

**Regional Training Workshop on Linking Population and Housing Censuses with Agricultural Censuses  
Noumea, New Caledonia**

**28 May - 1 June 2012**

**Practical D: Food Security Modules for Linked Censuses and Household Surveys**

Learning Objective

To identify food security indicators relevant to policy needs in the Pacific.

Output

Prepare a 10 minute presentation discussing:

Key data items for a HIES food security module to identify causes, coping strategies and vulnerability

Consult the indicators in Annex 1 and the Food Security Module H of the Malawi Example.

- Identify the key food security indicators relevant in the Pacific - see Annex 1 of the practical.
- Which can be realistically produced?
- What data sources are available?
- For indicators which require additional data are appropriate the nutrition and calorie tables for conversion available?
- Are there other issues which are not covered by these indicators? Identify appropriate indicators.
- Do any of the issues of seasonality, vulnerability, coping situation, causes of food insecurity apply in the Pacific. Would you have a separate food security module like the module H to collect data on these issues?

## Annex 1: FS Indicators

### Food Security Dimensions

**Food availability:** The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

**Food access:** Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

**Utilization:** Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

**Stability:** To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

### Food Security Indicators by Dimension

Indicators by dimension	Standard Module(s)	Usual source
<b>I. AVAILABILITY</b>		
<b>I.1. Food availability</b>		
<b>a. <u>Energy/quantities</u></b>		
Average per person dietary energy supply (DES) (kcal/person/day)		
Aggregate supply of basic food staples in cereal energy equivalent (kcal/person/day)		
Contribution of basic food staples to total DES (%)		
Cereals, roots and tubers as % of DES (% DES from staple food)		
Share of non-starchy foods in total DES (%) - Dietary energy		

index		
Share of non-starchy foods in total fat (%) - Dietary fat index		
Share of non-starchy foods in total protein (%) - Dietary protein index		
<b>b. <u>Nutrients</u></b>		
Contribution of each macronutrient (carbs, protein and fats) to total DES (%)		
Dietary protein supply per person (g/person/day)		
Animal products: share to total energy supply (%)		
Animal products: share to total protein supply (%)		
Animal products: share to total fat supply (%)		
Dietary fat supply per person (g/person/day)		
Dietary iron available for consumption (mg/person/day)		
Vitamin A available for consumption (mg/person/day)		
<b>I.2. Import requirement</b>		
Cereal import dependency ratio (%)		
Total food aid (million tons)		
Share of food aid in total supply (%)		
Emergency Food Aid (to victims of natural or manmade disasters) (tons)		
Project Food Aid (to support poverty reduction / disaster prevention activities) (tons)		
Programme Food Aid (resource transfer for payments balance/budgetary support act.)		
<b>I.3. Development assistance</b>		
Official Development Assistance to Agriculture		
<b>I.4. Agriculture productivity</b>		
<b>a. <u>Input</u></b>		
Agriculture, value added (% of GDP)		
Agriculture, value added (annual % growth)		
% of pop. economically active in agriculture on total economically		

active population		
Agricultural value added per worker (constant 2000US\$)		
Share of agriculture area over total land area (%)		
Share of arable land over total land area or agriculture area (%)		
Arable Land per capita (ha/person)		
<b>b. <u>Output</u></b>		
Area harvested, by each crops (ha)		
Cereal yields (hg/ha)		
Roots yields (hg/ha)		
Food Production per person, overall (kg/person/year)		
Production per person of cereals (kg/person/year)		
Production per person of starchy roots (kg/person/year)		
Net total Agriculture per capita Production Index Number		
Net per capita food Production Index Number		
Net per capita crop Production Index Number		
Net per capita livestock Production Index Number		
<b>II. ACCESS</b>		
<b>II.1. Socio economic indicators</b>		
<b>a. <u>economic well being</u></b>		
GDP per capita, PPP		
Growth in GDP per capita (annual %)		
Median family income	Income / Expenditures Modules	
<b>b. <u>Price</u></b>		
Consumer Prices Index, annual		
Consumer Prices Index , monthly		
Food Prices Index, annual		
Food Prices Index, monthly		
Prices of basic food staples, monthly (US\$/LUM or LCU/LUM)		

Agricultural Producer Price Index		
Average dietary energy unit value (LCU/1,000kcal)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Average unit value of proteins, carbohydrates and fats (LCU/1,000g)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Food Affordability ( <i>ie., number of times in the past 12 months the household didn't have enough money to buy food</i> )		Gallup Surveys
Producers price index of major staples and livestock		
<b>c. <u>Employment and education</u></b>		
Unemployment rate, annual (% total labor force) (%)		
Economically active children, total (% of children ages 7-14) (%)		
Adult literacy rate (%)		
School enrollment, primary, secondary and tertiary (% gross)		
<b>II.2. Outcome indicators of access</b>		
<b>a. <u>inequality and poverty</u></b>		
Gini index of income distribution (%)		
Gini index of income distribution (%)		
Share of the poorest quintile in national consumption (%)		
Share of the poorest quintile in national consumption (%)		
Gini coefficient of dietary energy consumption (%)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Coefficient of variation of dietary energy consumption (%)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Household Food Security Access Score (HFIAS)	Household FS access scale (HFIAS)	Food Security Assessments
Poverty Headcount Ratio at \$1.25 a day (PPP) (% of population)		
Poverty Headcount Ratio at \$2 a day (PPP) (% of population)		

Poverty Gap at \$1.25 a day (PPP) (%)		
Poverty Gap at \$2 a day (PPP) (%)		
Poverty Headcount Ratio at national poverty line (% of population)		
Poverty Gap at National Poverty line (%)		
<b>b. <u>Severity of hunger</u></b>		
Prevalence of undernourishment in total population (%)		
Number of People Undernourished (million)		
Depth of hunger (intensity of deprivation) (kcal/person/day)		
Household Hunger Score	Household Hunger Scale (HHS)	Food Security Assessments
Hunger (number of months any household member feels hungry during the year)		Gallup Surveys
<b>c. <u>Consumption</u></b>		
Average food consumption in monetary value (LCU/person/day)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Ratio of food expenditure to total family expenditure (Engel coefficient) (%)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Average dietary energy consumption (kcal/person/day)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Contribution of each food source of acquisition to total DEC (%)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Contribution of each food source of acquisition to total food expenditures (%)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Average consumption of carbohydrates, proteins and fats (g/person/day)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Share of carbohydrates, proteins and fats in total DEC (%)	Food Consumption Module	National HH Surveys (HIES, HBS,

	(Quantities and/or expenditures)	SES, LSMS)
Number of meals per day (adults and children)	Food Consumption Module (Quantities and/or expenditures)	National HH Surveys (HIES, HBS, SES, LSMS)
Household Dietary Diversity Score	HH Dietary Diversity Scale (HDDS)	Food Security Assessments
Reduced Coping Strategies Index (CSI)	Coping Strategy Index Module (CSI)	Food Security Assessments
Food Consumption Scores (FCS)	Food Consumption Score module (FCS)	Food Security Assessments
<b>II.3. Physical access</b>		
% population with access to secure land tenure	Agricultural modules	National HH Surveys or Agricultural Surveys
Market density (Number of markets per unit area)		
Road density (km of roads per 100 sq. km of land)		
<b>III. UTILISATION</b>		
<b>III.1. Outcome indicators (anthropometry)</b>		
Low birth weight babies (% of births)	body measurement	MICS/DHS/health facilities
prevalence of wasting (weight for height) (% of children under 5)	body measurement	MICS/DHS
prevalence of stunting (height for age) (% of children under 5)	body measurement	MICS/DHS
prevalence of underweight (weight for age) (% of children under 5)	body measurement	MICS/DHS
Mid-Upper Arm Circumference (mm)	body measurement	MICS/DHS
BMI-for-age (kg/m <sup>2</sup> )	body measurement	MICS/DHS
Chronic Energy Deficiency (CED) (or, Percentage of adults with BMI < 18.5) (%)	body measurement	MICS/DHS
<b>III.2. Outcome indicators (nutritional and health status)</b>		
Life expectancy at birth (years)		MICS/DHS/health surveys
Maternal mortality ratio (per 100,000 live births)		MICS/DHS/health

		surveys
Infant mortality rate (%)		MICS/DHS/health surveys
Under-five mortality rate (%)		MICS/DHS/health surveys
Exclusive breastfeeding (% of children under 6 months)		MICS/DHS
Vitamin A Deficiency	Blood test	MICS/DHS
Vitamin A supplementation coverage rate (% of children ages 6-59 months)		MICS/DHS
Prevalence of Anemia	Blood test	MICS/DHS
Consumption of iodized salt (% of households)	Salt test	MICS/DHS
Prevalence of Diarrhea		MICS/DHS
ARI treatment (% children)		MICS/DHS
Prevalence of HIV (% of population ages 15-49)	Blood test	MICS/DHS
Access to improved water and sanitation		MICS/DHS
<b>IV. STABILITY</b>		
<b>IV.1. economic stability</b>		
Yearly change in Food prices index (inflation) (%)		
Volatility of food price index (monthly change)		
Ratio Food Price Index on Consumer Price Index (%)		
Variability of food prices of the major staples		
<b>IV.2. Production variability</b>		
Index of variability of food production		
Yearly change in cereal and roots yields (%)		
<b>IV.3. Risk hazard shock</b>		
National monthly rainfall estimate (mm)		
Percentage of land with erosion risk (% of total area)		
Rate of deforestation (% of total area)		
Severely degraded land as % of total area		
Percentage of population affected by disasters (% of total population)		



IV.4. Political stability		
Political stability and absence of violence/terrorism		
Index of Government Effectiveness		
Index of Voice and Accountability		
Military Expenditure (% GDP)		