

# Use of household food consumption data (HCES) in food security analysis in the Pacific region

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<https://sdd.spc.int/food-systems>



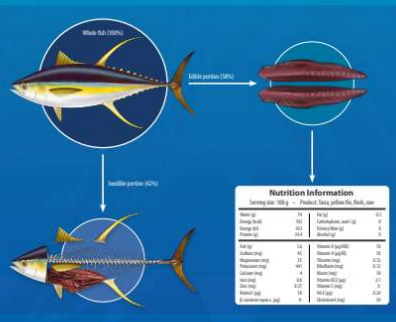
# Pacific Nutrient Database

Indicator	Edible portion	Water	Energy (kcal)	Protein	Fat	Carbohydrate, available	Dietary fibre
Unit of measure	percent	g	kcal	g	g	g	g
<b>Food category</b>							
Lettuce, composite, raw	73	96	11	1	0.2	0.8	1.4
Sweet potato, leaves, raw	* 94	* 88	* 33	* 2.9	* 0.8	* 1	* 5.2
Banana, cooking, raw	* 65	* 68	* 126	* 0.9	* 0.2	* 29.8	* 0.7

	Polynesia	Micronesia	Melanesia	Pacific
Cereals and their products	20%	45%	25%	28%
Roots, tubers, plantains and their products	21%	2%	33%	25%
Pulses, seeds and nuts and their products	14%	5%	17%	14%
Sweets and sugars	16%	15%	5%	9%
Fish, shellfish and their products	4%	9%	6%	6%
Meat and meat products	12%	7%	2%	5%
Fruits and their products	3%	5%	4%	4%
Fats and oils	4%	4%	2%	3%
Savoury snacks	2%	2%	2%	2%
Vegetables and their products	1%	0%	2%	1%
Beverages	2%	3%	0%	1%
Composite dishes	1%	0%	2%	1%
Milk and milk products	1%	1%	0%	0%
Spices and condiments	1%	1%	0%	0%
Eggs and their products	0%	0%	0%	0%
Foods for particular nutritional uses	0%	0%	0%	0%

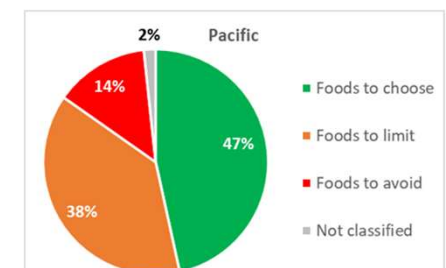
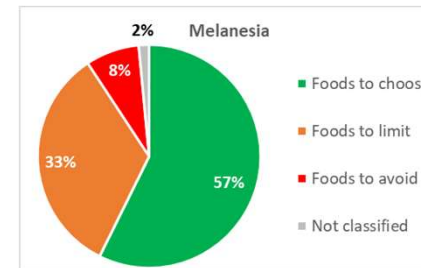
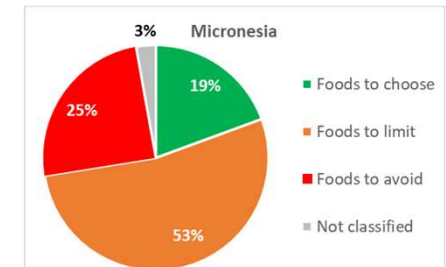
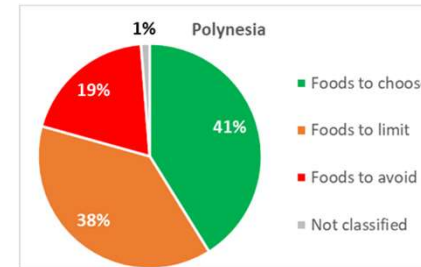
## Pacific Nutrient Database User Guide

A tool to facilitate the analysis of poverty, nutrition and food security in the Pacific region



### Classifications:

- COICOP 1999
- COICOP 2018
- GIFT
- Pacific Guidelines for Healthy Living
- HDDS
- FAO Food Commodity Group Classification



Source: Troubat et al 2023 (provisional and not to be cited)

# Food security profiles

## KIRIBATI FOOD SECURITY PROFILE

**DEMOGRAPHICS**

110 136 Population (2015)

47% Rural population

Line Is. & Phoenix 8%, Christmas 14%, Central 7%, Taramakau 18%

**Life expectancy (2018)**

Male 65.9, Female 66.9

Crude birth rate (2018): 26.9

Under-five mortality rate (2018): 41 per 1,000 live births

82.3% of households using improved sanitation (2018)

**THERE IS A LONG WAY TO GO BEFORE ENDING FOOD INSECURITY AND POVERTY IN KIRIBATI**

Around 8% of people are undernourished

Around 22% of people live below the basic needs poverty line

41% of people experience moderate or severe levels of food insecurity

## ADULT OBESITY IS A MAJOR HEALTH ISSUE IN KIRIBATI

Children under five years old (2018)

3.5% WASTING, 15.2% STUNTING, 6.9% UNDERWEIGHT

Prevalence of obesity in adult population (18 years and older): 46% (2018)

## ANALYSIS OF FOOD CONSUMPTION PATTERNS IN KIRIBATI

Average national dietary energy consumption is around 2 760 kcal/capita/day with some disparities at subnational level

Average cost to acquire 1 000 kcal: AUD 1.0, AUD 1.3, AUD 1.7

Very low contribution of own produced foods to the average dietary energy consumption

80% of total expenditures are allocated to food

## Contribution of food groups (and food products) to the average dietary energy consumption

44% Grains, roots and tubers products

17% Meat, fish and seafood products

12% Eggs, poultry and other animal products

8% Beverages

5% Milk and dairy products

More than 130 grams/capita/day consumed in the form of kava, smokeless or smoking tobacco!

Inadequate consumption of fruits and vegetables

130 grams<sup>1</sup> VS 400 grams<sup>2</sup> per capita per day

70% OF THE AVERAGE DIETARY ENERGY CONSUMED

## A diet rich in carbohydrates but within the WHO recommendations

70% Carbohydrates

10% Protein

20% Fat

National disparities in the distribution of macronutrients to dietary energy consumption

Relative cost of food<sup>1</sup>: 14x (Rural vs Urban)

Nutritional adequacy (percent)<sup>2</sup>

A: 119, B1: 93, B2: 87, C: 176, Calcium: 39

## WALLIS ET FUTUNA PROFIL SUR LA SECURITE ALIMENTAIRE

11 558 Population

72% Rural population

99.2% of households using improved sanitation (2018)

84.8% of population using improved drinking water (2018)

1 in 10 people are undernourished

18.8% of people live below the basic needs poverty line

23.3% of people experience moderate or severe levels of food insecurity

## SAMOA FOOD SECURITY PROFILE

195 979 Population (2018)

80% Rural population

92% of population using improved drinking water (2018)

5% of people are undernourished

18.8% of people live below the basic needs poverty line

23.3% of people experience moderate or severe levels of food insecurity

## VANUATU FOOD SECURITY PROFILE

295 495 Population (2018)

26.3% Urban population

88% of households using improved drinking water (2018)

1 in 10 people are undernourished

9.9% of people live below the basic needs poverty line

20.9% of people experience moderate or severe levels of food insecurity

## REPUBLIC OF THE MARSHALL ISLANDS FOOD SECURITY PROFILE

54 590 Population (2022)

75% Urban population

83.5% of households are using improved drinking water (2018)

5% of people are undernourished

7.2% of people live below the basic needs poverty line

1 in 3 households experience moderate or severe levels of food insecurity

## TUVALU FOOD SECURITY PROFILE

10 645 Population (2017)

37% Rural population

99.3% of households using improved drinking water (2018)

26.3% of people are undernourished

## TONGA FOOD SECURITY PROFILE

100 651 Population (2018)

77% Rural population

99% of population using improved drinking water (2018)

5% of people are undernourished

23.2% of people live below the basic needs poverty line

1 in 5 households experience moderate or severe levels of food insecurity

## SOLOMON ISLANDS FOOD SECURITY PROFILE

712 100 Population (2018)

82.5% of population using improved drinking water (2018)

1 in 10 people are undernourished

12.7% of people live below the basic needs poverty line

\$1.9 of people experience moderate or severe levels of food insecurity



# Food security profiles

**KIRIBATI**  
FOOD SECURITY PROFILE

**DEMOGRAPHICS**

Population (2015): **110 136**

47% Rural population

Region	Percentage
Line Is. & Phoenix	8%
Southern	14%
Central	7%
Northern	18%
South Tarawa	53%

Life expectancy (2018): **64** (Male) / **72** (Female)

Crude birth rate (2018): **26.9**

Under-five-years-old mortality rate: **61** per 1 000 live births (2018)

percentage of households using improved sources of drinking water (2018): **82.3%**

Urban	Rural
96.5%	65.8%

percentage of households using improved sanitation (2018)

Urban	Rural
60.6%	44.8%

**THERE IS A LONG WAY TO GO BEFORE ENDING FOOD INSECURITY AND POVERTY IN KIRIBATI!**

- Around **8%** of people are undernourished
- Around **22%** of people live below the basic needs poverty line\*
- 41%** of people experience moderate or severe levels of food insecurity

Source: Global Household Income and Expenditure Survey 2019; Population and Housing Census 2015; Kiribati Socio-Development Indicator Survey, 2018/19; FAO FAOSTAT 2019; World Health Organization, 2017; World Development Indicators; World Bank 2020

**ADULT OBESITY IS A MAJOR HEALTH ISSUE IN KIRIBATI**

Children under five years old (2018)

- 3.5%** WASTING (Low weight for height)
- 15.2%** STUNTING (Low height for age)
- 6.9%** UNDERWEIGHT (Low weight for age)

Prevalence of obesity in adult population (18 years and older)

- 35%** (2002)
- 46%** (2018)

**ANALYSIS OF FOOD CONSUMPTION PATTERNS IN KIRIBATI<sup>1,2</sup>**

Average national dietary energy consumption is around **2 760 kcal/capita/day** with some disparities at subnational level

Average cost to acquire 1 000 kcal

On average an i-Kiribati spends AUD1.4 to acquire 1000 kcal

Lowest income	AUD 1.0
Second income	AUD 1.3
Third income	AUD 1.7

The wealthier the household, the more expensive the calories consumed

Very low contribution of own produced foods to the average dietary energy consumption

The amount spent on average on food is AUD 3.5 per capita per day

60% of total expenditures are allocated to food

Income Group	Percentage of Expenditure on Food
Lowest	60.1%
Second	61.4%
Third	60.8%
High	56.8%

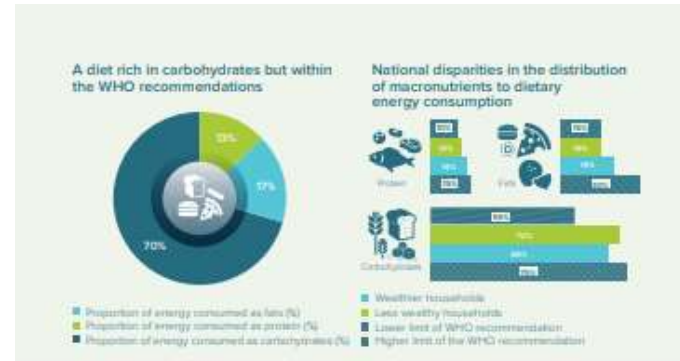
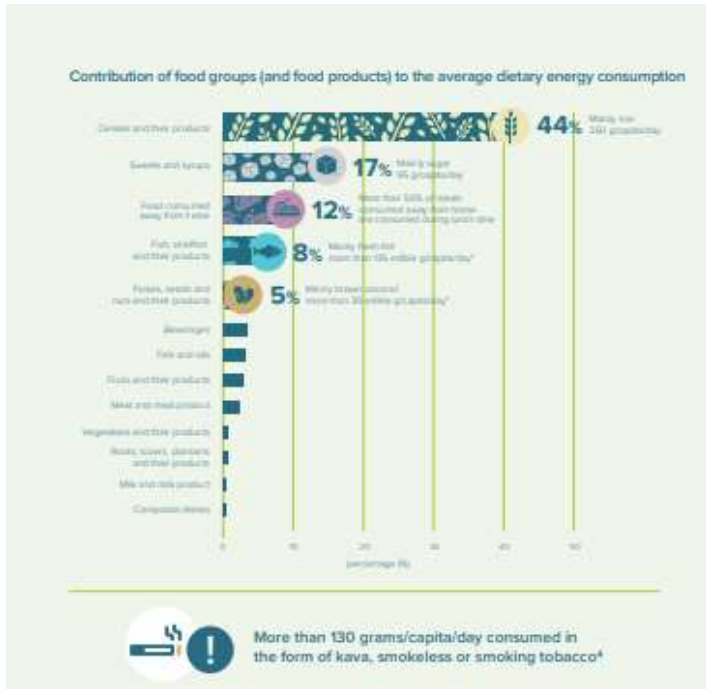
Legend:

- Purchased foods consumed at home
- Food consumed from own producer
- Food consumed away from home purchased or received free
- Food received for free and consumed at home

<sup>1</sup> Based on the analysis of the food data collected in the 2019 Kiribati Household Income and Expenditure survey. The sample was selected by SRS and 1 000 r/s identified in each of the 2019 households by the Global Health Measurement through the Global System for Agricultural Geographic Information Systems (GHS) and FAO/WHO. FAO/WHO contribution to the survey by the 2019/2020 survey.

<sup>2</sup> Based on the reported consumption and the based on food acquisition price (excluding the consumption by the household) not included in the survey.

# Food security profiles



#### Relative cost of food<sup>1</sup>

One gram of milk powder costs 14 times more than one gram of rice



Concentrated foods, fresh	0.8
Peanut butter	0.8
Rice, not further specified	1.0
Sugar, not further specified	1.4
Beast, fat, all others	1.5
Pumpkin	1.8
Breadfruit	2.0
Fat, lard, not further specified	2.0
Fish, pelagic/tunas, not further specified	2.4
Chicken, not further specified	4.2
Milk powder, condensed, not further specified	5.2
Egg, chicken, fresh	10.7
Milk, powdered, not further specified	14.0

<sup>1</sup> Relative difference between cost of one gram of product and cost of one gram of rice

#### Nutritional adequacy (percent)<sup>2</sup>

Diet rich in vitamins B12 and C but poor in calcium and vitamins B1 and B2



#### Inadequate consumption of fruits and vegetables



<sup>1</sup> WHO survey

<sup>2</sup> These products are not consumed in Kiribati

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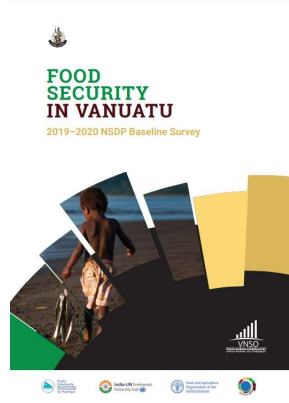
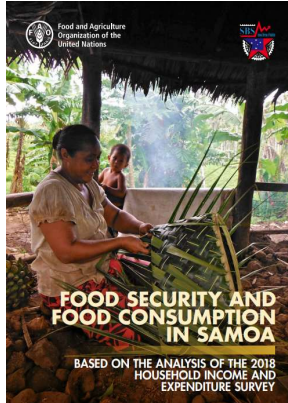
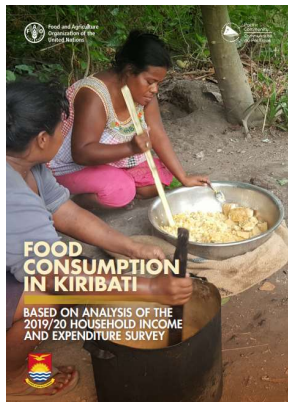
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04/2022 (10/2021)  
04/2022 (10/2021)

# Food consumption reports



## Distribution of dietary energy consumption

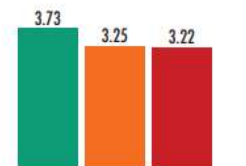
### Average dietary energy consumption by level of severity



SOURCE: Kiribati 2019/20 HIES.

## Distribution of the cost of food by level

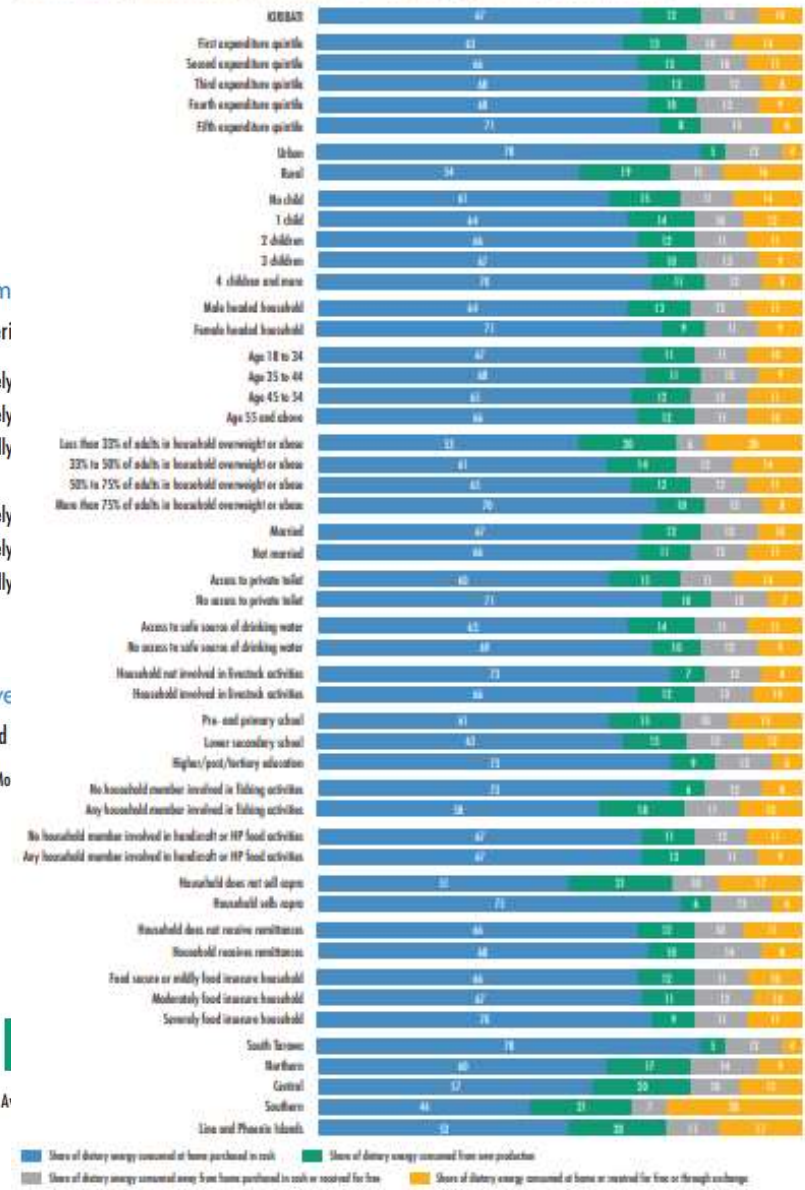
### Difference in the amount spent on food between food



Average food consumption in monetary value (AUD/capita/day)

SOURCE: Kiribati 2019/20 HIES.

Contribution of main sources of acquisition of dietary energy by household characteristics



SOURCE: Kiribati 2019/20 HIES.



# ADePT-FSM

## 1.3 Selected food consumption statistics by population groups

## 2.1 Food consumption by food commodity groups

### 5.1 Consumption of vitamin A

### 6.6 Contribution of food groups to micronutrient consumption by area

Average micronutrient consumption, % of total consumption

	Vitamin A	Retinol	Beta-carotene	Vitamin B1	Vitamin B2	Vitamin B12	Vitamin C	Calcium	Zinc	Animal iron
<b>Kiribati</b>										
<b>Urban</b>										
<b>Rural</b>										
<b>Percentage</b>										
Less than 33% to 50% or obese										
33% to 50% obese										
50 to 75% obese										
More than 75% overweight										
<b>Education</b>										
Pre- or primary										
Lower secondary										
Higher/pos										
<b>Any HH member</b>										
No HH member										
Any HH member activities										
<b>Urban</b>										
Cereals and their products	0.04	0.00	0.05	60.24	40.78	4.29	0.14	22.40	62.88	0.00
Roots, tubers, plantains and their products	0.09	0.00	0.12	0.54	0.21	0.00	2.92	0.82	0.67	0.00
Pulses, seeds and nuts and their products	0.00	0.00	0.00	1.08	0.40	0.00	3.58	1.01	1.78	0.00
Milk and milk products	1.49	4.74	0.14	1.20	7.69	3.25	0.39	11.09	1.69	0.31
Eggs and their products	0.44	1.48	0.00	0.09	0.60	0.35	0.00	0.15	0.17	0.93
Fish, shellfish and their products	14.29	47.38	0.56	9.56	19.10	76.48	0.80	21.05	13.18	60.20
Meat and meat products	3.44	10.12	0.69	4.69	7.82	12.89	0.48	1.11	11.64	26.40
Vegetables and their products	60.38	0.00	85.49	2.61	4.47	0.00	18.98	4.98	1.55	0.00
Fruits and their products	4.23	0.00	5.96	5.40	3.74	0.00	30.72	4.84	1.26	0.00
<b>Fats and oils</b>										
Fats and oils	10.1		0.0	87		0.0	0.0		9.7	
<b>Sweets and sugars</b>										
Sweets and sugars	120.2		0.3	465		1.8	106.9		3.2	
<b>Spices and condiments</b>										
Spices and condiments	16.4		0.1	6		0.5	0.6		0.1	
<b>Beverages</b>										
Beverages	162.5		0.3	101		0.7	21.2		0.7	
<b>Foods for particular nutritional uses</b>										
Foods for particular nutritional uses	0.3		0.0	1		0.0	0.1		0.1	
<b>Food not classified</b>										
Food not classified	361.1		0.5	330		9.9	59.4		5.9	
<b>Food additives</b>										
Food additives	0.0		0.0	0		0.0	0.0		0.0	

# Capacity building

- FAO TCP on SDG 2.1
  - National workshop
  - Technical attachment to SPC
  - Sub-regional physical workshop
  - Regional virtual workshop



## SDG Target 2.1

By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

- **Indicator 2.1.1** - Prevalence of undernourishment
- **Indicator 2.1.2** - Prevalence of moderate or severe food insecurity based on the food insecurity experience scale (FIES)



# Harmonisation

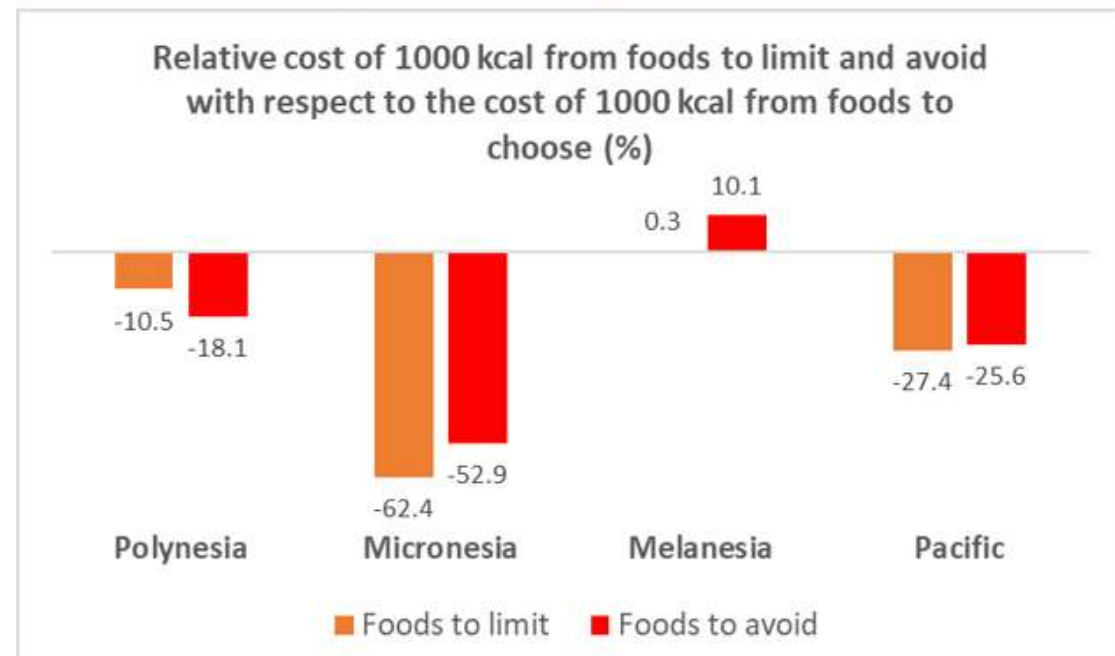
Source: Troubat et al 2023 (provisional and not to be cited)

Table 7. Contribution of main sources of dietary energy by food groups (%)

	Purchase				
Cereals	93%	Cereals and their products			
Roots, tubers, plantains	17%	Roots, tubers, plantains and their products			
Pulses, seeds and nuts	11%	Pulses, seeds and nuts and their products			
Milk and milk products	98%	Milk and milk products			
Eggs	96%	Eggs and their products			
Pelagic fish	46%	Fish, shellfish and their products			
Reef fish	22%	Meat and meat products			
Invertebrates/shellfish	29%	Vegetables and their products			
Canned fish	74%	Fruits and their products			
Processed fish	62%	Fats and oils			
Other fish, fresh	37%	Sweets and sugars			
Meat offal	95%	Spices and condiments			
Poultry	87%	Beverages			
Beef	74%	Composite dishes			
Pork	19%	Savoury snacks			
Sheep meat	94%		2%	3%	96%
Canned meat	79%		33%	2%	60%
Processed meat	93%		5%	8%	67%
Other meats	74%				
Vegetables	60%				
Fruits	15%				
Fats and oils	98%				
Sweets and sugars	95%				
Spices and condiments	95%				
Beverages	65%				
Composite dishes	87%				

Table 9. Percentage difference between the cost of 1000kcal from the food group with respect to 1000kcal from roots/tubers/plantain and average in-house dietary energy consumed (kcal/capita/day)

Graph 6. Percentage difference between the cost of 1000 kcal from foods to limit or avoid with respect to 1000 kcal from foods to choose



Thank you 😊