The Pacific Food Trade Database (PFTD)

KEY MESSAGES

- Global data on food trade among nations is reported to the United Nations by both importers and exporters. These data are widely used to describe global food trade and are an important source of information for policy oriented research.
- Detailed exploration of data for the Pacific region revealed significant errors that were consequential in analyses at national scales.
- To enable reliable estimates of food trade among and with Pacific Island Countries and Territories (PICTs) for analyses of food and nutrition security we developed a mixed methods approach to cleaning global food trade data.
- The resulting Pacific Food Trade Database (PFTD) details trade flows for around 570 food and beverage commodities for 18 PICTs spanning the years 1995-2018.

CONTEXT

PACIFIC FOOD AND BEVERAGE TRADE

The Pacific region is heavily reliant on food imports to meet domestic consumption requirements and ensure food security, particularly for rice and wheat, including wheat flour. In addition, imports of nutritionally unsatisfying and highly processed foods contribute to some of the highest rates of diet related non-communicable diseases globally. Improved country data, across the Pacific region, is needed to guide national policy, including trade agreement negotiations, and to inform regional forums in setting priorities and aspirations.

INTERNATIONAL TRADE DATA

United Nations Comtrade holds official international food trade data and is the foundation dataset for many derived statistical products. The quality and completeness of data in Comtrade is dependent on national reporting. The independent research institute CEPII curates an augmented version of Comtrade that accounts for errors and missed reporting, and standardises weights and volumes to provide revised estimates of international trade flows. The resulting database, BACI, is updated periodically and is widely used for trade analysis.

THE PACIFIC FOOD TRADE DATABASE

Detailed exploration of Comtrade and BACI for food trade flows with and among PICTs revealed significant errors. Many implausible trade flows were reported by either exporters or importers for commodities not produced in the region and many volumes were implausibly large. Although less consequential in regional and global analyses of broad trends, these errors limit the credibility of analyses of food commodities and for individual PICTs.

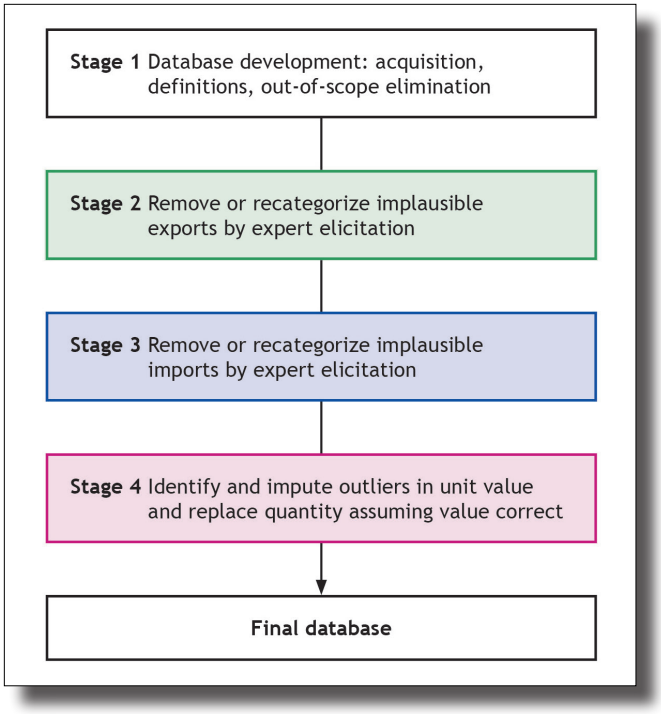

Figure 1. Sequence of stages in database development and cleaning.

Working in collaboration with national statistics agencies and regional experts, SPC and the University of Wollongong developed a mixed methods approach to cleaning regional food trade data (Figure 1, and see Brewer et al. 2020). The method includes both expert review of the plausibility of trade flows and rule-based identification and imputation of unit prices and the revision of quantity in each trade flow.

For the period 1995-2018, a total of 4,634 (1.5 %) trade flows contained categorical errors in some combination of exporter * importer * commodity and were re-categorized or deleted. 13,177 (4.2%) trade flows had implausibly large or

small unit prices. The imputation process reduced the total volume of trade in the dataset from 314,669,653 t to 80,313,878 t. The resulting database, the PFTD, includes annual food and beverage trade flows for 18 PICTs, including trade partners, quantity (tonnes) and value (US$) for roughly 570 commodities spanning the years 1995 to 2018. The improvements in the data from cleaning varied across PICTs and commodities, and were dramatic in some instances – see, for example, differences among Comtrade, BACI, and PFTD estimates of trade in cereals with PICTs (Figure 2).

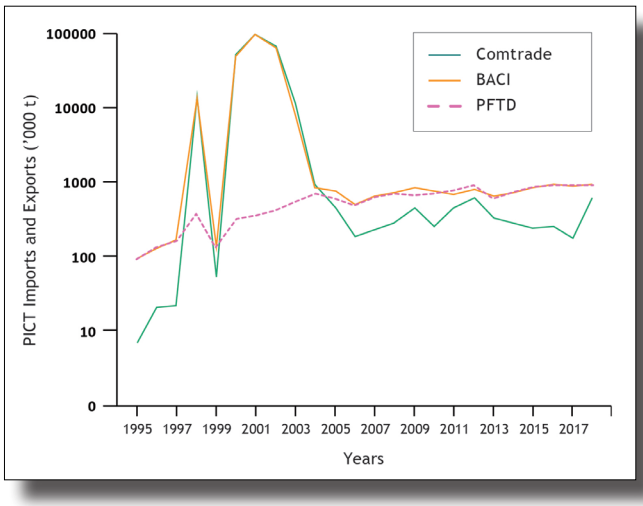

Figure 2. Comparison of the three data sources for tonnes of cereals both imported and exported between 1995 and 2018 (note the log scale).

INTENDED UTILITY OF THE PACIFIC FOOD TRADE DATABASE

While the details are unique to this dataset, the step-wise mixed method approach has broad applicability to regional and national analysis of international food trade data. The methods paper is intended for the research community, as a novel approach for cleaning trade data to improve reliability. The PFTD is expected to be released during 2022. The database is intended for researchers and national and regional agencies to better understand trade patterns relevant to decision making. It is also intended as a tool for research to better understand how food and beverage trade can better serve PICTs. The PFTD will be updated from time to time as new data from Comtrade and BACI become available and on the ad hoc advice of regional and national experts as errors are identified. The PFTD was developed as a research tool and does not constitute an official record of trade flows among countries in the Pacific region.

Vessel unloading goods at Mata-Utu, Wallis and Futuna. Credit: Moana Services.

SOURCES

- Download the full methods description here: Pacific Food Trade Database methods paper
- CEPII BACI data source: cepii.fr/CEPII/en/cepii/cepii.asp
- Brewer, T.D, Andrew, N.L, Sharp, M.K, Thow, A.M, Kottage, H, Jones, S (2020). A method for cleaning trade data for regional analysis: The Pacific Food Trade Database (version 2, 1995-2018). Pacific Community working paper.

ABOUT

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