Food consumption score

Construction of the FCS

Food consumption score

Definition

The FCS is a composite score based on dietary diversity, food frequency, and relative nutritional importance of different food groups.

Food Consumption Score - 2

Definition

❧ Information is collected from a country specific list of food items and food groups.

❧ The interviewed is asked about frequency of consumption (in days) over a recall period of the past 7 days.

Food Consumption Score - 3

Definition

❧ Food items are grouped into 8 standard food groups with a maximum value of 7 days/week.

❧ The consumption frequency of each food group is multiplied by an assigned weight that is based on its nutrient content.

❧Those values are then summed obtaining the Food Consumption Score (FCS).

Food Consumption Score - 4

FCS

$$FCS = a_{staple}x_{staple} + a_{pulse}x_{pulse} + a_{veg}x_{veg} + a_{fruit}x_{fruit} + a_{animal}x_{animal} + a_{sugar}x_{sugar} + a_{dairy}x_{dairy} + a_{oil}x_{oil}$$

Where,

FCS   Food consumption score

x_i Frequencies of food consumption = number of days for which each food group was consumed during the past 7 days

(7 days was designated as the maximum value of the sum of the frequencies of the different food items belonging to the same food group)

a_i Weight of each food group

Food Consumption Score - 5

Food groups and weights

	FOOD ITEMS	Food groups	Weight
1	Maize , maize porridge, rice, sorghum, millet pasta, bread and other cereals	Cereals and Tubers	2
2	Cassava, potatoes and sweet potatoes		
3	Beans. Peas, groundnuts and cashew nuts	Pulses	3
4	Vegetables and leaves	Vegetables	1
5	Fruits	Fruit	1
6	Beef, goat, poultry, pork, eggs and fish	Meat and fish	4
7	Milk yogurt and other diary	Milk	4
8	Sugar and sugar products	Sugar	0.5
9	Oils, fats and butter	Oil	0.5
10	Condiments	Condiments	0

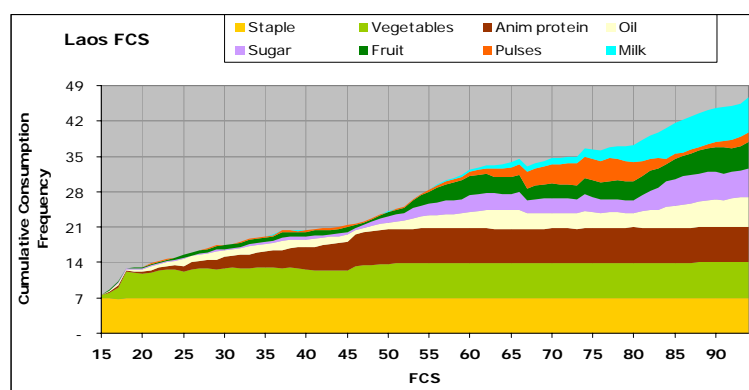Food Consumption Score - 6

Weights

Food groups	Weight	Justification
Main staples	2	Energy dense, protein content lower and poorer quality (PER less) than legumes, micro-nutrients (bound by phytates).
Pulses	3	Energy dense, high amounts of protein but of lower quality (PER less) than meats, micro-nutrients (inhibited by phytates), low fat.
Vegetables	1	Low energy, low protein, no fat, micro-nutrients
Fruit	1	Low energy, low protein, no fat, micro-nutrients
Meat and fish	4	Highest quality protein, easily absorbable micro-nutrients (no phytates), energy dense, fat. Even when consumed in small quantities, improvements to the quality of diet are large.
Milk	4	Highest quality protein, micro-nutrients, vitamin A, energy. However, milk could be consumed only in very small amounts and should then be treated as condiment and therefore re-classification in such cases is needed.
Sugar	0.5	Empty calories. Usually consumed in small quantities.
Oil	0.5	Energy dense but usually no other micro-nutrients. Usually consumed in small quantities

PER: Protein Efficiency Ratio, a measure of protein quality of food proteins.

Food Consumption Score - 7

Graph

This graph shows how many days on average each food group is consumed in relation to the FCS.

It aids in the interpretation and description of both dietary habits and in determining cut-offs for food consumption groups (FCGs).

Food Consumption Score - 8

The typical thresholds are:

Threshold	Profiles	Thresholds with oil and sugar eaten on a daily basis (~7 days per week)
0 – 21	Poor food consumption	0-28
21.5 - 35	Borderline food consumption	28.5 - 42
>35	Acceptable food consumption	>42

Food Consumption Score - 9

Thresholds

……Even though these thresholds are standardized there is always room for adjustments based on evidence……

Food Consumption Score - 10

Thresholds cont'

- Sudan
  - Two different thresholds were used north and the south Sudan
- Haiti
  - 26 & 40 were used because the consumption of oil and sugar among the poorest consumption were about 5 days per week.
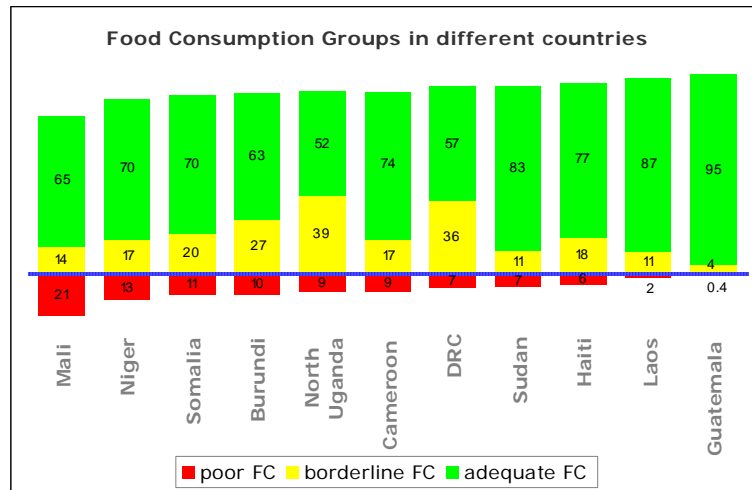

Reports/analyses where the FCS has been used (incomplete list)

- **Lesotho, Malawi, Mozambique, Swaziland, Zambia, Zimbabwe** CHS October 2005, March 2006, October 2006, March 2007, October 2007
- **Malawi** JAM February 2006
- **Namibia** JAM April 2006
- **Mozambique** JAM April 2006
- **Zimbabwe** VAC assessment: April/May 2006
- **Mozambique** VAC baseline survey: September 2006
- **Swaziland** VAC assessment: June 2007
- **Namibia** CHS: July 2006 and May 2007
- **Lesotho, Swaziland and Zimbabwe** CFSAM reports: March 2007
- **Zambia** JAM: June 2007
- **Zambia** VAC Assessment: September 2002
- **Madagascar** EFSA: June 2007
- **Zambia** Food Security, Health and Nutrition Information System, Urban Report, FAO/Central Statistical Office (Bi-annual Reports): 1996-1998
- **SADC VAC** Towards identifying impacts of HIV/AIDS on Food Security in Southern Africa: 2003

- **Chad** Food Security Survey: June 2007
- **Sudan** CFSVA 2007
- **Burundi** FSMS 2006-present
- **Cote d'Ivoire** EFSA 2006
- **Cote d'Ivoire** FSMS 2006-present
- **Uganda** EFSA 2007
- **Burundi** CFSVA 2005
- **Cameroon** CFSVA 2007
- **Mali** CFSVA 2006
- **Angola** FFE survey: October 2006
- **Armenia** Food Security Survey: 2000
- **Haiti** FSMS 2006-present
- **DRC** CFSVA (2007/8)
- **Afghanistan** FSMS 2006-present
- **OPT** Livelihood Baseline 2007
- **OPT** PPP 2007
- **Haiti** CFSVA 2007
- **Colombia** WFP/ICRC IDP in Urban Areas 2007
- **Guatemala** CFSVA 2007
- **Laos** CFSVA 2007

Results across surveys

Food Consumption Groups in different countries

	Mali	Niger	Somalia	Burundi	North Uganda	Cameroon	DRC	Sudan	Haiti	Laos	Guatemala
adequate FC	65	70	70	63	52	74	57	83	77	87	95
borderline FC	14	17	20	27	39	17	36	11	18	11	4
poor FC	21	13	11	10	9	9	7	7	6	2	0.4

■ poor FC ■ borderline FC ■ adequate FC

Food Security Information for Action Programme

Dietary diversity at household and individual levels

Marie Claude Dop
Gina Kennedy
Terri Ballard
Amélie Solal-Céligny

FAO Nutrition and Consumer Protection Division

Food Security Information for Action Programme

Outline

1. Rationale for using dietary diversity (DD)
2. What is the evidence base?
3. How is DD measured?
4. DD questionnaire and adaptation
5. Reporting of results
6. Current challenges and conclusion

1. Rationale for using dietary diversity

"Increasing dietary diversity helps ensure adequate intake of essential nutrients"

"Dietary diversity is a key element of high quality diet"

➢ Need for a simple proxy of food consumption to be used at national and decentralized levels

Dietary diversity is intended as a proxy of:
- access to food (household level)
- intake of energy and macronutrients
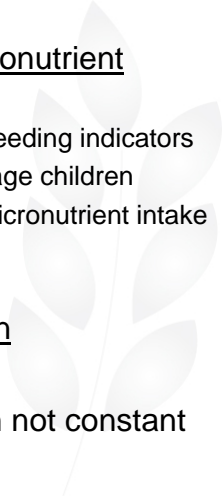- intake of micronutrients

Food Security Information for Action Programme

2. What is the evidence base?

▶ Validation of <u>household DD vs energy availability</u>
- 10-country study (Hoddinott & Yohannes, 2002)

▶ Validation of <u>individual DD vs macro/micronutrient adequacy</u>
- Working group on infant and young child feeding indicators
- Several studies on preschool and school-age children
- Women's DD project (validation against micronutrient intake in women)

▶ Correlation with <u>anthropometry of children</u>

▶ Correlation with anthropometry of women not constant
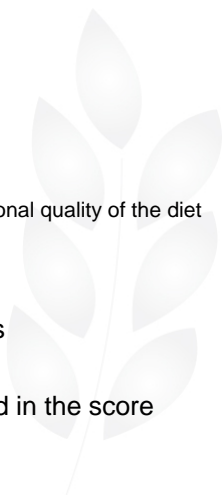
Food Security Information for Action Programme

3. How is dietary diversity measured?

The DD score is a simple count of food groups consumed over a certain reference period

➢ <u>Level of measurement</u>
  – household
    • refers to consumption inside the home
    • is considered an indicator of access to food
  – individual
    • refers to consumption inside and outside home
    • is considered a measure of intake and indicates nutritional quality of the diet
➢ <u>Food groups</u>
  – definitions of food groups homogenous
  – number of groups/level of disaggregation varies
  – groups that reflect nutrients of special interest
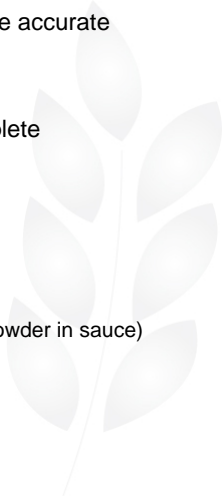 → currently no consensus on food groups counted in the score

<div style="text-align:center">Food Security Information for Action Programme</div>

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3. How is dietary diversity measured?

➢ <u>Reference period</u>
  – should represent usual diet at community level
  – should reduce memory bias and avoid respondent fatigue
  – options: 1 day to 1 week
    → 1 day is the most commonly used because more accurate
➢ <u>Interview technique</u> :
  - list-based
  - open recall with subsequent prompting : more complete
➢ <u>Scoring system</u>
  – weighting
    • of foods (Mozambique MDAT)
    • of food groups (WFP methodology)
  – usually simple count without weighting
➢ <u>Foods consumed in small amounts</u> (eg. spices, fish powder in sauce)
  – usually not counted
  – context specific
  – proposed 10g limit

<div style="text-align:center">Food Security Information for Action Programme</div>

4. DD questionnaire and adaptation

Dietary Diversity Questionnaire

Question number	Food group	Examples	YES=1 NO=0
1	CEREALS	bread, noodles, biscuits, cookies or any other foods made from millet, sorghum, maize, rice, wheat + *insert local foods e.g. ugali, nshima, porridge or pastes or other locally available grains*	
2	VITAMIN A RICH VEGETABLES AND TUBERS	pumpkin, carrots, squash, or sweet potatoes that are orange inside + *other locally available vitamin-A rich vegetables(eg. sweet pepper)*	
3	WHITE TUBERS AND ROOTS	white potatoes, white yams, cassava, or foods made from roots.	
4	DARK GREEN LEAFY VEGETABLES	dark green/leafy vegetables, including wild ones + *locally available vitamin-A rich leaves such as cassava leaves etc.*	
5	OTHER VEGETABLES	other vegetables, including wild vegetables	
6	VITAMIN A RICH FRUITS	ripe mangoes, papayas + *other locally available vitamin A-rich fruits*	
7	OTHER FRUITS	other fruits, including wild fruits	
8	ORGAN MEAT (IRON-RICH)	liver, kidney, heart or other organ meats or blood-based foods	
9	FLESH MEATS	beef, pork, lamb, goat, rabbit, wild game, chicken, duck, or other birds	
10	EGGS		
11	FISH	fresh or dried fish or shellfish	
12	LEGUMES, NUTS AND SEEDS	beans, peas, lentils, nuts, seeds or foods made from these	
13	MILK AND MILK PRODUCTS	milk, cheese, yogurt or other milk products	
14	OILS AND FATS	oil, fats or butter added to food or used for cooking	
15	SWEETS	sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies	
16	SPICES, CONDIMENTS, BEVERAGES	spices(black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages OR *local examples*	

http://www.fantaproject.org

http://www.foodsecinfoaction.org/News/tr/nut/guidelines.pdf

Food Security Information for Action Programme

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4. DD questionnaire and adaptation

Household level

- Expanded FANTA tool
- Score based on 12 groups
- Indicator of access to food
- Advantage :
  - economic purpose but some info of nutrition relevance
- Weaknesses :
  - does not measure consumption outside of home
  - no info on intra-household allocation

Individual level

- Adapted from Demographic and Health Survey (DHS) questionnaire to mothers of infants
- Score based on 14 groups
- Indicator of dietary quality
- Advantage :
  - real proxy of intake
  - simple, can be analyzed without computer
- Weakness :
  - does not reflect usual diet of individuals

Food Security Information for Action Programme

4. DD questionnaire and adaption

Food Security Information for Action Programme

Purpose of adaptation

Know local foods, know their name in local language, be able to classify them in the appropriate food group, know the usual ingredients of mixed dishes.

Done through:

> key informant interviews
> focus groups
> interviewer training
> household pre-test

5. Reporting of results

Food Security Information for Action Programme

✓ Frequencies
- % of households/individuals consuming each food group
- % of households/individuals consuming food groups that are good sources of specific nutrients

✓ Score
- Mean scores and standard deviations
- Distribution in tertiles
- Higher tertile as feasible target for evaluating community interventions

✓ Trend analysis
✓ Dietary profiles

Food Consumption Methodologies and Indicators

INCAP Perspectives

Odilia I. Bermudez, Tufts University School of Medicine / INCAP
Gabriela Mejicano, INCAP
Rome, April 2008

BACKGROUND
Early times at INCAP
(1949 – 1970's)

Dietary Assessment / Evaluation of Food Consumption Patterns

- Gaining knowledge about food patterns of the Central American population

- Identification and Documentation of changes, trends and periods of crisis that would affect the food intake and nutritional status of that population

BACKGROUND
Early times at INCAP
(1949 – 1970's)

Dietary Assessment / Evaluation of Food Consumption Patterns (FCA)

- Development of Tools to support FCA:
  - Latin American Food Composition Table
  - Nutrient Recommendations for the Central American population
- Design of Hybrid Methodology for FCA

INCAP:
Hybrid Methodology for FCA

Retrospective: **Food intake data**

- **24-Hr Recalls**
  - Food consumption data during the previous 2-3 meals before the interview
  - Recall about the two or three previous meals to the interview

INCAP:
Hybrid Methodology for FCA

Prospective: **Food weighing**

- Foods to be prepared / eaten during and after the interview were weighed, including leftovers.
  - Data collection lasted between 1 – 7 days.
  - Use of two types of scales:
    - Large, graduated in pounds for large quantities (e.g. corn and beans)
    - Dietetic scale, in grams, for smaller quantities (e.g. bread, tortillas, vegetables and condiments)

INCAP:
Hybrid Methodology for FCA

Complementary data

- Data about family composition, demographics and socio-economics was obtained in order to:
  - Estimate energy and nutrient needs
  - Estimate energy and nutrient adequacy levels
  - Interpret dietary data

INCAP
Contemporary Times
21st Century

- Methodologies for FCA
  - Techniques and procedures more accessible to Managers and Users
  - Scientific standards
  - Appropriate validity and reliability criteria
  - Sensible for evaluation and monitoring

INCAP
Contemporary Times
21st Century

- Currently, the focus of FCA has shifted from problems of deficits and deficiencies to a more inclusive one that covers the whole malnutrition spectrum

  - From under nutrition and deficits to malnutrition due to excesses in energy intake and nutrient imbalances.
  - Need for methodologies in FCA that are sensitive enough to detect changes and trends in food patterns and nutrient intakes
  - Countries and regions at different stages of the technological, demographic, epidemiological and nutritional transitions occurring across the globe.

INCAP
Contemporary Times
21st Century

Food consumption patterns are influenced by:

- Rapid and easy access to the global food supply,
  - Advertising of those products;
- Shift in the demographic structure of most populations, with substantial increases in the older groups at expense of the younger groups
- Trends in morbidity and mortality, with decreasing rates of infectious diseases and higher rates of non-communicable chronic conditions.

Development of a FCA Methodology at INCAP

Modified FCA Methodology:

- Food frequency questionnaire (INCAP-FFQ);
- Database for entry and processing of collected data;
- Supporting tools for data analysis
  - Nutrient database,
  - Coding references
  - Dietary recommended intakes

INCAP- FFQ
Food List – 4 CA Countries

INSTITUTO DE NUTRICION DE CENTROAMERICA Y PANAMA
PROGRAMA CRECIENDO BIEN

CRECIENDO BIEN

DIVERSIDAD DE LA DIETA Y SUFICIENCIA DEL CONSUMO DE ALIMENTOS

Leer los alimentos/ grupos de alimentos de la lista de abajo (Columna 1)
Circular la respuesta (Si / No) en la casilla correspondiente en la Columna 503
Para las preguntas con respuesta afirmativa, preguntar:
¿Cuántos días a la semana consumieron ese alimento la semana pasada? (504 A). Luego, preguntar cuántas veces cada día (504 B)
¿Cuánto (en cantidad) fue lo que se cocinó, preparó o compró, por vez para toda la familia de este alimento/ bebida/ producto? – Anotar la cantidad en la Columna 505 A y la unidad de medida (ejemplo: libra, onza, unidad, docena, taza, mano, etc.) en la Columna 505 B. (ver códigos de unidad de medida al final de esta sección)

Alimentos y Grupos de Alimentos	503		FRECUENCIA		CONSUMO	
	¿Se consumió?		504 A	504 B	505 A	505B
	SI	NO	Anote el número de días en la semana que consumió ___?	Cuántas veces cada día	Cantidad cada vez	Unidad de medida
GRANOS BASICOS						
1. Maíz seco, en grano, para tortillas, tamalitos, tamales, atoles, etc.	1	0				
2. Tortillas de maíz (en lugar del maíz en grano, ej. compradas)	1	0				
3. Sorgo / maicillo	1	0				
4. Frijoles	1	0				
OTROS CEREALES						
5. Arroz	1	0				
6. Pastas	1	0				
7. Pan, dulce o francés, galletas	1	0				
8. Cereal de desayuno cocido (ej., avena/mosh e Incaparina)	1	0				
9. Cereal de desayuno frío (ej., corn flanes)	1	0				
PLATANOS, PAPAS Y RAÍCES						

INCAP- FFQ
meals per day & Food reserves

INSTITUTO DE NUTRICION DE CENTROAMERICA Y PANAMA
PROGRAMA CRECIENDO BIEN

CRECIENDO BIEN

Consumo de Alimentos a Nivel Familiar

Tiempos de Comida Durante la Última Semana, Refacción de la Casa / Refacción Escolar y Alimentos Donados

Instrucciones: Pregunte el número aproximado de comidas hechas durante la semana pasada. Ejemplo, si la respuesta es: "todos los días comemos las tres comidas", entonces deberá poner en la casilla correspondiente: 21 (3 comidas x 7 días de la semana)

No.	Pregunta	Opciones de respuesta			
501	Tiempos De Comida ¿Cuántas comidas al día hizo su familia durante la última semana?	_____ número comidas a la semana – últimos 7 días			
ENCUESTADORA: PREGUNTAR EL ORÍGEN DE CADA TIPO DE GRANO MENCIONADO Y MARCAR CON UNA "X" LA CASILLA DONDE CORRESPONDE					
502	Por favor, mencióneme qué granos básicos tiene disponibles:	Cuáles	Donados	Comprados	Producidos
		a.			
	Códigos de granos Básicos 01 Maíz	b.			
	02 Frijol	c.			
	03 Sorgo 04 Arroz	d.			

INCAP- FFQ
Entry Database

ORMULARIOS

II. A.-Tiempos de Comidas
B.- Granos Basicos

codigo fam

comidas x sem
☐ Si   ☐ No
refac_veces x ser
alim en refac

maiz_cons   sorgo_cons   frijol_cons
maiz_frec   sorgo_frec   frijol_frec
maiz_peso   sorgo_peso   frijol_peso
maiz_med   sorgo_med   frijol_med
maiz_suf   sorgo_suf   frijol_suf

arroz_cons   pan_cons   otr cer_cor
arroz_frec   pan_frec   otr cer_fre
arroz_peso   pan_peso   otr cer_pes
arroz_med   pan_med   otr cer_med
arroz_suf   pan_suf   otr cer_suf

INCAP- FFQ
Supporting Tools
E.g., Nutrient Recommendations

tblrecom_nutrientes : Table

Sexo	Edad_unidad	Edad	VitA_RE (ug)	Vit C (mg)	Calcio (mg)	Magnes (mg)	Hierro (mg)
Infante	meses	0 -2.9	350	20	500	30	...
Infante	meses	3 - 5.9	350	20	500	45	10
Infante	meses	6 - 11.9	350	20	500	60	10
Niño-a	años	1 - 3.9	400	30	400	80	10
Niño-a	años	4 - 6.9	400	35	500	120	10
Niño-a	años	7 - 9.9	400	40	800	170	12
Hombre	años	10 - 12.9	500	45	1000	220	14
Hombre	años	13 - 15.9	600	50	1000	280	18
Hombre	años	16 - 18.9	600	60	1000	300	11
Hombre	años	19 -64.9	600	60	1000	300	11
Hombre	años	65+	600	60	800	300	11
Mujer	años	10 - 12.9	500	45	1000	230	15
Mujer	años	13 - 15.9	500	50	1000	270	20
Mujer	años	16 - 18.9	500	60	1000	290	24
Mujer	años	19 -64.9	500	60	1000	250	24
Mujer	años	65+	500	60	800	250	9
Embarazada	años		600	70	1000	300	...
Lactante	años		850	85	1200	325	13

Some Experiences with the INCAP-FFQ

- Calibration by Nutrition Professionals and Technicians in Central America (4 countries)
- First Calibration and Validation Study (INCAP, PRESANCA* and PESA**-FAO) –Guatemala***
- Second Calibration and validation with local technicians working in PRESANCA – 4 countries
- Evaluations (2) of "Creciendo Bien" / Growing Well Program in Guatemala

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* Programa Regional de Seguridad Alimentaria y Nutricional de Centro America / EU
** Programa Especial de Seguridad Alimentaria / FAO
*** Details discussed in this presentation

Calibration and Validation Study in Guatemala

- Three communities: 2 rural, 1 urban
- Calibration: language, sequence, structure (5 families)
- Validation: 32 families
  - 24-hr recalls (2-3 non-consecutive)
  - INCAP-FFQ

Calibration and Validation
Some Results:
Food Sufficiency vs. Food Amounts

VERSION 1			VERSION 2	
The amount the family ate was **Not enough:** one or more family members were still hungry after eating the meals **Enough:** All family members felt that they have enough, without over-eating **More than enough:** Family members ate more than enough			**Amounts of Foods for Family Consumption** How much (amount of food) did you buy, prepare or cook, per day, when this product (___) was used. Write the amount in **Column 4a** and the measuring unit in **Column 4b** (see codes below)	
(4) Insufficient	(4) Sufficient	(4) More than Sufficient	(4a) Amount	(4b) Measuring Unit

Calibration and Validation
Some Results:
More Food Items

VERSION 1	VERSION 2
VEGETABLES 1. Green leaves 2. Yellow vegetables 3. Root crops and Plantains 4. Other Vegetables **STARCHY VEGETABLES** (Included in the vegetable group)	**VEGETABLES** 1. Vegetables for salsas 2. Tomatoes 3. Peppers 4. Green leaves 5. Yellow vegetables 6. Other vegetables **STARCHY VEGETABLES** 1. Plantain 2. Potatoes 3. Cassava 4. Other root crops

Calibration and Validation
Some Results:
Meals per day and Food Diversity

Community	Total Families	Meals / Day ($\bar{X} \pm$ SD)	Food Diversity / Wk ($\bar{X} \pm$ SD)
San Antonio	10	3.20 ± 0.60	22.1 ± 3.4
Capa Rosa	11	2.86 ± .0.32	11.1 ± 2.5
Santo Domingo Xenacoj	11	3.45 ± 0.66	22.6 ± 1.7
Total	32	3.17 ± 0.60	18.5 ± 6.0

Calibration and Validation
Some Results

Association between meals per day and adequacy of energy intake (% requirement)

Adeq Energy Per cap = 41.5 + 19.5 x meals/day
R2 = 0.14
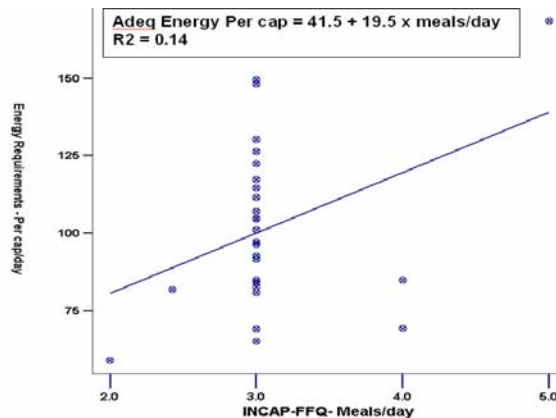
Calibration and Validation
Some Results

Food Group Rankings: Agreement with main energy contributors

Food Group	Consumption of Total Energy (%)			
	24-hr Recalls		INCAP-FFQ	
	Position	% Food Energy	Position	% Food Energy
Corn	1.0	50.3	1.0	56.7
Sugars	2.0	14.4	2.0	9.1
Beans	3.0	10.0	3.0	8.5
Subtotal	**--**	**74.7**	**--**	**74.3**

Calibration and Validation
Some Results

Food Group Rankings: Disagreement with energy contribution from animal products

Food Group	Consumption of Total Energy (%)			
	24-hr recalls		INCAP-FFQ	
	Position	% Food Energy	Position	% Food Energy
Meat, poultry & fish	4.0	7.4	9.0	2.0
Milk and Dairy Prod	12.0	1.0	4.0	5.0
Eggs	9.0	1.2	11.0	1.0
Subtotal	**--**	**9.6**	**--**	**8.0**

Calibration and Validation
Some Results

Over-estimation of energy with the INCAP-FFQ

- **Recalls: 2,200 $\pm$ 108 kcal/per capita/day**

- **FFQ: 2,804 $\pm$ 156 kcal/per capita/day**

**P<0.001

Calibration and Validation
Some Results
Significant, positive correlations in energy and nutrient estimates

	CORRELATIONS	
	Coefficient (R)	Significance (P)
Energy (Kcal)	0.92	0.000
Protein (g)	0.90	0.000
Fat (g)	0.71	0.000
Carbohydrate (g)	0.93	0.000
Vitamin A (ug RE)	0.83	0.000
Vitamin C (mg)	0.62	0.001
Calcium (mg)	0.48	0.001
Iron (mg)	0.90	0.000
Zinc (mg)	0.82	0.000

COMMENTS

- This methodology is a work in progress
- We had obtained promising results from the validation study and additional ongoing work
- We already identified some "challenging areas" that require more work. E.g., Estimations of
  - Total food amounts
  - foods eaten away from home
  - Use of dietary supplements

MUCHAS GRACIAS!
THANK YOU!

Field experiences with HDDS

Results from Mozambique and Somalia

Mozambique baseline and follow up study in Sofala and Manica Provinces

- Baseline survey in 4 districts of 2 central provinces in Dec 2006 (pre harvest)

- Repeat survey in July 2007 in Chibabava and Gondola Districts (post harvest) to test sensitivity of tools to changes over time

- Key variables: DD, HFIAS, women's BMI, wealth

Measuring changes in dietary diversity over time. Mozambique, 2 districts

mean Food Groups (HDDS)

District	Pre harvest	Post harvest
Chibabava *	4.0	3.2
Gondola	4.1	4.3
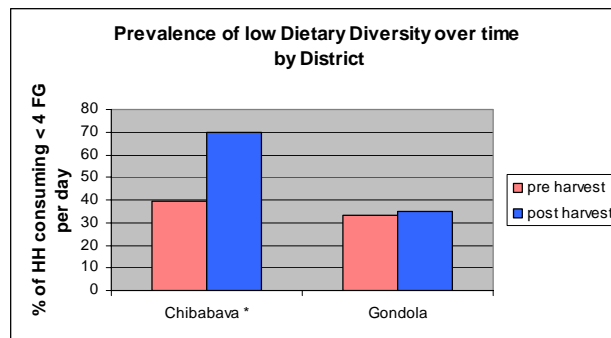
Prevalence of low Dietary Diversity over time by District

Measuring changes in consumption of certain food groups over time. Mozambique, 2 districts

Chibabava

Gondola
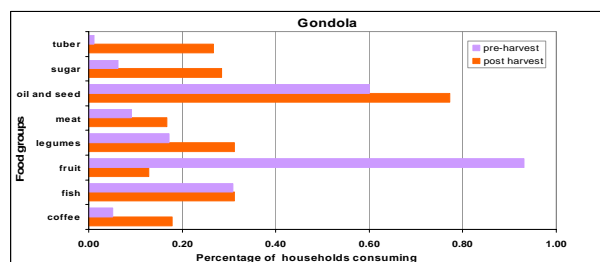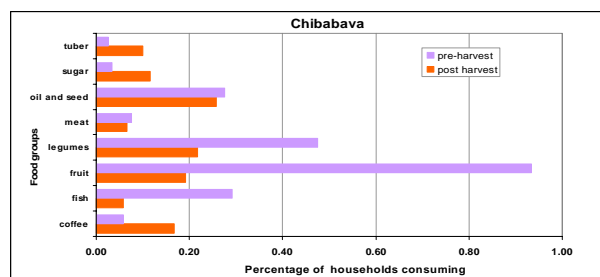
Food Access or Availability.
Measuring changes in consumption of certain food groups over time. Mozambique, Chibabava

Chibabava Legume consumption - difference between 2 periods

Legend: ■ pre harvest ■ post harvest

y-axis: percent consuming (0–60)
x-axis: wealth category (poorest, medium, best off)
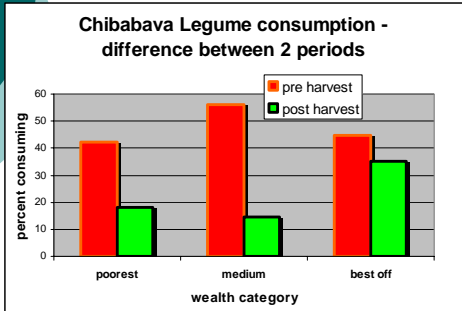
Is there a difference in the reduction of consumption by wealth status?

Chibabava fish consumption - difference between 2 time periods

Legend: ■ pre harvest ■ post harvest

y-axis: % consumed (0–60)
x-axis: wealth category (poorest, medium, best off)
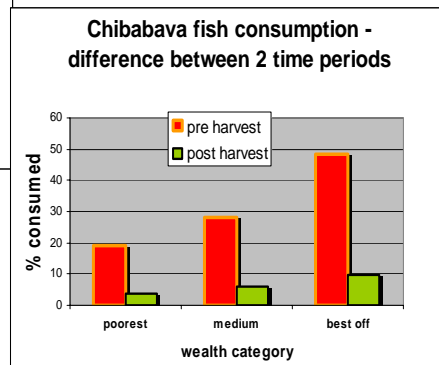
Dietary Diversity Score associations with other food security and nutrition variables. Mozambique, 2 districts

Mean DD score across categories of other indicators

y-axis: DD score (0-12) (3 to 4.5)
x-axis: no, yes

Legend: —— male HoH - - - women educated *
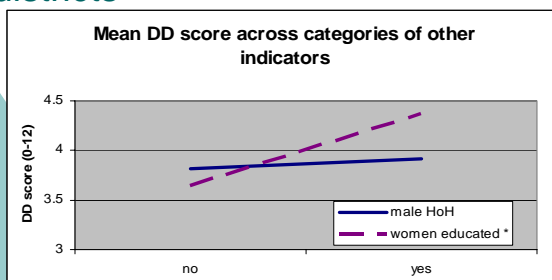
Higher DD associated with women's education, greater wealth and fewer poor or malnourished women

Proportion of women with low BMI and households with low wealth by dietary diversity tercile

Legend: ■ low BMI ■ low wealth

y-axis: % in each DD group (0–70)
x-axis: low DD, medium DD, hi DD *
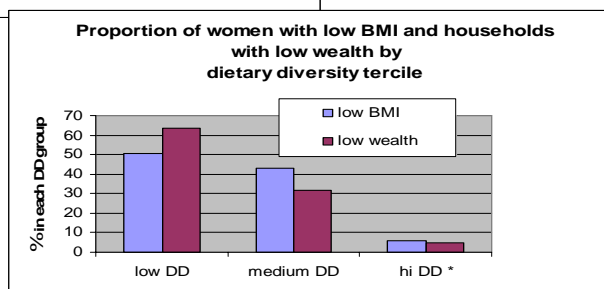
Somalia

○ FSAU Food Security assessment
○ Conducted in December 2006 (end of rainy season, good food availability)
○ Mainly pastoral population
○ 430 households (mean hh size: 6.3 members)
○ Objective: determine the nutritional status of the children and identify underlying factors contributing to undernutrition.

Main results and comparison with other variables

○ Mean HDDS: 4.14 (*SD 1.4*)
○ 34 % HHs consumed <= 3 food groups

SES indicator	n	HDDS
Main source of income		
Livestock	209	3.7 (1.2)
Crops	39	4.1 (1.1)
Casual labor	134	4.2 (1.4)
Trade	42	5.7 (1.7)
Salary or remittance	6	4.0 (0.0)
Residence		
Urban	192	4.3 (1.6)
Rural	238	4.0 (1.2)
Main source of food for the household		
Own production	64	3.2 (1.2)
Purchase	310	4.4 (1.4)
Other (food aid, gift, borrow)	55	3.8 (1.2)

Comparisons of diet profiles in Mozambique and Somalia

Mozambique

Lowest DD <4	Medium DD 4-5	High DD >5
Cereals	Cereals	Cereals
Green leafy vegetables	Green leafy vegetables	Green leafy vegetables
Vitamin A rich fruit	Vitamin A rich fruit	Vitamin A rich fruit
	Oil	Oil
		Other vegetables
		Fish
		Legumes, nuts and seeds

Somalia

Lowest DD <4	Medium DD 4-5	High DD >5
Cereals	Cereals	Cereals
Milk and milk products	Milk and milk products	Milk and milk products
Sugar	Sugar	Sugar
	Oil	Oil
		Meat
		Pulses

Food consumption score

Use in Food Security Monitoring Systems (FSMS)

World Food Programme
United Nations

Food consumption score

Analytical & Assessment Time Line for Emergency Preparedness & Response

1. Comprehensive Food Security and Vulnerability Analysis (CFSVA)
-Environmental
-Agro-pastoral
-Climatic
-Socioeconomic
-Demographic
-Infrastructure
-Identification of Indicators
-Understanding food security
-Vulnerable Population and Areas

5.Operational Planning & Emergency Response
for WFP Activities in targeted areas

2.Food Security Monitoring

Early warning

Time

Shock event

3. Contingency Planning

4. Emergency Food Security Assessment (EFSA)

Food Consumption Score - 2

Food Security Monitoring System:

❦Objective

    ❦To improve the food security situation by informing decision-makers, so they can take further action

❦Some characteristics:

    ❦ continuous data collection and timely analysis

    ❦ focus on vulnerable households and communities

    ❦ pre-defined geographic scope

    ❦ contextualized interpretation of the trends, risks, threats

    ❦ regular report dissemination to the users of the system,

    ❦ enables decision makers to take further action

Food Consumption Score - 3

Example: Burundi
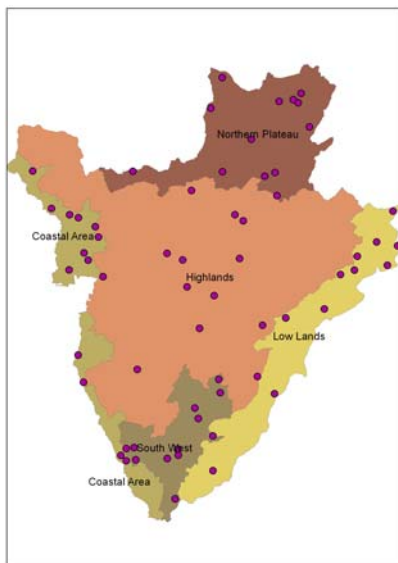
❦ Five zones were defined (*Northern Plateau, Highlands, Lowlands, South West and Coastal Area*), each with 12 (or more) sentinel sites of 10 households

❦ Measuring changes in the various indicators allows statements pertaining to the food security status by region or by type of household

❦ For Example: FCS based indicators

Food Consumption Score - 4

Evolution of the Food Consumption Score (FCS)
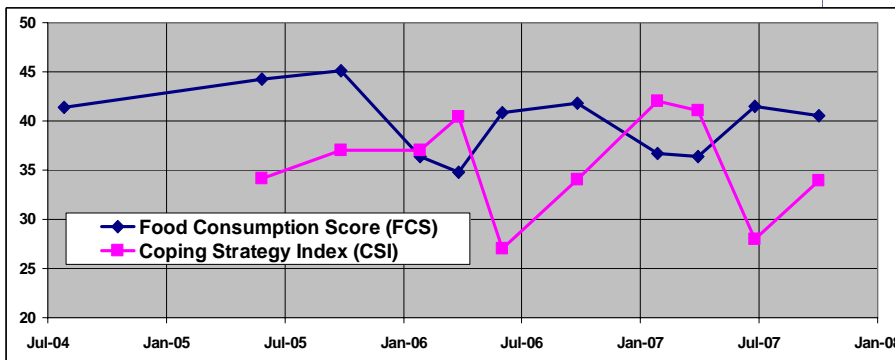
- January – March 2006 and 2007 show a dip in the average FCS, indicating lower food consumption
- The same periods show increased coping strategy index (CSI), indicating Households' difficulties in obtaining food

Food Consumption Score - 5

Prevalence of poor food consumption
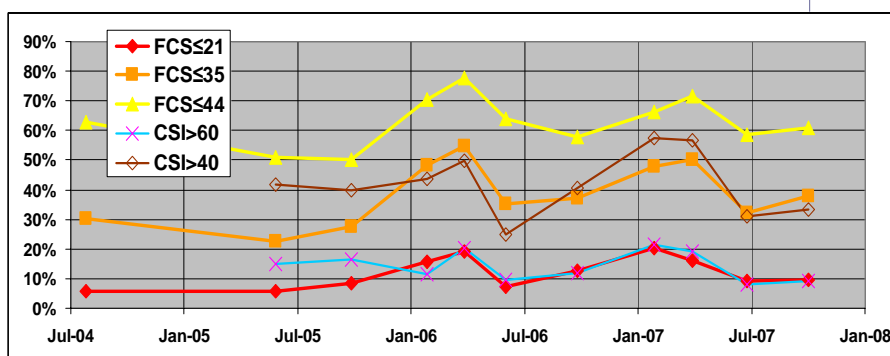
- The graph shows proportion of households with poor (FCS≤21), borderline (FCS≤35) and "???" (FCS≤44) food consumption
- These proportions correspond very well with proportions of households with a CSI>60 and CSI>40 respectively.

Food Consumption Score - 6

Comparing regions
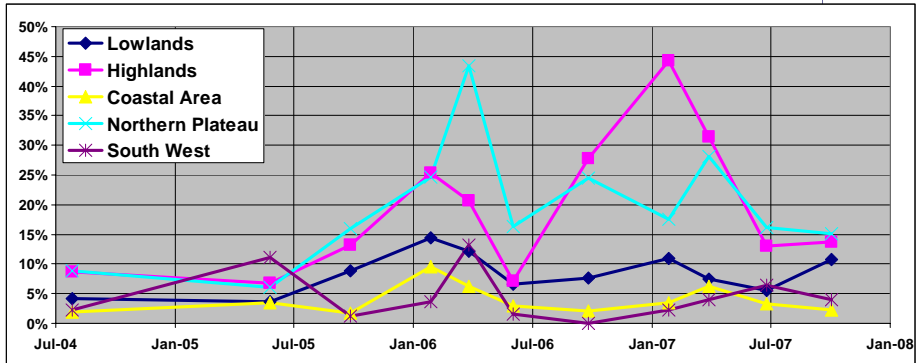
ɭ Disaggregation of the proportion of households with poor food consumption (FCS≤21), alerted the severe food insecurity situation in the Northern Plateau & Highlands in (2006) and (2007)

Comparing regions
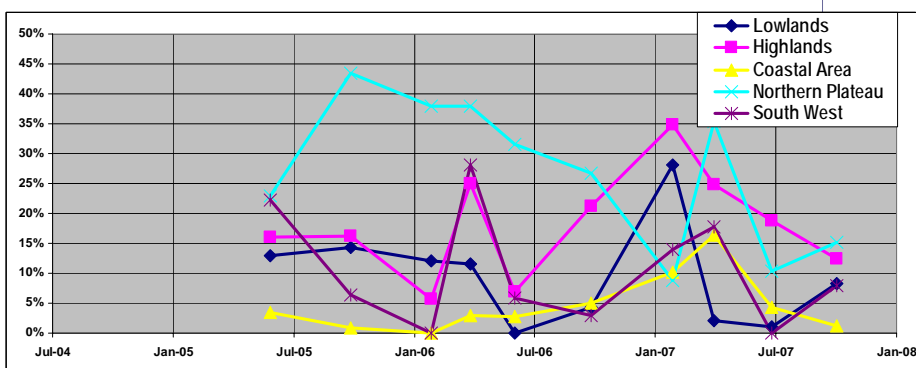
ɭ Similar results for the CSI>60, except that the CSI is already at alarming levels in October 2005 in the Northern Plateau, before the severe FCS is observed.

Comparing livelihood groups
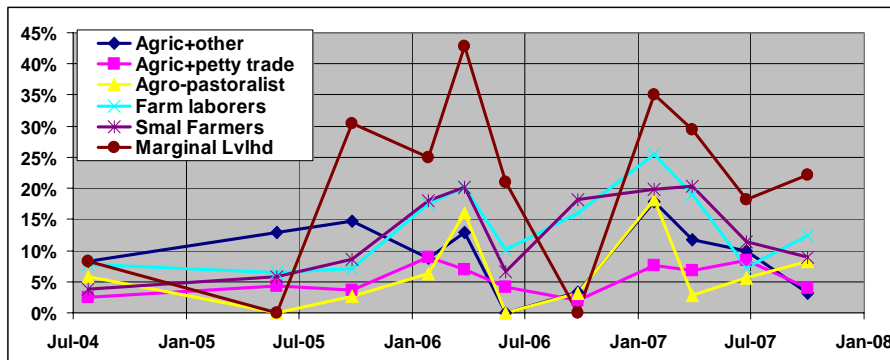
- Households with poor livelihood strategies (often aid dependent in 2004) relapse into poor food consumption during crisis.
- Small Farmers and Farm Labourers are more often affected.

Lessons Learned:

- Strengths:
  - The FCS is a well defined indicator, and cut-offs are standardized and used across regions and livelihood groups.
  - Reflects the "current" food security situation well: ideal to track over time; objectively verifiable.
  - The FCS can clearly indicate severe situations.
  - The FCS is in line with other indicators.
- Weaknesses:
  - The FCS is not an early indicator (but is "earlier" than anthropometric indicators).
  - The FCS gives only a "snapshot" of the last week and more information is required to be forward looking.

Food Consumption Score

Field Experience
CFSVA HAITI

Food consumption score

Background

- CFSVA, data collection in October, 2007.
- 3054 household sample size.
- National rural coverage (excluded urban).
- PDAs used in data collection.
- FCS used in FS monitoring in the Nord and Nord-Est Departments for past 2 years.

Food Consumption Score - 2

Data collection issues

- Food groups collected
  - 23 food groups/items were collected
    - In Haiti there is a wide variety of staple foods eaten,
    - Local terms were used for many items.
- Condiments
  - Enumerators were carefully trained not to include foods eaten as condiments.
- Sources of all 23 food items/groups were also surveyed.
- Recall period
  - In Haiti, contrary to many other countries, the 7-day recall was more difficult for the respondents, thus requiring more time for the enumerators.

Food Consumption Score - 3

Analysis
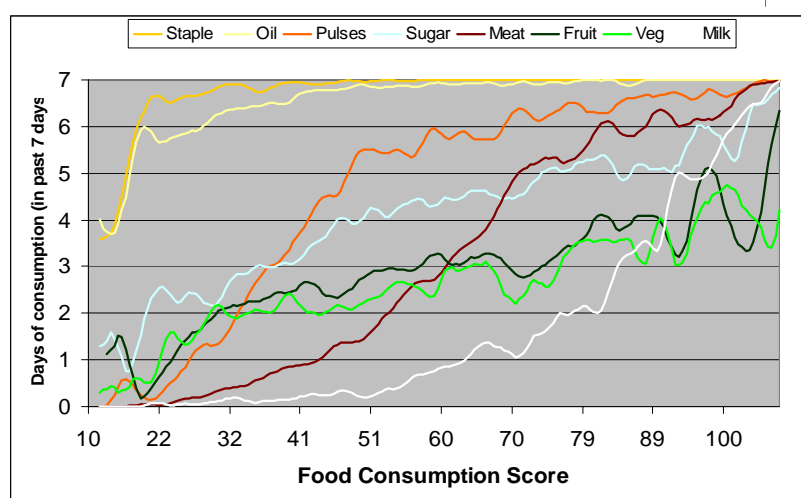
Food Consumption Score - 4

Cont'
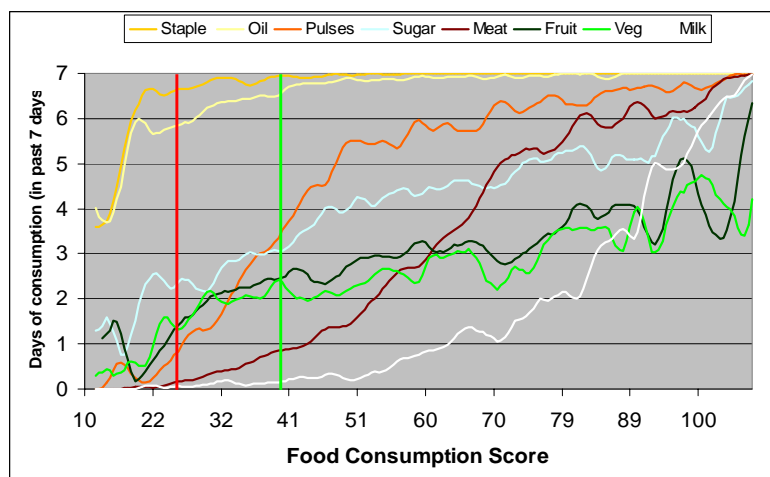
Food Consumption Score - 5

FCS Validation

Spearman's rho		Wealth Index	CSI reduced	CSI allnowt	Food Cons. Score	Total Cash Exp.	Total Cash exp. on FOOD	% of Total exp. on food
Wealth Index	Correlation Coeff.	1.000	-0.237	-0.326	0.360	0.437	0.376	-0.164
	Sig. (2-tailed)	.	0.000	0.000	0.000	0.000	0.000	0.000
CSI reduced	Correlation Coeff.	-0.237	1.000	0.808	-0.300	-0.078	-0.102	-0.033
	Sig. (2-tailed)	0.000	.	0.000	0.000	0.000	0.000	0.065
CSI allnowt	Correlation Coeff.	-0.326	0.808	1.000	-0.354	-0.140	-0.154	-0.002
	Sig. (2-tailed)	0.000	0.000	.	0.000	0.000	0.000	0.900
Food Cons. Score	Correlation Coeff.	0.360	-0.300	-0.354	1.000	0.444	0.506	0.035
	Sig. (2-tailed)	0.000	0.000	0.000	.	0.000	0.000	0.054
Total Cash exp. on FOOD	Correlation Coeff.	0.437	-0.078	-0.140	0.444	1.000	0.848	-0.310
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	.	0.000	0.000
Total Cash exp. on FOOD	Correlation Coeff.	0.376	-0.102	-0.154	0.506	0.848	1.000	0.162
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	.	0.000
% of Total exp. on food	Correlation Coeff.	-0.164	-0.033	-0.002	0.035	-0.310	0.162	1.000
	Sig. (2-tailed)	0.000	0.065	0.900	0.054	0.000	0.000	.
Total exp. per capita	Correlation Coeff.	0.420	-0.179	-0.220	0.423	0.845	0.754	-0.186
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Food Consumption Score - 6

FCS- Validation (cont'd)

| | | Grouped Consumption Pattern Clusters (analyst's classification) | | | |
		poor	borderline	acceptable	Total
Food Consumption Groups	poor	2%	3%	1%	6%
	borderline	3%	9%	8%	19%
	acceptable	1%	7%	68%	75%
	Total	5%	18%	77%	100%

Good Match	78%
OK Match	20%
Poor Match	2%

Food Consumption Score - 7

Results

| | | Food Consumption Groups | | | |
		poor consumption	borderline consumption	acceptable consumption	Total
Département	Nord-Ouest	12%	30%	58%	100%
	Nord	12%	26%	62%	100%
	Nord-est	8%	27%	65%	100%
	Artibonite	6%	20%	74%	100%
	Centre	3%	15%	82%	100%
	Ouest	4%	16%	80%	100%
	Grande-anse	6%	26%	68%	100%
	Nippes	3%	8%	89%	100%
	Sud	4%	12%	84%	100%
	Sud-est	5%	15%	81%	100%
	Total	6%	19%	75%	100%

Food Consumption Score - 8

Link with other analysis

		Quintiles of Wealth Index					
		le plus pauvre	2eme	moyene	4eme	le plus riche	Total
Food Consumption Groups	poor consumption	44%	22%	20%	10%	4%	100%
	borderline consumption	32%	25%	20%	14%	9%	100%
	acceptable consumption	15%	19%	20%	22%	24%	100%
	Total	20%	20%	20%	20%	20%	100%

Food Consumption Score - 9

Link with other analysis (cont'd)

	Food consumption Groups			
Income source groups	poor consumption	borderline consumption	acceptable consumption	Total
Agriculture (petit)	8%	26%	66%	100%
Commerce non agricole	4%	11%	85%	100%
Vente de bois, charbon	7%	25%	68%	100%
Agro-pastoral	3%	13%	84%	100%
travail salarie	6%	21%	72%	100%
transfert de Haiti	8%	24%	68%	100%
Autres sources	5%	15%	79%	100%
Commerce agricoles	5%	18%	77%	100%
vente de travail dans l'agriculture	12%	21%	67%	100%
Prod. Indep./Transfer de l'entranger	6%	19%	76%	100%
Transferts de l'entranger	2%	12%	86%	100%
peche, chasse	0%	7%	93%	100%
Divers	6%	25%	69%	100%
services independantes	6%	15%	79%	100%
Total	**6%**	**19%**	**75%**	**100%**

Food Consumption Score - 10

Use in conclusions and recommendations

- The FCS and FCGs are being used currently in Haiti in making the following conclusions:
  1. As a proxy for 'current' food security (access), to provide an operational estimate, mainly at the 'low end'.
     - This prevalence, while subject to discussion, is relatively standardized, highly repeatable, and easy to monitor over time.
  2. Used in conjunction with other indicators to help describe who has poor consumption (poor food security), and to direct food security related interventions.
     - multivariate analysis to determine underlying causes/associations of poor food consumption.
  3. As an independent variable in nutrition analysis.
  4. As part of predictive analysis (risk analysis) to make qualitative statements about effects of potential future shocks to certain groups of households.

Food Consumption Score - 11

Weaknesses

- Slightly more time consuming in Haiti than in other countries to collect in the field.
- Cut-offs are hard to justify and bring partners into consensus without information of how FCS relates to kcal and nutrient quality.
  - Dietary pattern analysis allowed for better consensus building.
- In analysis, the FCS works better as a HH indicator. When used in individual-level analysis (such as nutritional analysis), it is less reliable (this is generally true).
- The FCS may not work well at the high extreme (in Haiti, and in general)- however, in the context of the survey, bias at the high extreme of the score was not of concern.

Food Consumption Score - 12

Strengths

- With adequate enumerator training and time in the field, the data appear to be relatively un-biased.
- The FCS was well-associated with other proxies of food security.
- The range of values (0-112) allowed for a careful exploratory analysis to define appropriate thresholds.
- The Government partners are using the FCS as a proxy of food security in their survey report.
- The FCS has been used in Haiti for the past two years as one of a set of food security monitoring indicators in the Nord and Nord-Est Departments.

Food Consumption Score - 13

NUSAPPS : Initiative Nutrition, Sécurité Alimentaire et Politiques Publiques au Sahel

Field experiences of
use of IDDS
in rural & urban Burkina Faso

Measures of food consumption – Harmonizing methodologies
WFP/FAO Interagency workshop
Rome, 9 & 10 April 2008

Elodie Becquey & Yves Martin-Prével

UR106-Nutrition, Alimentation, Sociétés

Institut de Recherche pour le Développement

IDDS in Burkina Faso

I. Contexts of use (rural/urban)
II. Practical aspects
III. Preliminary results
IV. Strengths and limitations
V. Recommendations

I. Contexts of use

- In *RURAL* Burkina Faso : Complementary Nutrition Survey (CNS) – August 2006
  - Objective : to estimate the feasibility and the potential added value of integrating nutritional information into the National Agricultural Survey (NAS)
  - NAS = every year (sample of 706 villages, 4444 HH); ➔ national & regional figures about agricultural production and food vulnerability.
  - CNS = sub-sample of the NAS ; Stratification according to households' predominant source of income (cereal production, cash crop production/cotton, pastoralism) ; final sample of 1161 HH / 2032 women ;
  - IDDS questionnaire to mother of a child<5 (+ other data: HFIAS, SES, mother & child anthropometry,etc.)

1/15

I. Contexts of use

- In *URBAN* Burkina Faso : Urban Food Vulnerability Project (UFVP) – June 2007
  - Objective : to characterize and better understand HH food vulnerability in urban areas, with the ultimate goal of developing urban-adapted tools for food monitoring and targeting of intervention
  - 60 clusters randomly selected in Ouagadougou; 50 HH surveyed per cluster (total of 3.000 HH)
  - IDDS questionnaire to women as part of a « quick » food vulnerability assessment (together with HFIAS, SES and basic demographic data)
  - NB: many foods eaten outside home

2/15

II. Practical & field experience (urban + rural)

- IDDS questionnaire of 21 items
- Before IDDS questionnaire: « compulsory draft »
- Additional column to « specify » (if any difficulty)

3/15

Table « **compulsory draft** »

We are interested in all what you have eaten or drank yesterday, from the time you woke up yesterday morning until that of this morning. What have you consumed ?

Wakin up/breakfast	morning	lunch	afternoon	dinner	evening/night

Did what you eat and drink yesterday, <u>at home or elsewhere</u>, at anytime, include... ?

			YES	NO	DNK*	in case there is a doubt, specify
QD01	CEREALS	White sorghum, red sorghum, millet, rice, maize, pasta (macaronis..), wheat (couscous, bread, round flat cake/buscuit…), fonio…	1	2	3	
QD02	ROOTS AND TUBERS	White sweet potato, potato, yam, cocoyam, other tubers , cassava (attiéké -dried and cooked cassava, Ivorian speciality-gari), + plantain (fried plantain)	1	2	3	
QD03	HIGH PROTEIN CROP	Beans (cowpea), Bambara groundnut /voandzou (Voandzeia subterranea), garden pea, chick pea, lentil, other grain legumes	1	2	3	

4/15

III. Results : distribution of IDDS

Répartition du SDA13

rural area

Pays — 1:Céréales — 2:Coton — 3:Elevage

IDDS 14 groups

urban area
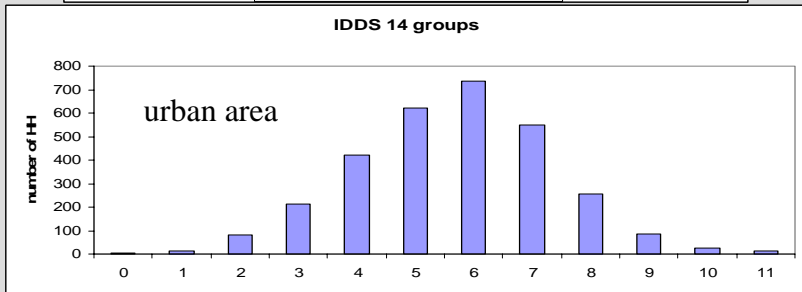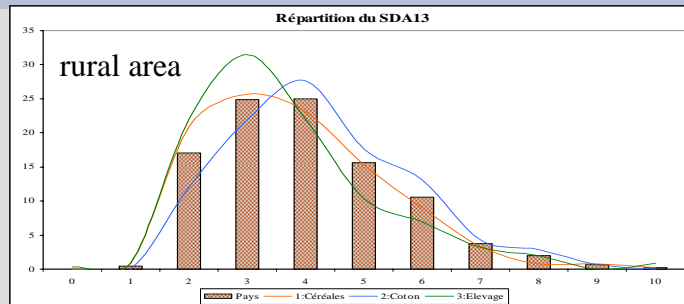
5/15

III. Results : IDDS and HFIAS category

rural area

sécurité alimentaire — insécurité faible — insécurité moyenne — insécurité forte

FANTA — CatIAM Burkina

mean IDDS 14

urban area

food security | light food insecurity | moderate food insecurity | severe food insecurity
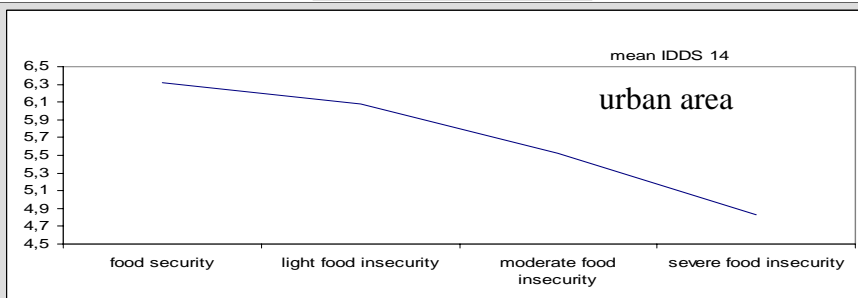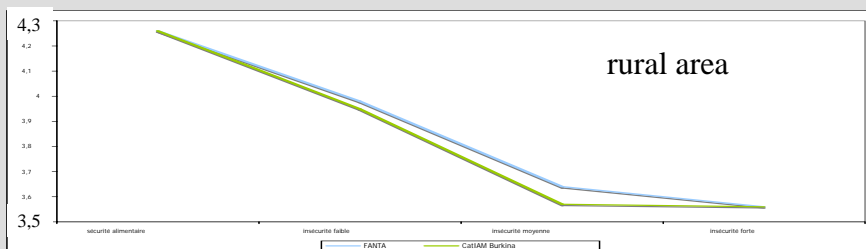
6/15

III. Results : IDDS and economic level

IDDS 14   urban area

6,5
6
5,5
5
4,5

low economic level   medium economic level   high economic level

III. Results : IDDS and BMI

rural area

21
20,8
20,6
20,4
20,2
20
19,8
19,6

Diversité faible   Diversité moyenne   Diversité forte

Total   Céréales   Coton   Elevage
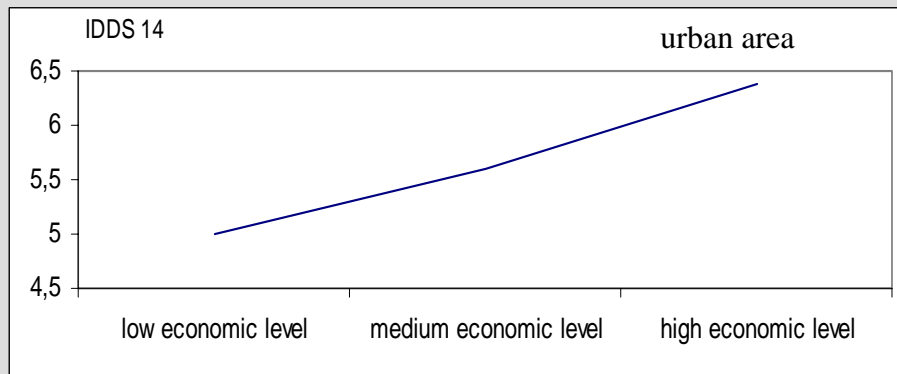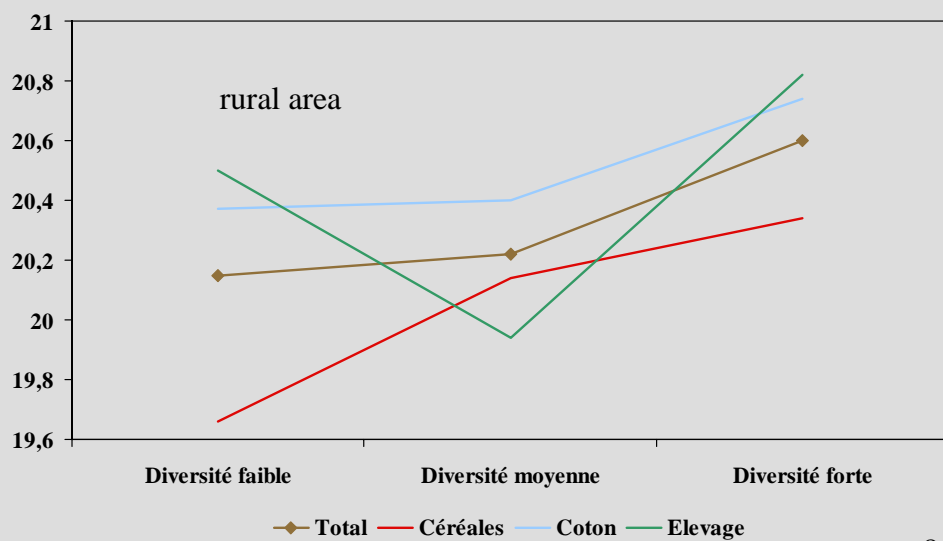
III. Results : special days

- Special days : fest and market (rural area)

Variable	Modality	Estimation	probability
Constant (number of groups)		3,86	
Consumption at market	yes	1,31	$p < 0,0001$
	no	0	
Fest day	yes	0,26	$p = 0,148$
	no	0	

- No problem with market days in urban areas

9/15

III. Results : comparison 9 vs 14 food groups (rural CNS)

* cereals + roots   * fish+meat+liver
* vit. A fruits + vit.A vegetables + leafy vegetables

Description	N	mean	SD	min - max
IDDS 14 (FAO)	1156	4,21	1,39	0 – 10
IDDS 9	1156	4,07	1,59	0 - 9

Differences in number of food groups	0	1	2	3
Number of HH (%)	1020 (88,1 %)	115 (9,9 %)	20 (1,7 %)	4 (0,3 %)

No major difference except for the Senoufo ethnic group who eat cereals
AND roots on a same day (others : cereals OR roots, mainly cereals)

10/15

IV. Strengths & limitations (1/4)

- Field aspects : limited duration of survey (10-20 min), easy for the surveyor (max. 1 day of formation), easy, acceptable & understandable for the surveyee (no problem of comprehension)

- Analytical aspects : very quick data entry (2 min), easy computation (1/2 day of work), easy interpretation

- Strong relationships with HFIAS and socioeconomic characteristics

IV. Strengths & limitations (2/4)

- *J.'s first questionnaires => most of them had only 2 or 3 food groups ticked, and this was not conform to the foods cited in the compulsory table… and not well described !*

- Possible errors due to the surveyor

➔ how to conduct the interview must be well standardized (with confirmation of the « no » for non eaten foods) & local recipes must be well known !!

➔ Strong supervision, systematic review of questionnaires, explanation of recipes…

- *J. received « basic recipes » lessons & his way to check non eaten foods changed.*

IV. Strengths & limitations (3/4)

1. NCS: overconsumption of « other fruits » in one strata (cereals) => nearly 40% vs less than 15%. « tamarind juice » added in « tô » was counted as a fruit product by one team…

2. Ouagadougou 2005: very high consumption of « nuts and seeds ». Soumbala (local condiment) was counted in that group

- What should be counted ? minimal amount of food ?
➔ do not count « condiments », separate items in case of doubt, standardisation of teams

1. Tamarind juice : not possible to correct. Group excluded from the analysis (and the DDS14 became DDS13)

2. Soumbala : details were available. corrected

13/15

IV. Strengths & limitations (4/4)

During a presentation of the tool, one local responsible involved in nutrition analysis clearly said he did not have confidence in it : « We will not consider this tool, it is not precise enough »

- Diffusion of results => sometimes considered as a too simple indicator !!!

➔ diffusion of successful experiences & discussions during the workshop

14/15

V. Recommandations

- Permanent add-in to the questionnaire : table at the begining ➜ « compulsory draft »

- When HFIAS is administered along with IDDS to the same person: start with IDDS

- Local adaptation : pre-identify foods that may be difficult to class in order to separate specific question + preliminary survey (for practice AND analysis)

- During the formation => identify people that do not cook !! ➜ « cooking methods & recipes » formation !!

15/15

Many thanks for your attention…

Food Consumption Methodologies and Indicators

INCAP Experiences

Odilia I. Bermudez, Tufts University School of Medicine / INCAP

Gabriela Mejicano, INCAP

Rome, April 2008

Contemporary experiences

- **Living Standard Measurement Surveys / Encuestas de Condiciones de Vida (ENCOVI)**
  - **Guatemala: ENCOVI 20000**
  - **Honduras: ENCOVI 2004**

- **IV National Food Consumption Survey of Nicaragua / IV Encuesta Nacional de Consumo Aparente de Nicaragua (ENDECON 2004)**

Methodologies for Data Collection

- **Pre-defined Food Lists**
- **Inventory of foods for family consumption**
  - **Foods purchased or from different sources (e.g. own production, donated, etc)**
- **Food Consumption**
  - **At home**
  - **Away from home**
- **Estimation of food quatities and costs**
  - **Food Expediture Profiles**
  - **Food Intake**
  - **Energy and Nutrient Intakes**

Dietary Assessment of Foods For In-Home Consumption

- **Development of Coding Database for Measuring units**
  - **Conversion of Traditional to Standard Measuring Units**
- **Development of database for Refuse portions**
  - **Edible/non-edible portions**
- **Development of Nutrient Databases**
  - **Specific for each Survey Food List**

Nutrient Analysis

- **Energy and Nutrient Adequacy**
- **Nutrient Recommendations for the Central American Population (INCAP, 1994)**

- **Categories for Energy and Nutrient Sufficiency**
  - **Critical: <70%**
  - **Deficient: 70 – 89%**
  - **Sufficient: 90 – 149%**
  - **Excesive: ≥150% (E) / ≥200% (Nutr)**

FOOD PATTERNS AND NUTRIENT INTAKES

Food Cost Structure is Inadequate

Some vulnerable groups dedicate high proportions of their food budget to buy a limited number of food products.

Food Expenditure, by poverty level in Guatemala
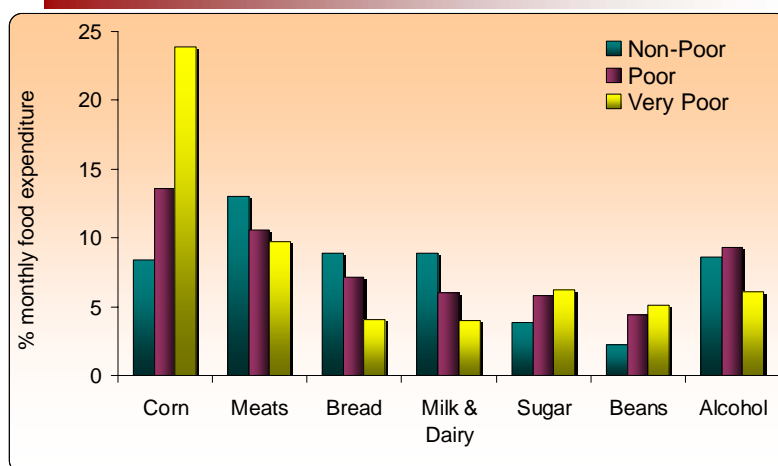
Data: Guatemala, ENCOVI 2000

Food Expenditure in Nicaragua, by SES
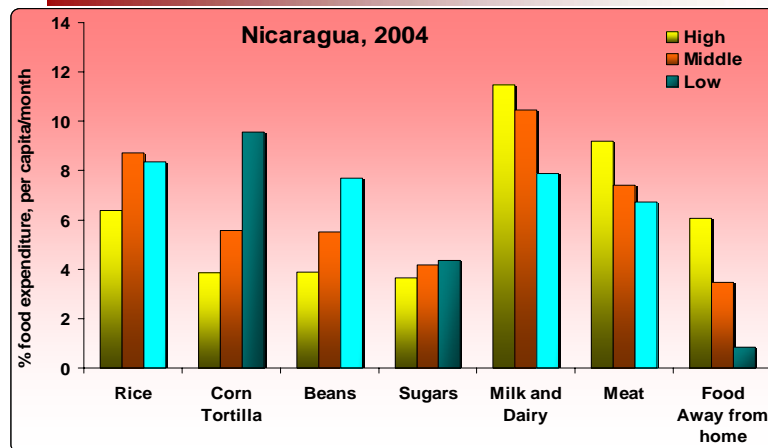
Data: Nicaragua, ENDECON 2004

Food consumption of a limited number of Foods

- Limited number of foods in diets of some vulnerable groups
  - Low dietary diversity
  - Poor nutrient quality
  - High energy density
- Risk factor for malnutrition and food and nutrition insecurity

Energy Distribution in Guatemala

Energy Distribution in Honduras

Energy Distribution in Nicaragua

Energy Contribution (%) from Corn

Data: Guatemala, ENCOVI 2000
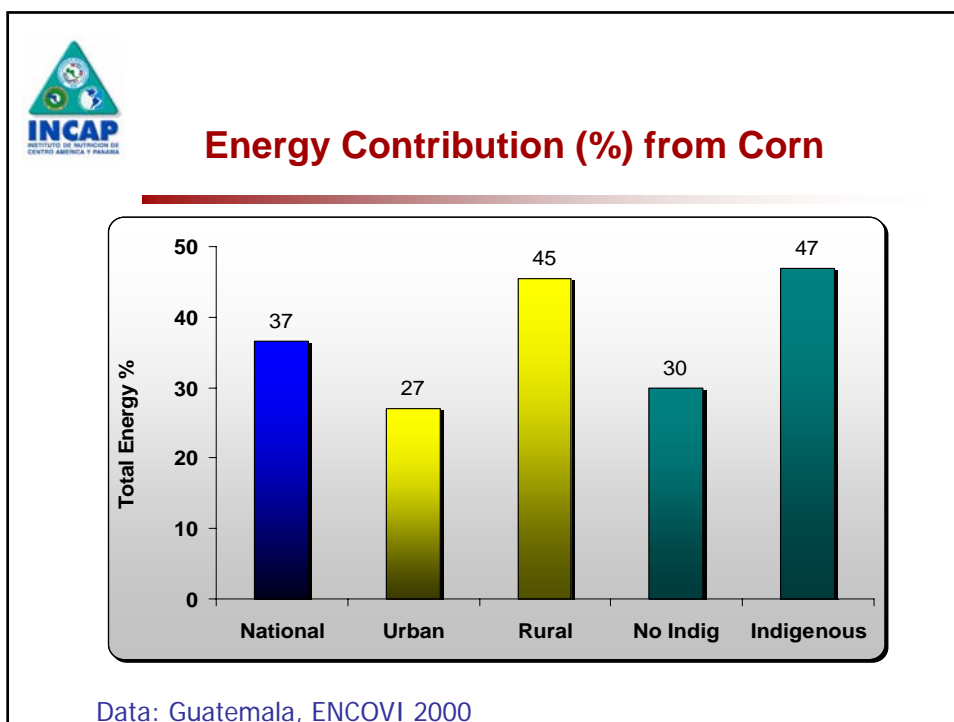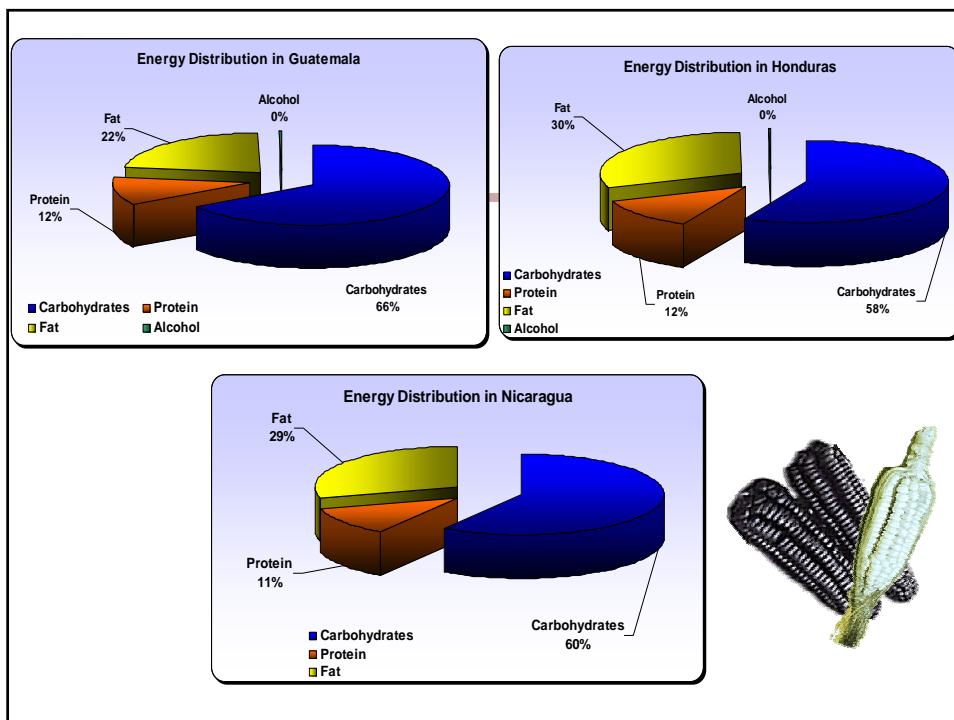
Energy Contribution (%) from Foods, Guatemala
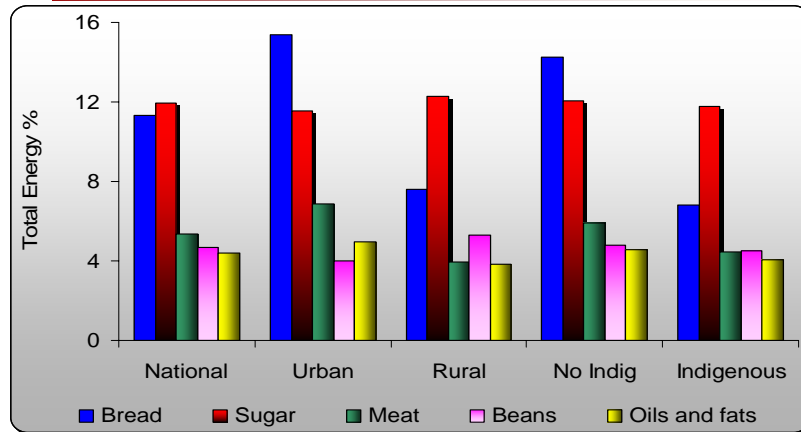
Data: Guatemala, ENCOVI 2000

Contribution (%) of Animal Products to Proteins Intake, Guatemala
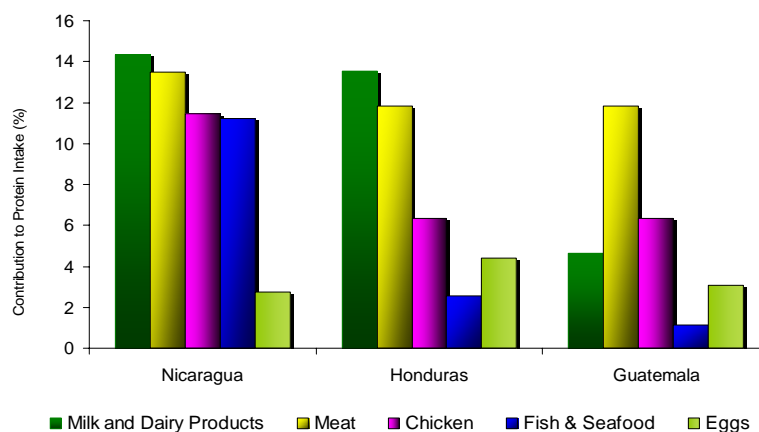
Data: ENCOVI from Guatemala, 2000 & Honduras 2004; and from National Food Survey in Nicaragua, 2004

High sugar consumption

- Mainly refined white sugar fortified with vitamin A
- Low intra-household consumption of carbonated beverages and sweet drinks
- High intake of sugars is associated with
  - B-vitamin deficiencies
  - Obesity and chronic diseases
  - Poor dental health in children

Percent contribution of sugars and sweet drinks to energy intake
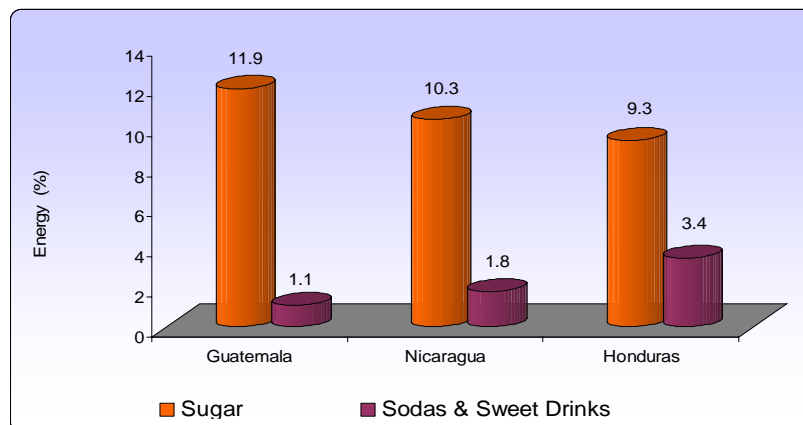
Bar chart — Energy (%):
- Guatemala: Sugar 11.9, Sodas & Sweet Drinks 1.1
- Nicaragua: Sugar 10.3, Sodas & Sweet Drinks 1.8
- Honduras: Sugar 9.3, Sodas & Sweet Drinks 3.4

Data: ENCOVI from Guatemala, 2000 & Honduras 2004; and from National Food Survey in Nicaragua, 2004

Adequacy and Sufficiency in Vitamin A Intake in Nicaragua

AREA	RNI (%)	Levels of Sufficiency of Vitamin A (%)			
		Critical	Deficient	Sufficient	Excessive
National	300	3	2	27	69
Urban	315	2	2	24	73
Rural	285	4	2	34	60
SES					
High	329	1	1	17	82
Middle	294	2	2	27	69
Low	288	5	3	37	55

Source: ENDECON 2004

Corn contribution to Iron and Zinc Intakes

Iron	GUA	HON	NIC
Corn	39	27	10
Other cereals	15	9	27
Bread	10	7	8
Beans	10	14	17

Zinc	GUA	HON	NIC
Corn	41	26	9
Meats	15	14	22
Beans	10	16	17
Milk & Dairy	4	10	12

Poverty is associated with diets with low diversity and high rates of underweight and stunting in children

	GUAT		HOND		NIC	
	Non-Poor	Very Poor	Non-Poor	Very Poor	High SES	Low SES
% Energy from Foods						
Corn (%E)	25	**60**	13	**25**	9	**19**
Sugar (%E)	12	11	7	10	13	13
Beans (%E)	4	6	5	8	7	13
Rice (%E)	3	2	6	7	16	18
Nutr Status in Children <5y						
Stunting (H/A)	32	**69**	12	**38**	11	**43**
Underweight (W/A)	8	**31**	4	**15**	2	**12**

COMMENTS

Vulnerability of Central Americans

- Some Central American population groups people have lived at a subsistence level, just surviving for a long time

- These people are so vulnerable you just need a little wind or rain to push them over the edge

Trends in Food Energy Availability

Central America

Food Energy, Kcal/pcap/day

Energy Needs, kcal/pcap/day

Mitch

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003
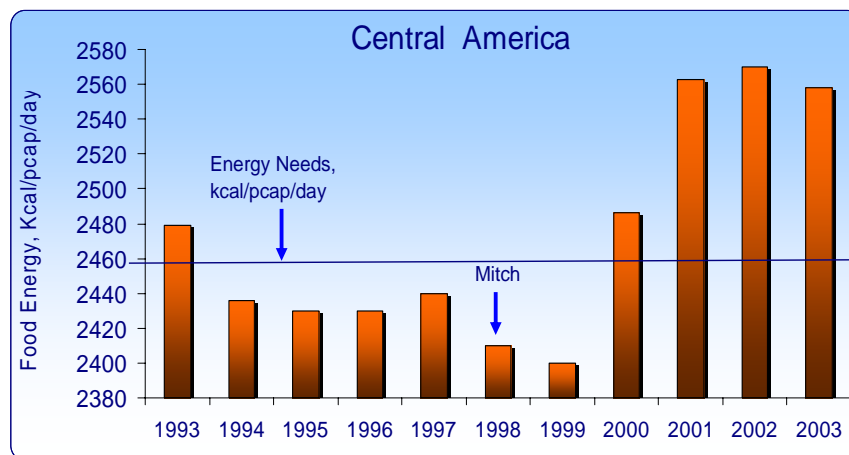
Trends in Food Energy Availability in Central American Countries
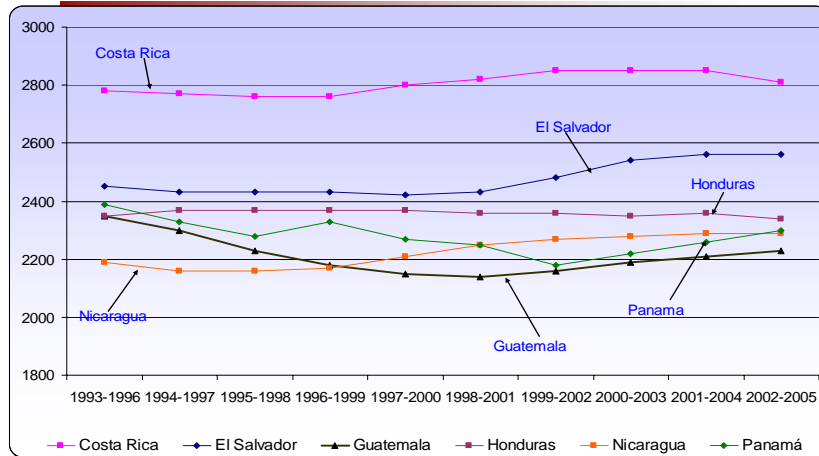
Data from INCAP-Information System from: http://www.sica.int/sirsan/

THANK YOU!

MUCHAS GRACIAS ! !

Comparative Analysis of HDDS and FCS

Analysis from seven countries

Based on manuscript prepared by Andrea Berardo "Meta Analysis of Food Consumption Indicators" and manuscript prepared jointly by FAO/WFP "Qualitative measurements of food consumption: similarities and differences between HDDS and FCS"

Outline

- Overview of methods and datasets used
- Comparison of mean HDDS and FCS at national level
- Comparison of mean scores at sub-national level
- Performance of cut-offs at national and sub-national level
- Conclusions

Comparison of WFP and FAO food groups

WFP		FAO		
Food group	Weight	As in questionnaire	Re-aggregated	Weight
Cereals and Tubers	2	Cereals	Cereals	1
		White roots and tubers	White roots and tubers	1
Meat and Fish	4	Organ Meat	Meat	
		Flesh Meat		1
		Fish	Fish	1
		Eggs	Eggs	1
Milk	4	Milk and dairy	Milk and dairy	1
Oil/fats	0.5	Oils and fat	Oils and fat	1
Fruit	1	Vit. A rich Fruits	Fruits	
		Other Fruits		1
Vegetables	1	Vit. A rich Vegetables and Tubers	Vegetables	
		Dark Green Leafy Vegetables		
		Other Vegetables		1
Pulses	3	Pulses, legumes and nuts	Pulses, legumes and nuts	1
Sugar	0.5	Sweets	Sweets	1
Condiments (not counted in FCS)	0	Spices, condiments and beverages	Spices, condiments and beverages	1
8		16	12	

What each method and indicator tries to measure

☐ The philosophy behind each methods is slightly different although the scores themselves (HDDS and FCS) are both ultimately trying to measure hh food access as one proxy indicator of food security

- The FC method looks at consumption from a food security perspective, particularly focussing on those with very poor consumption. FCS of </= 21 is meant to represent very poor food consumption
- The HDD method tries to consider consumption from a food access perspective while including some additional information on diet quality (micronutrient rich food groups can be analyzed separately from the HDDS)
  - ☐ No uniform cut-point had been established for HDDS

Data sets for comparative analysis

- El Barde, Somalia 2006 (FSAU Nutrition Assessment)

- Lao PDR, 2006 (only rural hh)

- Lira and IDP camps in Gulu, Pader, Kitgum, Apac&Oyamin and Amuria&Katakwithe
  North Uganda 2007 (Emergency FS Assessment, including camps)

- Niger, 7 rural regions 2005 (Emergency Food Security Assessment)

- Tambacounda, Senegal 2007 (Comprehensive FS and Vulnerability Assessment)

- Burkina Faso 2007 – sample designed to be representative at regional level

- Sekhukhune, South Africa 2006 (Livelihood survey)

Data set and methodological implications

- None of the seven studies in the analysis used an open recall, all were list based
- For some studies the HDDS had to be constructed from 9 (Niger) or 11 (Uganda, Senegal and South Africa and Somalia) food groups instead of 12
- The data suggests there may be some under estimation for the seven day recall as compared to one day recall
- The variable weights used for food groups in FCS combined with the frequency/week of consumption exponentiate differences between the two scores
  - HDDS of 3 could represent consumption of cereals, oil and vegetable or cereals, meat and milk. The FCS for these two diet patterns will be very different and each additional day of consumption during the week will compound the difference

Descriptive statistics

	Laos	Somalia	N. Uganda	Niger	Senegal	Burkina Faso
Mean FCS	50	44	36	48	57	45
(sd)	14.3	17.8	12.2	20.5	21.3	16.4
Mean HDDS	5.0	4.1	3.3	3.8	3.6	4.6
(sd)	2	1.4	1.4	1.6	1.5	1.3
N	3926	430	1956	974	336	3640

Comparisons of Mean Scores at Country level

- As a general rule a mean FCS was 10 times HDDS (HDDS 4.1, FCS 43)
- Some countries did not follow this general rule (Niger, Senegal, South Africa)
  - Senegal and S. Africa showed most divergence between the scores
- Correlation co-efficients between the two scores were high (.5-.76) explaining 30-60 percent of variability
- Both HDDS and FCS were also correlated with other FS indicators

Comparisons at sub-national level

- The geographic regions with the best and worst means were generally the same for both indicators
- Those sub-national areas with neither the best or worst means were often ranked differently

Mean FCS and HDDS by Region in Niger

Relationship between mean FCS and mean HDDS by region in Niger
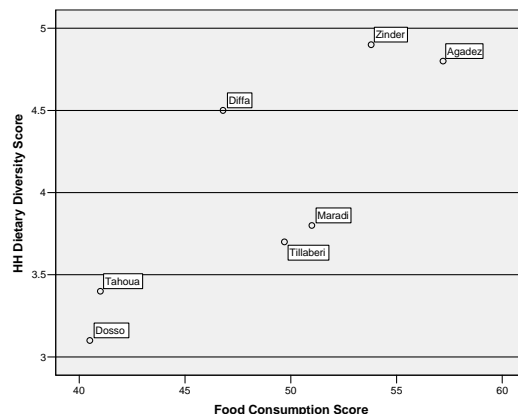
Diffa has a high HDDS compared to FCS, while the HDDS is lower in Maradi and Tillaberi as compared to FCS.

Analysis of days/week of consumption * FG weights shows milk consumption as the largest driving factor of higher FCS among the three areas, with lower average consumption of oil and sugar being an important factor in lowering HDDS in Maradi and Tillaberi

Thresholds to determine prevalence of food insecurity

☐ Neither score is ever used to target need at individual household level

☐ In these data sets, it was not possible to find a comparable cut-point which gave similar prevalences of "poor" consumption

  ▪ The potential range of HDDS (0-12) is smaller than FCS (0-112). For HDDS, cut points have to be set at the level of a food group (2 or fewer food groups or 3 or fewer food groups). The differences in magnitude of the two scores makes it more difficult to arrive at a standard cut-point for each score that provides a consistent meaning with the other score across different country settings

Comparison of cut offs- National level
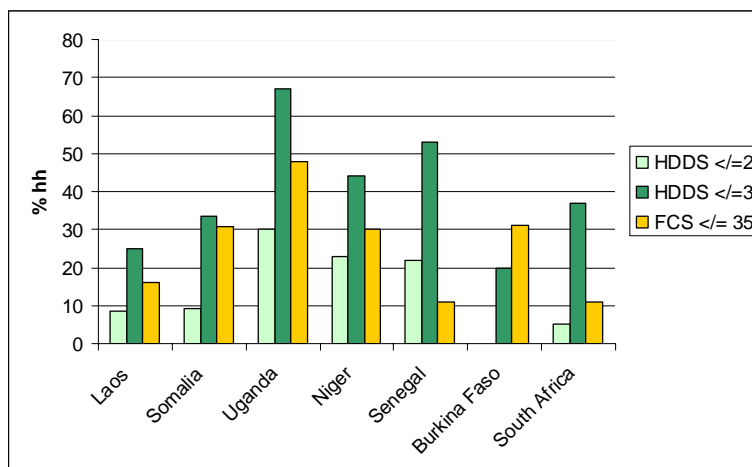
Comparison of cut offs at provincial level in Laos (IPC example)
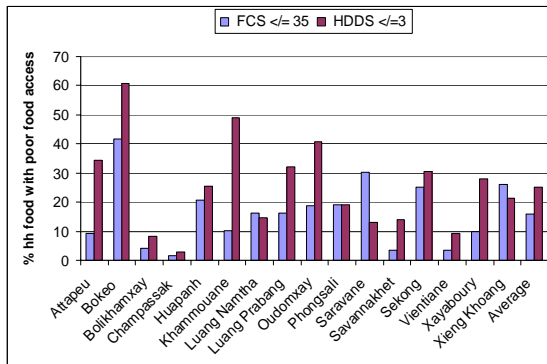
> 15%: HDDS 10 FCS 10 (8 the same, 4 different)

>/=20 %: HDDS 9 FCS 5 (4 the same, 6 different)

>/= 30%: HDDS 6 FCS 2 (1 the same, 6 different)

>/= 40%: HDDS 3 FCS 1 (1 the same, 2 different)

Comparison of scores and cut offs at regional level Burkina Faso

Mean FCS and mean HDDS by region
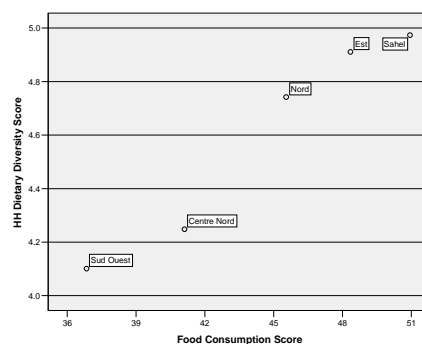
Prevalence of FCS </=35 and HDDS </= 2 or 3
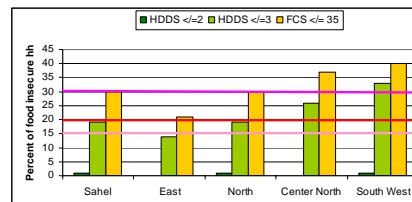
Chosen prevalence makes a large difference
- 15% of hh below cut-point: 4 HDDS and 5 FCS
- 20% of hh below cut-point 2 HDDS and 5 FCS
- >30% of hh below cut-point 1 HDDS and 2 FCS

Conclusions- Similarities

- The HDDS and the FCS are reasonably well-correlated with each other and with other key FS proxies. (r of .5-.76)
- Rankings at sub-national level correspond for the lowest and highest scores
- The FCS data collection tool can be easily modified to better allow for collection of food groups needed to create the HDDS

Conclusions- important differences

- Not possible to find equivalence of the two scores:
  - HDDS of 3 corresponded to FCS of 27-51 across the different countries
    - This is most likely due to variable food group weights used in FCS
  - Smaller continuous scale of HDDS limits flexibility for a cut-point

Thank you

Comparison of the methodology used to create the FCS and HDDS

	FCS	HDDS
Recall method and time period	List based recall of household consumption and frequency of consumption over the past 7 days	Qualitative 'free' recall of all food/drink consumed by any household member[1] during the past 24 hours
Number of food groups used to create the score	8	12
Number of food groups in the questionnaire	Varies by country context	16
Weighting of food groups	Each food group consumed receives a weight from 0.5-4	Each food group consumed has a value (weight) of 1
Typical cut-points	≤ 21 = poor 21.5-35 = borderline >35 = Acceptable	Population distribution of scores used to form terciles (or quartiles) for analysis of groups
Out of home food consumption		Is not counted in the HDDS

Sub-national comparisons

FCS and HDDS Pearson Correlation	Correlation co-efficient (R)	Sig. (2-tailed)	R²
Lao	.54	.00	0.29
El Barde, Somalia	.61	.00	0.37
North Uganda	.53	.00	0.28
Niger	.76	.00	0.58
Tambacounda, Senegal	.75	.00	0.56
Burkina Faso	.73	.00	0.53

Linear equation results

	Laos	Somalia	N. Uganda	Niger	Senegal	Burkina Faso
FCS (x)	HDDS (y)	HDDS (y)	HDDS (y)	HDDS (y)	HDDS (y)	HDDS (y)
21	2.7	3.1	2.3	2.3	1.7	3.2
35	4.0	4.0	3.2	3.1	2.4	4.0
45	4.6	4.2	3.8	3.7	2.5	4.6
50	5.2	4.4	4.1	4.0	3.2	4.9
HDDS (x)	FCS (y)	FCS (y)	FCS (y)	FCS (y)	FCS (y)	FCS (y)
2			29.8	28.8	40.5	20.8
3			34.6	39.0	50.8	29.9
4			39.4	49.2	61.2	39.0
5			44.2	59.4	71.6	48.1

Extremes of linear equation results

	Lowest FCS	Highest FCS	
HDDS = 3	27 (South Africa)	51 (Senegal)	
HDDS = 4	32 (South Africa)	61 (Senegal)	
	Lowest HDDS	Highest HDDS	
FCS = 35	2.42 (Senegal)	5.85 (South Africa)	
FCS = 48 or 49	3.17 (Senegal)	6.8 (South Africa)	

Consistent by dataset but not across datasets:

Highest mean HDDS in South Africa 6.6 (2.4)

Highest mean FCS in Senegal 57 (21)

Dietary explanations ?

❑ No information in paper

Mean FCS by HDDS
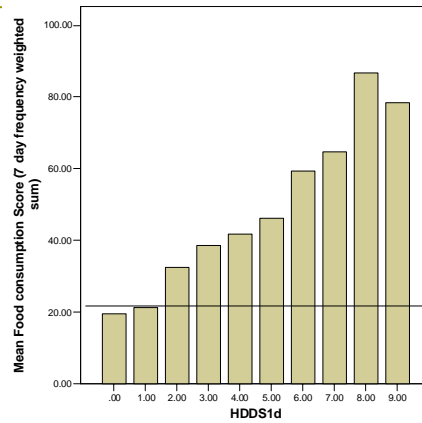
SOMALIA

One day and weekly dietary patterns in Burkina Faso
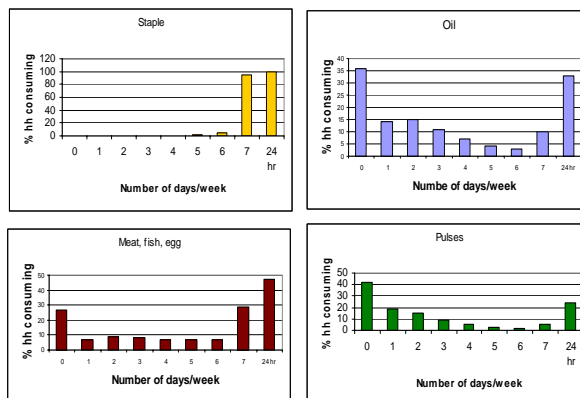
High DDS but low FCS...WHY?

Consumption of cereals and vegetables universal

For 24 hr score fish then oil, sugar or pulses for average HDDS of

One day and weekly dietary patterns in Burkina Faso
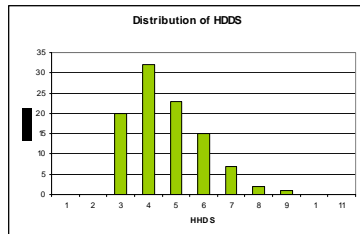
Distribution of HDDS

High DDS but low FCS...WHY?

Consumption of cereals and vegetables universal

For 24 hr score fish then oil, sugar or pulses for average HDDS of

4.6 (1.3)

Recommendations

- There are some areas where it is not clear which indicator should be used.
    - situations such as joint assessments, IPC indicators, food security assessments done with other partners.
    - In such cases, if a decision cannot be made which data to collect, both types of data could be collected in the same module without considerable extra effort.

Next steps…

- Further analysis on existing datasets to compare and contrast these scores
    - Joint publication

- Guidelines on how to harmonize data collection tool

    - Ensure that all food groups needed to calculate the HDDS are disaggregated during data collection

WFP Food Consumption Score and Calorie Consumption: Preliminary Results from Burundi and Haiti

Authors:
Doris Wiesmann, Lucy Bassett, Todd Benson, John Hoddinott

Presenter: Mary Arimond
International Food Policy Research Institute

Measuring Food Consumption/
Harmonizing Methodologies: Interagency Workshop
April 9-10, 2008

Context

Simple food security indicators needed for assessment, targeting, planning, monitoring

Indicators reflect different dimensions of food security: availability of, access to, "sufficient, safe & nutritious food"; experience of food insecurity

No single indicator can meet all needs or capture all dimensions

Dietary diversity & food frequency

DD – number of foods/groups consumed over reference period (by hh or indiv)

FF – number of days/times a food/group is consumed over a reference period

Various indicators incorporate measures of DD and/or FF, aim to proxy for calorie consumption and/or diet quality

Caveat: best indicator for quantity (calories) is not likely to be same as best indicator for diet quality

WFP-IFPRI collaboration

2006 – reviewed relationships between various proxy indicators and HH consumption (kcals)

Key results (Wiesmann et al., 2006):

Most proxies (DD, FF, "experiential") correlated with HH kcal consumption

FF - correlations and predictive power somewhat higher than simple DD counts

But, predictive power of each single indicator was low; combinations were better

Limitations: Secondary data analysis, could not assess WFP consumption score as currently operationalized; could not explore cut-offs for same

2007-2008: Analysis using WFP Food Consumption Score

Weighted sum of (truncated) food frequency scores for eight major food groups; reference period is one week; household-level recall

Reflects "snapshot" in household (vs predicting future)

Weighting aims to further incorporate element of diet quality (nutrient density) as well as calories

However validation exercise compared FCS to HH calorie consumption only, not diet quality

WFP/IFPRI 3-country study: Objectives

Test the relationship of FCS to HH calorie consumption

Assess existing cut-offs that create Food Consumption Groups ("poor" "borderline" "acceptable")

Consider improvements to weights and cut-offs used for the FCS

WFP/IFPRI 3-country study: Sites & Methods

Burundi & Haiti: FSMS + IFPRI household consumption module, both w/ recall period of 1 week

Sri Lanka: IFPRI study in tsunami-affected area; food frequency module based on WFP 2005 guidance; IFPRI consumption module as above. Analysis not yet complete

Summary of results

Burundi & Haiti: FCS correlated with calorie consumption; strength of association moderate

In 1st analysis, no correlation in Sri Lanka; may relate to diet pattern with high diversity/small qty

FCS cut-offs for "poor" and "borderline" identified low proportion of HH with calorie deficits

Relationship between FCS and calorie consumption varied by site

Results for truncated and weighted indicators similar to results for simple sum of frequencies

Burundi: Association between FCS and per capita calorie consumption
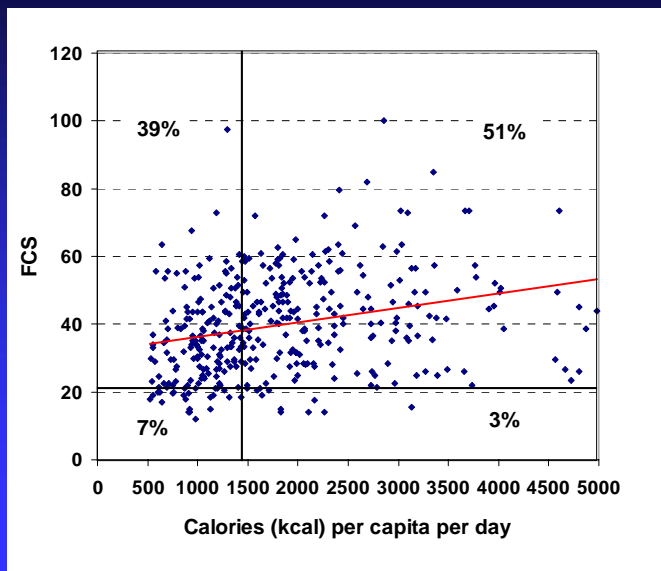
Haiti: Association between FCS and per capita calorie consumption
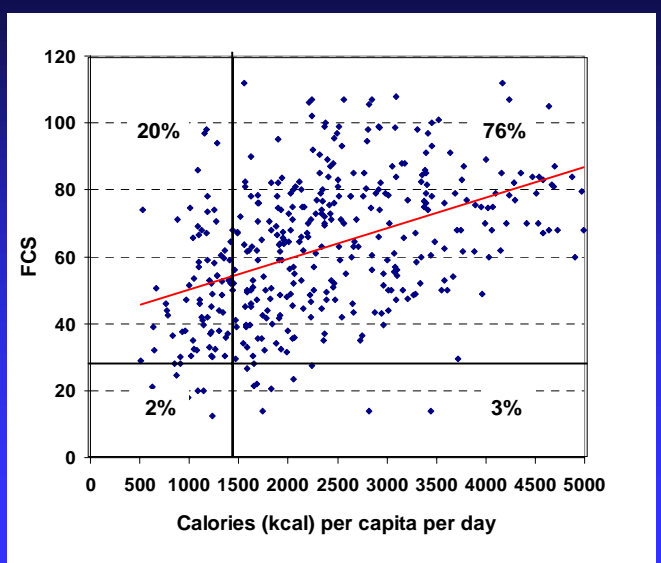
Burundi: Estimates of food insecurity

WFP/IFPRI survey, rural sentinel sites, 2007

Other sources, national

FCS   Calorie consumption

Est from FAO FBS 2001-03   HES, 1998

	% of households (FCS)	% of households (Calorie)	% of population (Calorie)		% of population (FAO FBS)	% of population (HES)
Acceptable	58	30	25		16	21
Borderline	32	24	24		44	25
Poor	10	46	51		40	54

Legend:
- Acceptable (green)
- Borderline (yellow)
- Poor (red)
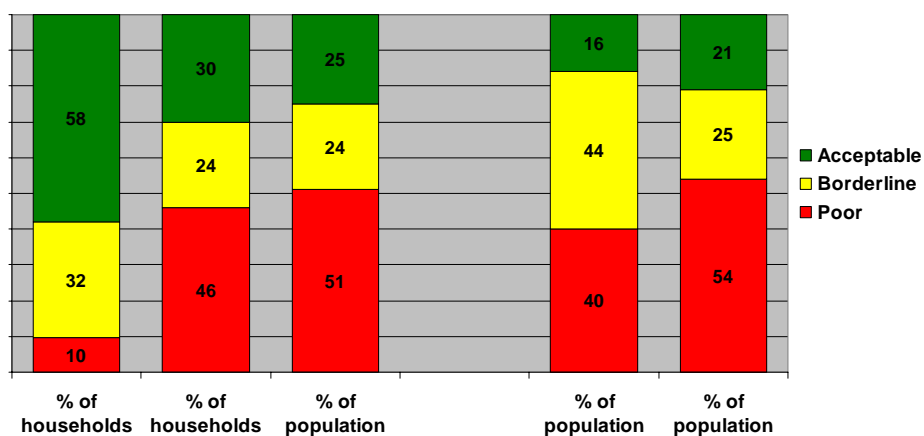
Haiti: Estimates of food insecurity

WFP/IFPRI survey, sentinel sites in the North and North-East, 2008
FCS   Calorie consumption

Other source, Est. from FAO FBS, 2001-03

	% of households (FCS)	% of households (Calorie)	% of population (Calorie)		% of population (FAO FBS)
Acceptable	82	53	47		44
Borderline	14	25	27		28
Poor	5	22	26		15

Legend:
- Acceptable (green)
- Borderline (yellow)
- Poor (red)
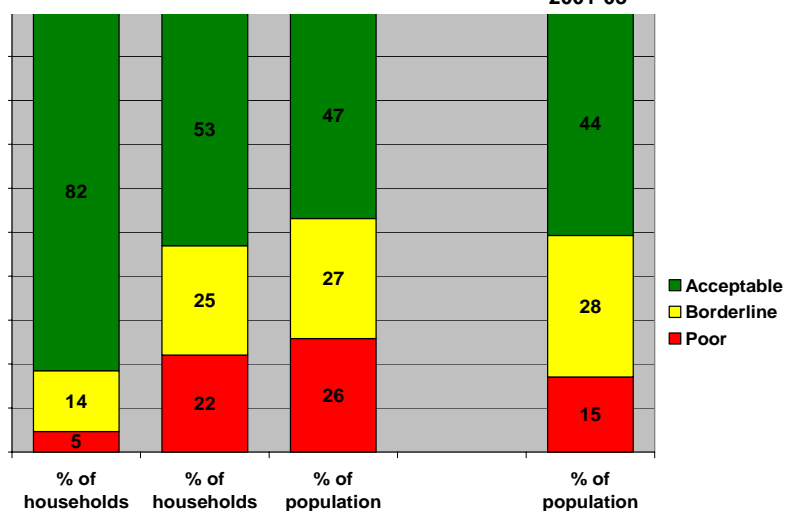
Is meaning of FCS cut-offs consistent across sites?

If aim is to identify same prevalence of very low calorie consumption (<1470 per cap) as found by "gold standard":

Cut-off for Burundi at FCS ~ 35

Cut-off for Haiti at FCS ~ 45

Preliminary results showed even higher cut-off for Sri Lanka; problem of small quantities

Added value of truncating frequencies and weighting?

Results for truncated and weighted indicators similar to results for simple sum of frequencies

Correlations and predictive power were consistently slightly higher for non-truncated, non-weighted scores

Conclusions
WFP/IFPRI study

FCS correlates with HH calorie consumption; correlations are moderate

Current cut-offs underestimate prevalence of low calorie consumption

Predictive power of FCS is similar to, but marginally lower than untruncated, unweighted score

Results do not support cut-offs for global use

More work may be needed before use in So. Asia

For discussion
FCS *and* similar indicators

Strength of associations – how much weight can/should these indicators bear in decision-making?

Relative indicators ("yardsticks") vs. absolute

Global vs. national cut-offs

Do we have all the information we need about combinations of indicators?

Diet quantity vs. diet quality

Should we combine indicators of current status with indicators that predict future? If so, how?

**Comparing indicators used to
assess household food consumption:**

Evidence from Mozambique

Diego Rose
School of Public Health & Tropical Medicine
Tulane University
New Orleans, Louisiana, USA

WFP/FAO Interagency Workshop on Measures of Food Consumption, April 9, 2008, Rome

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Introduction

- Food counts (items or groups) as indicators of consumption
  - Hatløy et al, '98; Hoddinott & Yohannes '02; Arimond & Ruel '04

- Weighted food counts
  - CSO/Zambia '98; Rose '00; Rose et al '02

Nampula/Cabo Delgado (NCD) Study

- "Smallholder cash cropping, food cropping, and food security in northern Mozambique"
  – MSU, Ministry of Agriculture collaboration
  – 3-district area of Nampula and Cabo Delgado
  – 388 households in 16 villages
- Research-grade food consumption module
  – 24-hour recall of household consumption
    - Persons in attendance at each meal
    - Quantities of all foods prepared and eaten
  – 2 interviews per round on non-consecutive days
  – 3 rounds – May '95, Sep '95, Jan '96

Mozambique MOH diet assessment tool
Food group weights

Weights	Food items in each food group
1	Vegetables, fruits, juices, other beverages (excluding water, coffee, tea), oils, sugars, butter, jam, mayonnaise, tomato sauce, condensed milk
2	Cereals, tubers, bread, spaghetti, cookies, cakes
3	Beans, ground nuts, coconuts, other nuts
4	Meats, fresh and dried fish, shellfish, eggs, fluid milk, cheese, yogurt, milk and egg custard

Classification of dietary intake
in Mozambique diet assessment tool

Sum of points	Classification
0-11	Very low
12-19	Low
20 +	Acceptable

Application to NCD household data

	Diet Quality Classification		
	Very low (0-11 points) n = 122	**Low (12-19 points) n = 402**	**Acceptable ($\geq$ 20 points) n = 616**
	(Mean intake as a % of recommendation)		
Energy	50.1	78.4	105.5
Protein	56.0	105.8	159.6
Vitamin A	37.4	29.8	28.3
Iron	70.7	98.2	136.3

Introduction

- Food counts (items or groups) as indicators of consumption
  - Hatløy et al, '98; Hoddinott & Yohannes '02; Arimond & Ruel '04

- Weighted food counts
  - CSO/Zambia '98; Rose '00; Rose et al '02

- Regression-adjusted food counts
  - Rose and Tshirley '00; Rose et al '03

Apply prediction model to proxy data

to get national estimates of consumption

Proxy data collected nationally → **Dietary adequacy prediction model** → **Predicted household diet adequacy nationally**
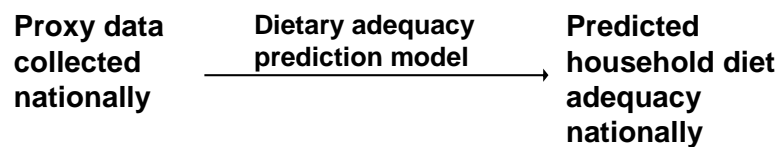
Coefficients from the "dietary adequacy" prediction model

Food group	Energy	Protein	Vitamin A
Grains	.3166	.2889	.0064
Beans	.2975	.6115	.0895
Tubers	.3944	-.0073	-.0141
Nuts/seeds	.2401	.3237	-.0328
Animal foods	.1224	.2091	.0843
Vit A fr & veg	-.0499	-.0349	.4458
…	…	…	…
F-Statistic	118.68	174.16	124.14
Adjusted R^2	0.554	0.646	0.565

Percent of low intakes in NCD sample compared with predicted
Harvest season

Nutrient	Measured	Predicted
Energy	40.1	38.0
Protein	10.3	9.2
Vitamin A	93.4	92.3
Iron	39.0	31.7 *
MDQI	53.3	45.1

* predicted value significantly different than measured, α = 0.05

Objectives

- Compare performance of several indicators within common framework and using same dataset

- Address ability of indicators to detect intra-country differences

METHODS

Sample and Dataset

- Data from 2004 Mozambique vulnerability analysis survey
  - Analise de Vulnerabilidade Corrente nas Sete Provinicas de Moçambique
- 7 provinces -- 11 sub provinces
- Survey included detailed quantitative 24-hour recall module
- Assessed household energy consumption

Indicators used in comparisons

	Indicator	Meaning
GS	Household energy intake ratio (gold standard)	Household food energy (kcal) eaten in previous 24 h divided by sum of recommended energy allowances for members.
M	Simple count of meals	# meals eaten by household members in previous 24 h.
FG	Simple count of food groups	# food groups (e.g. grains, tubers) eaten by household members in previous 24 h.
FI	Simple count of food items	# individual foods (e.g. maize, potatoes) eaten by household members in previous 24 h.
FG-W	Weighted food group score	Sum of # times per day each of 4 different food groups were eaten multiplied by a "weight" for each food group.
FG-RC	Predicted energy intake ratio	Sum of # times per day each of 9 food groups were eaten times regression coefficients from previously-estimated prediction model. Household size also included.

Performance Criteria

Criteria	Meaning
Simple correlation	Pearson correlation coefficient between indicator and gold standard
Sensitivity	Percent of households with low energy intakes correctly identified
Specificity	Percent of households with acceptable intakes correctly identified
Efficiency	Percent of all households correctly identified
ROC area	Area under Receiver Operator Curve, plot of sensitivity vs specificity at each threshold level of indicator
National prevalence rate comparison	Percentage point difference in prevalence of low intakes between indicator and gold standard
Sub-provincial prevalence rate comparison	Number of prevalence estimates from sub-provinces that were within 10 percentage points of gold standard

RESULTS

Mean energy intake ratio by indicator level
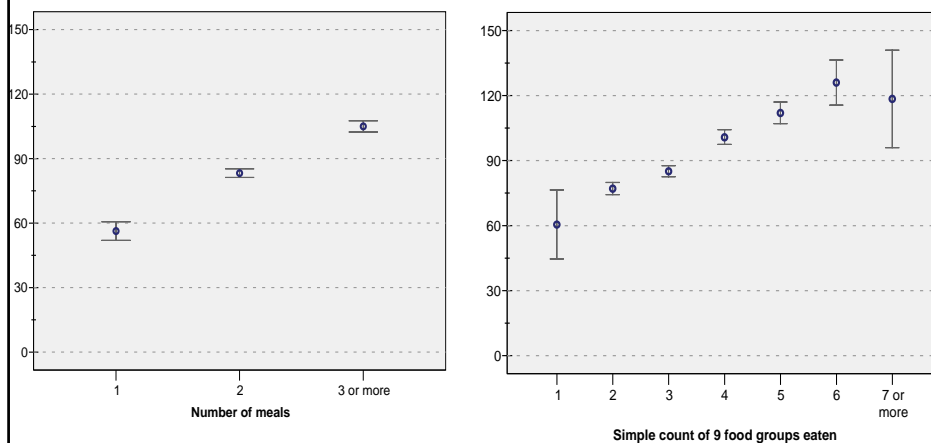
Mean energy intake ratio by indicator level

Mean energy intake ratio by indicator level

Regression on food groups exp * 100 RANGES
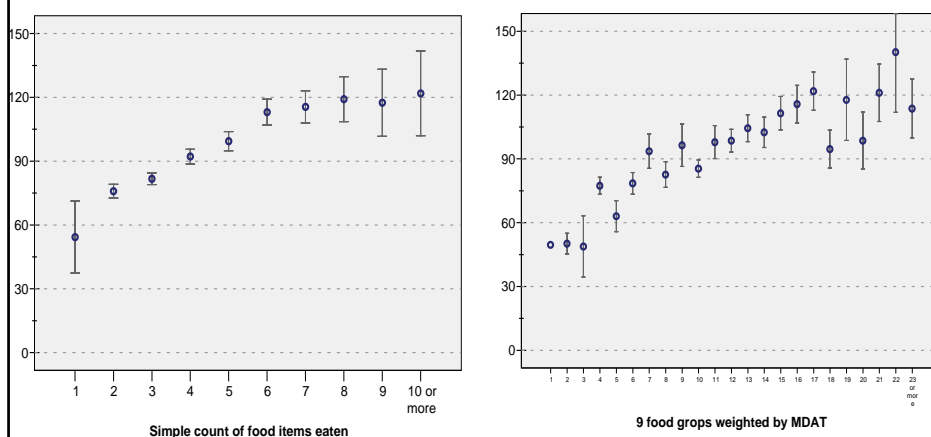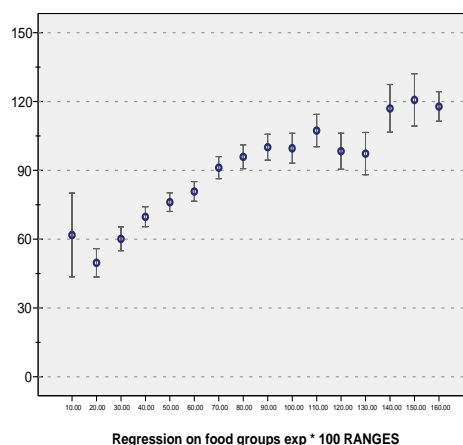
Results of comparisons

	Correlation (r)	Sensitivity (%)	Specificity (%)	Efficiency (%)
M	0.267	70.3	50.0	59.5
FG	0.240	78.2	44.0	59.9
FI	0.243	62.5	58.5	60.3
FG-W	0.267	54.9	69.2	62.6
FG-RC	0.277	64.6	61.3	62.8

Results of comparisons

	ROC area (95% CI)	National prevalence difference (pct pt)	Sub-provinces within 10 pct points of GS (#)
M	0.625 (0.608, 0.641)	-13.0	4
FG	0.633 (0.617, 0.650)	-19.9	3
FI	0.634 (0.617, 0.650)	- 4.9	5
FG-W	0.663 (0.647, 0.679)	4.4	5
FG-RC	0.676 (0.660, 0.692)	- 4.3	6

Summary of results

- Regression-based (FG-RC) indicator best on main criteria
- Weighted food groups (FG-W) 2nd best, followed by food count (FI), food groups (FG), meals (M)
- FG-RC, FG-W indicators use more of information collected in field
- Differences not that great
  - could leave in place current systems
  - new systems could use more sophisticated scoring
- Sub-provincial estimates need improvement

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Need for a common classification system…

A common classification would lead to…….

• Food security and humanitarian interventions being more:
- Needs based
– Strategic
– Timely

• Technical consensus:
• Comparability over space
• Comparability over time
• Transparency through evidence-based analysis
• Accountability
• Clear early warning
• More strategic response

Existing Systems:

✓ Oxfam
✓ Howe and Devereux
✓ MSF
✓ FEWSNET
✓ WFP
✓ ODI
✓ Others…

Ongoing Related Global Initiatives:
• SMART
• Benchmarking
• Health and Nutrition Tracking Service
• IASC
• Sphere Guidelines

The IPC is a tool to……

- enable a composite analytical statement on food security nutrition and humanitarian situations
- for current situation analysis and early warning
- drawing together multiple indicators of human welfare and livelihoods
- for consistent and meaningful analysis.

Key Aspects of Situation Analysis

- Severity (phase classification)
- Geographic coverage
- Magnitude (# people)
- Immediate causes
- Underlying causes
- Identification of general needs
- Current responses
- Criteria for social targeting
- Transitory vs. chronic
- Projected trend / scenarios
- Confidence level of analysis

Components of the IPC include…

- Reference Table
- Analysis Templates
- Cartographic Protocols
- Standardized Population Tables

Developed over the past 3 years, originally by FSAU Somalia, now global partnership for roll out with FAO/WFP/FEWSNET, SCUK, Oxfam, etc………
- Addendum in 2008
- Review of entire manual and all reference outcome in 2008

Table 1: Estimated Rural Population by Region in Humanitarian Emergency (HE) and Acute Food and Livelihood Crisis (AFLC), inclusive of the High Risk Groups.

Affected Regions	UNDP 2005 Total Population[1]	Assessed and Contingency Population in AFLC and HE		
		Acute Food and Livelihood Crisis (AFLC)[2]	Humanitarian Emergency (HE)[3]	Total in AFLC or HE as % of Region population
North[4]				
Awdal	305,455	0	0	0
Bari	387,969	0	0	0
Nugaal	125,010	0	0	0
Sanaag	270,367	0	0	0
Sool	150,277	0	0	0
Togdheer	402,295	0	0	0
Woqooyi Galbeed	700,345	0	0	0
Sub-Total	**2,341,718**	**0**	**0**	**0**
Central				
Galgaduud	330,057	0	0	0
Mudug	350,099	0	0	0
Sub-Total	**680,156**	**0**	**0**	**0**
South				
Bakool	310,627	80,000	0	26
Bay	620,562	10,000	0	2
Gedo	328,378	90,000	110,000	61
Hiraan	329,811	10,000	10,000	6
Lower Juba	385,790	80,000	70,000	63
Middle Juba	238,877	90,000	40,000	34
Lower Shabelle	850,651	0	0	0
Middle Shabelle	514,901	0	0	0
Banadir	901,183	.	.	.
Sub-Total	**4,480,780**	**360,000**	**230,000**	**13**
GRAND TOTAL	**7,502,654**	**360,000**	**230,000**	**8**

Assessed and Contingency **Rural Population** Numbers in AFLC and HE	590,000	8
Current Estimated Conflict Displaced Population	65,000	1
Estimated Number of IDP's[5]	400,000	5
Estimated Total Population in Crisis	1,055,000	14

[1] Source: Population Estimates by Region/District, UNDP Somalia, August 1, 2005. Note this only includes population figures in affected regions. FSAU does not round these population estimates as they are the official estimates provided by UNDP.
[2] Estimated numbers are rounded to the nearest five thousand, based on resident population not considering current or anticipated migration, and are inclusive of population in High Risk of AFLC or HE for purposes of planning.
[3] Dan Gorayo is included within Bari Region following precedent set in population data prior to UNDP/WHO 2005.
[4] Roughly estimated as 30% and 20% of urban population in HE and AFLC areas respectively.
[5] Source: UN-OCHA/UNHCR IDP rounded to 400,000 as an estimate.

In Summary what the IPC is…..

- A tool for summarizing and communicating Situation Analysis, based on common standards, that links complex information to action

- A technical 'forum' for enabling technical consensus

And what it is not………
- A method—it draws from multiple methods

- An information system—it is a complimentary 'add-on'

- Response analysis—this is the next step, which is based on sound situation analysis

Interagency Workshop Report WFP - FAO
Measures of Food Consumption - Harmonizing Methodologies
Rome, 9 - 10 April 2008