



# The Pacific Nutrient Database (PNDB)

## KEY MESSAGES

- The triple burden of malnutrition includes undernutrition, overnutrition and micronutrient deficiencies, which are dietary related and are leading causes of morbidity (e.g., non-communicable disease) and mortality in the Pacific region
- Consumption patterns of Pacific populations are not well understood due to the cost and complexity of collecting dietary information, which hinders policy aiming to eliminate malnutrition
- Data produced through nationally representative household surveys, and other sources such as trade and production data, can be used to form an evidence base to support Food and Nutrition Security (FNS) policy
- The Pacific Nutrient Database (PNDB) is a food composition instrument that was specifically designed to facilitate nutrition analysis using household survey, trade and production data

## CONTEXT

### PACIFIC ISLANDS FOOD COMPOSITION TABLES

The Pacific Islands food composition tables (PIFCT) were first published in 1983 and subsequently updated in 2004.

The PIFCT contain nutrient composition data for around 800 foods and 22 nutrients. While the PIFCT contain a wealth of information for use in nutrition analysis, they have some limitations.

Firstly, diets of Pacific Islanders have changed since 2004, so the PIFCT do not necessarily contain information on foods that are present in today's diet.

Secondly, the PIFCT present nutritional values for an edible quantity of 100g (or an equivalent, such as a cup), and does not include edible portion conversion factors to estimate the nutrient composition of items recorded as whole foods such as fish, oranges, coconuts, which contain inedible components.

Finally, the PIFCT do not include many pre-prepared dishes such as those that would be consumed in a restaurant, which are an increasing source of food in the Pacific region. These drawbacks ultimately limit the relevance and use of the PIFCT for use in the analysis of household survey, trade and production data.

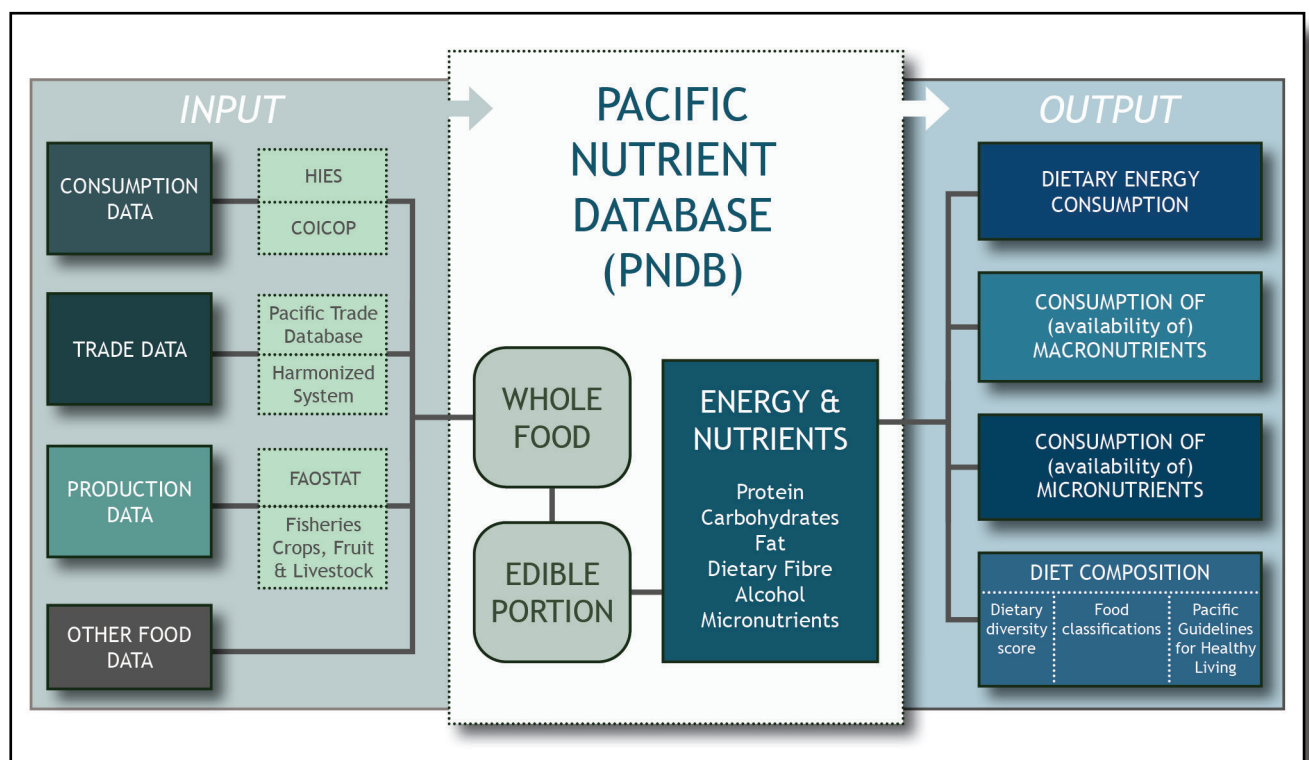


Figure 1. Input data and classifications, data flow and outputs of the Pacific Nutrient Database.

## THE PACIFIC NUTRIENT DATABASE

In response to these challenges, SPC, FAO and the University of Wollongong developed the Pacific Nutrient Database. The key features of PNDB are:

- ✓ 800 foods, including 235 pre-prepared (cooked) dishes
- ✓ Edible portion conversion factors for estimation of refuse and edible components of whole foods
- ✓ 26 components including water, energy and nutrients
- ✓ Concordance with international food classifications

### *A comprehensive list of food items*

In order to ensure that relevant food items were included in PNDB, the selection of items was based on food that were reported as having been acquired by Pacific households in 12 household income and expenditure surveys that were conducted from 2012 to 2016.

### *Edible portion conversion factors*

Food data sourced from household survey, trade and production data are typically reported in whole foods (i.e., food that includes both edible and inedible components, such as skin, bone, shell and husk) and the refuse therefore needs to be deducted when estimating energy and nutrient intake. PNDB provides edible portion conversion factors, which facilitate the conversion of whole food into ingestible quantities.

### *Food composition*

For a 100g portion of ingestible food, PNDB comprises 26 components including water, energy (e.g., calories), macronutrients (e.g., protein, carbohydrate, fat) and micronutrients (e.g., sodium, calcium, iron, zinc, and vitamins). PNDB therefore allows for the estimation of access to dietary energy and nutrients.

**Concordance with international classifications**  
PNDB accords with classification systems in terms of both the input dataset and output of analysis.

On the input side, PNDB accords with the Classification of Individual Consumption According to Purpose (COICOP), which is the classification system that is used in Pacific household income and expenditure surveys (HIES). This allows for direct mapping of household survey data to PNDB. Additionally on the input side, PNDB is being mapped to the Harmonised System - an international trade classification - which will allow for direct mapping of food trade data (and the Pacific Trade Database) to PNDB.

On the output side, each food item in PNDB is classified in accordance to international food classifications, including household dietary diversity score groups, FAO commodity classification, the Global Individual Food consumption data Tool and the Pacific Guidelines for Healthy Living. This means that any analysis that utilises PNDB can generate outputs in accordance with various international food classification systems.

## USES OF THE PACIFIC NUTRIENT DATABASE

PNDB was primarily designed as a tool to facilitate poverty and nutrition analysis using data produced through household income and expenditure surveys. Since its development, PNDB has been used in trade and agricultural production data analysis. PNDB therefore offers opportunity to conduct consistent and comparable analysis of consumption among the Pacific Island countries and territories, and analysis of the nutrient composition of the main food sources - production and trade - in the Pacific food systems.

## SOURCES

- Download the Pacific Nutrient Database User Guide and dataset here: [microdata.pacificdata.org/index.php/catalog/755](https://microdata.pacificdata.org/index.php/catalog/755)
- FAO and SPC. 2020. Pacific Nutrient Database User Guide. Noumea, New Caledonia. [doi.org/10.4060/cb0267en](https://doi.org/10.4060/cb0267en)
- Dignan, C.A., Burlingame, B.A., Arthur, J.M., Quigley, R.J. and Milligan, G.C., 1994. The Pacific Islands food composition tables. Noumea (New Caledonia), South Pacific Commission, 1994.

## ABOUT

This series of briefs has been produced to provide timely updates of ongoing analyses of Pacific food systems. The briefs are not peer reviewed and are either interim products prior to publication or summaries of published work. The series is funded by the Australian Government through ACIAR project FIS/2018/155. *For further information contact Michael Sharp ([michaels@spc.int](mailto:michaels@spc.int)). Source details may be updated as publication status changes.* Design and graphics by Eleanor McNeill. Version 3.

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## SUPPORTED BY

