualitative study conducted between 2021- 2022 involved key informant interviews with 76 officials working in relevant areas to national or regional-level food system governance in the Pacific region. This study aimed to identify the barriers and facilitators to strengthening the translation of Pacific regional guidance on food system policy to the national level. | This study found that the challenges in the regional to national level translation of food system policy recommendations included having competing demands while at the same time only having access to limited resources, and having weak dialogue between regional focal points and those at the national level. Some of the opportunities identified for strengthening this included establishing a regional structure for governing the food system, strengthening the accountability mechanisms and improving dialogues between regional and national focal points. |
| **Policies and interventions addressing the food environment** | | | | |
| Snowdon *et al.* (2010) | Fiji and Tonga | Political (General food policies) | A participatory approach in 2007 involved 1-2 day workshops with multiple relevant parties from a range of sectors in each included country, to identify the most feasible policy options that would have the greatest impact on reducing the prevalence and incidence of diet-related NCDs. | Policy gaps included poor feasibility and not cost-effective. Policy options discussed included increasing accessibility and availability of local foods, addressing the costs of healthier and less healthy foods, ensuring that healthier foods are increasingly promoted, and restricting the marketing of less healthy foods. |
| Thow *et al*. (2011) | Multiple countries- Fiji, Tonga, Samoa, Nauru and French Polynesia | Political (soft drink taxes, policies to restrict supply of fatty meat and general food policies) | This study documents lessons learnt from the Obesity Prevention in Communities food policy project. The first part of the project involved an analysis of soft drink taxes and policies to control fatty meat supply in Fiji, Tonga, Samoa, Nauru and French Polynesia, through interviews and document analysis. The second part involved the use of a participatory approach to identify the most feasible policy options to improve diets and address NCDs in Fiji and Tonga. | This study found that political and cross-sectoral support is crucial for adopting food environment policies in Pacific countries. The impact of international issues on policy making is also important to be considered. Policy options that would have the greatest impact of addressing unhealthy diets and NCDs include increasing availability of local foods, making healthier food more affordable, making unhealthy foods less affordable, ensuring that healthier foods are increasingly promoted, and restricting the marketing of less healthy foods. |
| Sacks *et al.* (2014) | Fiji | Political (policies on food marketing to children and product (re) formulation) | A study which examined the publicly available policies on restricting food marketing to children and product formulation by soft drink and packaged food manufacturers, and fast-food restaurants in Fiji, Australia and New Zealand. (Only the results from Fiji were reported in this review). | In Fiji, 27% of the selected packaged food manufacturers had a policy on their company website related to food marketing to children and product formulation. None of the included soft drink manufacturers in Fiji had policies on their company websites. Of the included fast-food restaurants in Fiji, only 20% had online food marketing policies. Where age specification existed, children under 12 years old was the specified age to which marketing restrictions apply in policies on food marketing to children. Most of the product formulation policies focused on salt reduction and product portfolio changes. |
| McDonald, *et al.* 2015 | Multiple countries- Pacific region | Political (Sugar-sweetened beverage taxes) | A discussion paper in 2015 discussed sugar-sweetened beverage taxes in the Pacific region and how the design of these taxes can be further improved. | This paper discussed how sugar-sweetened beverage taxes have been implemented in 12 Pacific countries at the time, and how the design of these taxes can be further improved by ensuring that it is in line with available evidence, clearly outlines the objectives of the tax and carefully consider the tax rate to improve its effectiveness. |
| Coriakula *et al.* 2018 | Fiji | Political (palm oil import duty) | A case study using a qualitative approach was conducted to evaluate the impact of the 2012 palm oil import duty in Fiji. Available documents related to the policy were analysed in 2014 and semi-structured interviews were conducted between 2015 and 2016 with 14 participants. | A 32% increase in the palm oil import duty was implemented in Fiji in 2012. This study found a drop in the import of palm oil from over 5000 tonnes in 2011 to just over 2000 tonnes in 2015. |
| Trieu *et al.* 2018 | Samoa | Food composition (national salt reduction interventions) | A pre- and post- intervention study of a national salt reduction strategy was conducted in Samoa from 2014- 2016 to address the high intake of salt among the population. The interventions were implemented for 18-months by the Ministry of Health in Samoa, involving awareness campaigns, empowering community leaders to spread the message, and environmental changes in food industries to promote lower salt intake. | In Samoa in 2016, the study found that some of the challenges to implementing this initiative was the lack of opportunities for community leaders to spread the message, higher campaign costs than anticipated and not being able to convince food industries to voluntarily reduce salt in food without any related regulations. |
| Wijesinha-Bettoni *et al.* (2019) | Tonga | Food price (food tax) | In 2017, a qualitative study was conducted to evaluate the effectiveness of the fatty food taxes imposed in 2016 on certain fatty foods (i.e., turkey tails, chicken leg quarters, lamb flaps, mayonnaise and lard) in Tonga. Key informant interviews were conducted with 3 retailers and 17 relevant government officials from different ministries. Three focus-group discussions were also conducted with people from rural districts, where there were 6 participants per group. A consultation workshop was also conducted with 40 stakeholders to validate the findings of this study. | This study found that there was a lack of affordable healthy foods to substitute the unhealthy foods that taxes were imposed on. Participants reported a lack of public consultation and awareness programs regarding the implementation of these taxes. There was also a lack of multisectoral effort to implement this policy. |
| Bell *et al*. (2020) | Fiji | Food price (fruit and vegetable import duty) | A case study in 2019 evaluating the impact of the fruit and vegetable fiscal policies developed and implemented between 2010 and 2014 on import volumes. The policy impact was examined using data on import volume that is publicly available, and interviews were also conducted with policymakers and supermarket managers. | Tariff reductions seem to have contributed to increased volume of vegetables and fruits imported. |
| Gonzales *et al.* (2020) | Guam | Food composition (national salt reduction interventions) | In 2014, the Department of Public Health and Social Services in Guam received funding from the Centers for Disease Control and Prevention to implement community-based approaches aimed to lower population salt intake. This initiative involved the development and of organizational policies for food industries, where they were strongly encouraged to adopt. It also involved the dissemination of educational materials with salt reduction messages and other awareness campaigns. | In Guam, 47 out of 140 restaurants approached showed their support for the initiative in its final year after 4 years of its introduction in 2014. The initiative also published 100 messages via social media and 27 messages through project partners. Project staff provided a sustainability plan of this initiative at one of the NCD Consortium meeting, however, this study noted that health campaigns should continue to sustain the momentum of this initiative. |
| Teng *et al*. (2020) | Tonga | Food price (sweetened beverage tariff) | A study in 2019 examining the impact of sugar-sweetened beverage tax changes in Tonga on the local production, price and import volumes of beverages (2016 tax only). | In the year following the 2013, 2016 and 2017 tax increases, the price of soft drink increased by 16.8%, 3.7% and 17.6% respectively. The import volumes of taxed beverages consistently decreased compared to the counterfactual in the year following tax changes in 2013, 2016, and 2017. |
| Reeve *et al*. (2021) | Solomon Islands | Food price (fiscal food policy) | In 2017- 2019, a policy analysis was conducted which involved a document analysis, key informant interviews, a quantitative analysis and an economic modelling to identify the potential benefits of sugar-sweetened beverage tax. This was to provide evidence to support an advocacy for the adoption and implementation of a sugar-sweetened beverage tax in the Solomon Islands. | Researchers provided evidence on the high consumption of sugar-sweetened beverages and its harmful impacts in the Solomon Islands. They also identified that increasing fiscal uncertainty may provide a good opportunity to advocate for the adoption of the tax, which is likely to have economic and health benefits. Recommendations on tax design was provided which was then used in a proposal by those in the advocacy coalition in the Solomon Islands to proposed the adoption of sugar-sweetened beverage tax to Cabinet. In 2019, a government budget strategy paper showed that sugar-sweetened beverage tax would be adopted to improve the health of people and to increase revenue collection. |
| Teng *et al*. (2021) | Cook Islands | Food price (sweetened beverage tariff) | A study in 2020 examining the impact of sugar-sweetend beverage tax changes in the Cook Islands. | Sugar-sweetend beverage taxes seem to have been a useful tool for the Cook Islands in addressing the increasing volumes of imported sugar-sweetened beverages, particularly the 2008 tariff increase. After the tariff increases in 2008 and 2012, the import volumes of taxed beverages decreased by 13.2% and 2.9%, respectively. |
| Win Tin *et al*. (2022) | Multiple countries- 21 Pacific Island countries and territories | Food price, Trade and investment, food promotion, food provision (NCD-related policies) | A study in 2020 assessing the status of the implementation of NCD-related policies in Pacific Island Countries and Territories. | Pacific countries have made progress in setting up a national NCD taskforce; implementation of fiscal policies to address the accessibility and availability of unhealthy foods and drinks. One area with limited progress in implementation is restrictions on marketing of unhealthy foods and beverages to children. |
| Buksh *et al.* (2023) | Fiji, Kiribati, Samoa, Solomon Islands, Tonga and Vanuatu | Food price (fiscal policies) | A study in 2022 used an online cross-sectional survey to recruit a total of 4116 adults from 6 Pacific countries, to measure the impact of fiscal policies on sugar-sweetened beverages consumption, and the consumption of highly processed snacks and fruits and vegetables. | This study found that 79% of the participants did not meet the daily recommended amount of fruits, 60% did not meet the daily recommended amount of vegetables, 69% of participants reported consuming one or less than one glass of sugar-sweetened beverages per day, 13% reported consuming at least three glasses of sugar-sweetened beverages per day and 66% consumed at least one packet of ultra-processed snacks per day. While this study provides evidence on the potential impact of fiscal policies on food consumption, more research is required to evaluate the impact of these policies. |
| Reeve *et al.* (2023) | Multiple countries- Pacific region | Food price (food taxes) | A practical policy guidance was developed in 2023 through examining evidence on food taxes globally to identify ways to improve the design, adoption and implementation of food taxes in the Pacific region. | This guide provided practical options for defining foods to be taxed taking into account their health implications, ensuring that proposed taxes comply with the existing tax system and that the tax rate is carefully considered to improve feasibility and effectiveness. |