

# Measuring Food Consumption: The Foundations

LECTURE 5

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## A quick reminder

- What justifies our interest in collecting **data on food** consumption?
- **Food consumption expenditure** is a key component of any measure of **living standards** (lecture 1), **poverty** (lecture 14), and much more
- There are **additional research objectives**, which are useful to keep in mind when designing the food module of the questionnaire:
  - nutrition and food security
  - consumer price indices
  - informing National Accounts
  - ...

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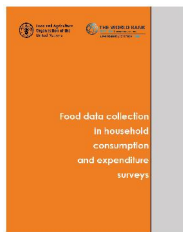
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## Main references for this lecture

most useful also for the next two lectures



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Questionnaire design challenges for food module

- 1. Acquisition vs. consumption
- 2. Recall vs. diary and length of reference period
- 3. List of food items
- 4. Meal participation
- 5. Timing of visits
- 6. Food away from home
- 7. Non-standard measurement units

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1. Acquisition vs. consumption

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Definitions

- **Acquisition**  
coming into possession, taking control of goods
- **Consumption**  
utilizing goods (*i.e.* eating, in the case of food)
- **Mode of acquisition:**
  - purchase
  - own-production
  - in-kind receipt

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## Acquisition vs. consumption

what to do with the chicken?

- All goods that are **consumed** have been **acquired** in some way
- However, acquisition and consumption do not necessarily take place during the same **reference period**
- During a given period, say previous week, three possibilities:
  - a chicken is acquired and eaten ( $A = C$ )
  - a chicken is acquired, but not eaten ( $A > C$ )
  - a chicken is eaten, but has been acquired earlier ( $A < C$ )

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## Why definitions matter

- Acquisition and consumption are measured for **different purposes**:
  - 1) Interest in **consumption** is justified by interest in estimating a number of things: standard of living, calorie intake, etc.
  - 2) Interest in **acquisition** is justified by interest in food security (availability)
  - 3) Interest in acquisition from **purchases** (*i.e.* food expenditure) is justified by CPI weighting, and informing national accounts
- Based on survey objectives, **concept(s)** of interest must be clear, and the **questionnaire** must be unambiguous

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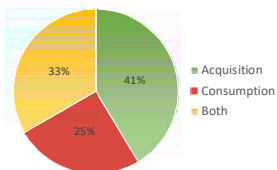
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## Current practices

Smith et al. (2014:)



- Smith et al. (2014) review **100 surveys** from developing countries
- They find that both consumption and acquisition are commonly collected, but **poor questionnaire design** is common
- About 25% of surveys were found to include **poorly worded questions, ambiguity**

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## Approaches to data collection

Conforti et al. (2017: 44)

Typically, data on food are collected in one of three ways:

- A. Acquisition**  
Households report on food they acquired through purchases, own production and in-kind transfers. Actual consumption of the same food is not reported.
- B. Combination of acquisition and consumption**  
Households report on food they acquired through purchases, without specifying the amount of food consumed. Food consumption derived from own-production or received from transfers is reported.
- C. Consumption**  
Households report on food actually consumed, and on whether that same food was purchased, own-produced or received as a transfer.

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## Common questionnaire design issues

Consider the following examples. Comment on each of them by answering these questions:

1. From collected data, could we estimate **food consumption**? Acquisition? Purchase? All of the above?
2. What about **unit values**?
3. Can you see any **flaws** in questionnaire design?

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## \*Rule out (or 'filter') question

example 1

QUESTIONNAIRE: HOUSEHOLD SURVEY

**F** Before the year 2000, did the member of this household (add household name of the respondent) acquire any food items?

**G** How much in total did you acquire/got from purchase of food items during the past 7 days?

**H** How much did the household spend on the same amount of food items during the past 7 days?

**I** How much of the total amount of food items acquired by the household came from own production during the past 7 days?

**J** How much of the total amount of food items acquired by the household came from gifts and other sources during the past 7 days?

**K** How much of the total amount of food items acquired by the household came from the market during the past 7 days?

**L** How much of the total amount of food items acquired by the household came from the street vendors during the past 7 days?

**M** How much of the total amount of food items acquired by the household came from the community center during the past 7 days?

**N** How much of the total amount of food items acquired by the household came from the school during the past 7 days?

**O** How much of the total amount of food items acquired by the household came from the other sources during the past 7 days?

**P** How much of the total amount of food items acquired by the household came from the other sources during the past 7 days?

NO CONSUMPTION RULES OUT ACQUISITION!

Go to the next question

ITEM NAME	QUANTITY	UNIT	QUANTITY	UNIT	NAIBA	QUANTITY	UNIT	QUANTITY	UNIT
...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...

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Rule out (or 'filter') question

example 1

M. DEPENSES EN PRODUITS DE CONSOMMATION COURANTE  
AU COURS DES 15 DERNIERS JOURS

	M11. Avez-vous consommé (Non du produit)?	M12. En avez-vous acheté?	M13. Combien avez-vous payé?	M14. Quelle quantité avez-vous achetée?	M15. En avez-vous récolté et/ou prélevé de vos stocks?	M16. Quelle quantité avez-vous récolté et/ou prélevé?
Produits	1. Oui 2. Non →	1. Oui 2. Non →	Montant (en FBUI)	on unités locales	Code 1. Oui 2. Non →	(en unités locales) Code
1. Produits alimentaires						
1. Hancock						
2. Produits						
2. Produits						

- Did you consume...
- How much did you pay? (value)
- How much did you buy? (quantity)
- Did you harvest or take from stocks?
- How much? (quantity)

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Usual month?

Example 2

MONTHLY CHARACTERISTICS			GIFTS		9.-
5.- In the past 12 months, how many months have you had expenditures on this [ARTICLE] YES → 8	6.- How much have you spent on average per month on this [ARTICLE].	7.- Quantity purchased of this [ARTICLE] on average per month, in the unit [ARTICLE].	8.- What is the total quantity per [ARTICLE] that you have received as gifts over the past 12 months? Same unit as in Q4		9.- This expenditure concerns how many members of the household?
MONTH	ARY (average per mo	QUANTITY	UNIT	QUANTITY	NUMBER

Average per month

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Only acquisition

example 3

SECTION 12: DIARY OF FOOD AND RECURRING NON-FOOD COMMODITIES

DAY 1 NUMBER OF LINES COMPLETED DAY 2

ITEM LINE NUMBER	ITEM DESCRIPTION	QUANTITY ACQUIRED (IN REPORTED VALUE)	MODE OF ACQUISITION
			1. PURCHASED
			2. GIFT FROM OTHER HOUSEHOLDS
			3. GIFT FROM OUTSIDE THE HOUSEHOLD
			4. PAYMENT FOR WORK
			5. SELF-PRODUCTION
			6. OTHER SPECIFY (ENTER INCOME CODE)
CODE	UNIT	AMOUNT	MODE

Quantity acquired

Mode of acquisition

Value

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Both acquisition and consumption  
example 4 (last one)

Did you purchase...	Did you consume...			Mode of acquisition of consumed food		
	quantity	value		quantity	value	
HS-1 NO. 1 (PGR)	QUANTITY	VALUE	EXP	HS-1 NO. 1 (PGR)	QUANTITY	VALUE
1111. Other (specify food)						
1112. Other (specify food, except 1111.1 through 1111.6)						
1113. Non-alcohol						
1114. All kinds of food (except 1111, 1112, 1113, 1115)						
1115. Other kinds of food						
1116. Alcohol						

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Evidence on common questionnaire design issues

Smith et al. (2014: 14-15)

1. Acquisition surveys: **filter question** on something else (18%) – see example 1
2. Routine month surveys: **ambiguity** about whether respondents should report on the **routine month** in the recall period or only those months in which any food item is consumed (13%) – see example 2
3. **Ambiguity** on whether to report on acquisition or consumption (7%)
4. Data collected on **food harvested** rather than **food consumed** from home production (3%) – see example 1

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Should we collect data on acquisition or consumption?

- It depends on the purpose of the survey (lecture 4)
- **Welfare analysts** would want **consumption** (lectures 1-2)
- **Statisticians** (and others) are also interested in **acquisition** to construct weights for their CPIs
- Conforti et al. (2017) evidence from 81 recent surveys says that the difference in estimated mean acquisition and mean consumption is small, but acquisition is much more variable

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## Recommendations

FAO and WB (2018: 53-55)

1. Always collect data on all **modes of acquisition (purchase, own-production, in-kind receipts)**, irrespective of whether focus is on amount consumed or acquired.
  - If questionnaire only records food obtained through some sources (such as purchases) there will be **underestimation** of both consumption and acquisition
  - Pay special care to **in-kind receipts** that are likely to be missed, such as payments for labor and social programs
  - Be careful not to **duplicate information** captured in other modules (e.g., employment or social assistance)

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## Recommendations

FAO and WB (2018: 53-55)

2. Surveys should be designed so that it is clear to respondents, enumerators, and data users **what information (consumption, acquisition, or both) is requested and reported**
  - If **consumption**: it should be clear whether it is food **intended** for consumption (including food waste) or food **actually** consumed (net of food waste)
  - If **purchases**: recommended to **add an extra question** on how much was consumed out of those purchases, to avoid mixing acquisitions from purchases with consumption from own-production and in-kind receipts

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## Recommendations

FAO and WB (2018: 53-55)

3. Avoid sources of **incomplete or ambiguous enumeration**
  - Do not use **filter questions** on consumption to rule out acquisition (and vice versa)
  - Avoid filter questions that focus on food purchases
  - For own-production, the question must be worded to clearly indicate food consumed from **own-production** rather than food **harvested**. If not, values reported may include food entering the household's production stocks (that is, not for immediate consumption).

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## 2. Recall vs. diary and length of reference period

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### Definitions: recall and diary

Data on household food consumption (or acquisition) commonly collected in one of two ways:

1. Respondents are interviewed and asked to **recall** consumption during a specified period (past week, past month...).
2. Households are asked to keep a **diary** over a reference period (days, weeks...) and record consumption at the moment it takes place.

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### Definitions: recall period and reference period

- **Recall period**: the period over which respondents are asked to recall their consumption
- **Reference period**: the period over which data collection happens
- For example:
  - Households are interviewed about food consumption in the past 7 days, over 4 weekly visits
  - 7 days = **recall period**, 28 days = **reference period**

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Example of recall questionnaire  
Zambia Living Conditions Monitoring Survey (LCMS VII) 2015

Section 11A: Household Expenditure

LAST 2 WEEKS		PURCHASES		OWN PRODUCTION		GIFTS, KNOWN FOR WORK, BATTLE BOAT	
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Did this household purchase/consume/produce during the last 2 weeks?	During the last 2 weeks, how much did you purchase/produce for this amount?	How many (UNIT) of (ITEM) did you purchase/produce for this amount?	How many (UNIT) of (ITEM) did you produce for this amount?	During the last 2 weeks, how many (UNIT) of (ITEM) did you receive for this amount?	During the last 2 weeks, how many (UNIT) of (ITEM) did you receive for this amount?	During the last 2 weeks, how many (UNIT) of (ITEM) did you receive for this amount?	During the last 2 weeks, how many (UNIT) of (ITEM) did you receive for this amount?
YES	(ITEM) (S) (TOTAL)						
NO							
SEND ITEM							
SEND ALIQUOT							
SEND 1/2 ALIQUOT							
VALUE IN RWAGWA	QUANTITY	UNIT CODE	QUANTITY	UNIT CODE	VALUE IN RWAGWA	QUANTITY	UNIT CODE
VALUE IN RWAGWA	QUANTITY	UNIT CODE	VALUE IN RWAGWA	QUANTITY	UNIT CODE	VALUE IN RWAGWA	QUANTITY
25	26	27	28	29	30	31	32

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Example of diary  
Zimbabwe Poverty Income Consumption and Expenditure Survey 2011

Date	Quantity e.g. /x/kg	Item description	Total value		Kind of consumption
			\$	C	
1/6	2x1 loaf	Bread	1	36	PU PN G B P O T
1/6	2x1L	Milk	2	70	PU PN G B P O T
1/6	2x1kg	Beef	2	60	PU PN G B P O T
3/6	1x5kg	Maize meal	3	90	PU PN G B P O T
3/6	2x300ml	Soft drink	4	64	PU PN G B P O T
3/6	12xquarters	Beer clear	19	20	PU PN G B P O T

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Diary or recall?

- Which approach is better, in terms of the quality of collected data?
- Both methods have **pros and cons**
- In particular, they both have the potential to generate **measurement error**, for different reasons
- Risks need to be carefully evaluated, using empirical evidence

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## Problems with recall

- Memory can fail: **biases** related to length of recall period
- **Long** recall period
  - Tendency to forget, or **memory decay**
  - More likely if expenditure is perceived as ordinary, **not salient**
  - Leads to **under-reporting** of consumption
- **Short** recall period
  - **Telescoping**: tendency to mistakenly report consumption that has actually taken place *outside* the recall period
  - More likely if expenditure is perceived as extraordinary, **salient**
  - Leads to **over-reporting** of consumption

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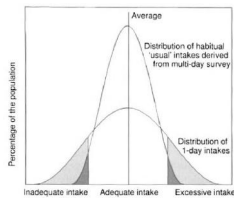
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## Length of recall period and shape of the distribution

Rosalind Gibson (2005: 139)



A short recall overestimates variance, which is a problem for measures of “inadequate intake” (including poverty)

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## Problems with diary

- In principle, **diary avoids memory fails**, as it is compiled close to the moment in which event (consumption or purchase) occurs
- In practice, diary keeping introduces other problems:
  - **Respondent burden and fatigue**, particularly when length of diary increases: evidence of “diary exhaustion” (Brzozowski, Crossley and Winter 2017; Gibson 2013)
  - To reduce these issues, high levels of supervision are needed, which imply **high implementation costs** (FAO study of Bangladesh 2010 HIES showed good results with enumerator visits every two or three days)

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Alternative methods are unsatisfactory – I/II

**Usual month approach**

- Respondents are asked to report consumption for the “usual month” during the previous year
- Advocated by Deaton and Grosh (2000) to capture typical consumption
- At best, it is not more effective than simple recall; at worst, it introduces errors related to education of respondents, due to cognitive burden (Fiedler and Mwangi 2017: 25; Friedman et al. 2017)

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Alternative methods are unsatisfactory – II/II

**Bounded recall**

- First visit to household establishes the bound of the recall period for a second visit, which is when the interview actually takes place
- Meant to avoid telescoping errors
- Not yet enough evidence that it offers significant advantages in data quality (Gibson, 2005), while it is more costly to administer (double the visits)

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Do these “details” matter?

- Large body of evidence finds that the choice between **diary and recall**, and of the **length of recording periods**, can **significantly affect results**
- Important papers that studied the impact of survey methodology on consumption and poverty statistics:
  - SHWALITA study in Tanzania (Beegle et al. 2012, Gibson et al. 2015, de Weerd et al. 2016)
  - Niger (Backiny-Yetna et al. 2017)

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## The importance of questionnaire design – Tanzania

Beegle et al. (2012)



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## Overview

Beegle et al. (2012)

- Focus on food consumption
- Benchmark (“gold standard”): **personal diary with daily visits**
- **Experimental design** compares benchmark with 7 alternative questionnaires, which vary by method of data capture (recall or diary), level of respondent, length of reference period, number of items in the recall list (which we will cover in lecture 6)

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## Fielding eight alternative consumption questionnaires

- “Our survey experiment entailed fielding **eight alternative** consumption **questionnaires** randomly assigned to 4,000 households in Tanzania.”
- If **questionnaire design** did not matter, **results** from data collected through different questionnaires **should not differ too much**

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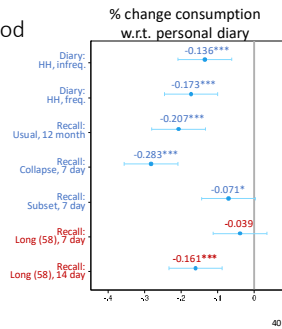
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### Results: length of recall period

- Same instrument (recall module, long list), except increase recall period from 7 days to 14 days:
- 12% average per capita consumption
- + 8 points poverty headcount rate




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### The importance of questionnaire design – Niger

Backiny-Yetna et al. (2017)




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### Overview

Backiny-Yetna et al. (2014)

- Objective: assess impact of survey methodology on poverty statistics
- Method: **experimental approach**, 3 alternative instruments
- Motivation: Three different instruments had historically been used to collect food consumption data in Niger:
  - 2005 CWIQ – Usual month consumption, list of ~200 food items
  - 2007 HH Budget Survey – 7 day diary, open food list
  - 2011 LSMS Survey – 7 day recall
  - same module for non-food expenditures
- Can comparisons be made about poverty over time in Niger?

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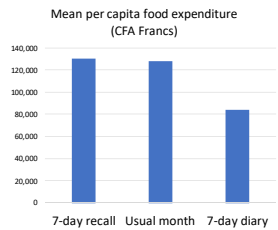
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### Results: diary vs. recall

- 7-day recall has the highest mean of per capita expenditure, 7-day diary has the lowest
- Surprising
- Possible reasons:
  - Telescoping in recall instrument
  - This diary is open-ended (no list of food items to choose from): respondent burden




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### Impact on poverty indicators

**Table 8**  
Poverty Indicators by Type of Questionnaire Using the National Poverty Line (Niger).

	7-day recall		Usual month		7-day diary		$\chi^2$	Level
	Mean	SE	Mean	SE	Mean	SE		
Poverty headcount	0.425	0.002	0.465	0.006	0.519	0.051	1.91	0.392
Poverty Gap	0.150	0.024	0.136	0.016	0.199	0.028	8.57	0.020
Squared poverty gap	0.070	0.014	0.053	0.010	0.100	0.019	11.64	0.006

- Differences in questionnaire design are responsible for different poverty estimates
- A similar result applies to inequality estimates
- Questionnaire design matters

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### Questionnaire design and nutritional outcomes – Tanzania

De Weerd et al (2016)

#### The Challenge of Measuring Hunger through Survey

**Journal of the American Dietetic Association**, vol. 106, no. 10, October 2006  
**Journal of Nutrition**, vol. 136, no. 10, October 2006  
**Journal of the American Dietetic Association**, vol. 106, no. 10, October 2006

**Introduction**  
 In the United States, the prevalence of hunger has increased in recent years. The number of people living in households with very low food security in 2010, 14.6 million, is up from 13.5 million in 2007. The number of people living in households with low food security in 2010, 8.0 million, is up from 7.5 million in 2007. The total number of people living in households with low or very low food security in 2010, 22.6 million, is up from 21.0 million in 2007. The total number of people living in households with low or very low food security in 2010, 22.6 million, is up from 21.0 million in 2007. The total number of people living in households with low or very low food security in 2010, 22.6 million, is up from 21.0 million in 2007.

**Conclusion**  
 The United States is not alone in facing the challenge of measuring hunger. The challenge of measuring hunger is a global one. The challenge of measuring hunger is a global one. The challenge of measuring hunger is a global one.

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Results: measuring hunger with diary vs. recall

Module	Mean KJ/calories per Capita	Hunger Prevalence
1. Long list of 58 food items; 14 day recall	1,794 (1,723-1,865)	.483 (.439-.726)
2. Long list of 58 food items; 7 day recall	2,129 (2,055-2,203)	.481 (.432-.531)
3. Short list of 17 food items; 7 day recall*	2,066 (2,001-2,131)	.484 (.435-.534)
4. Long list of 58 food items; usual 12 month recall	1,909 (1,825-1,995)	.594 (.546-.642)
5. 14 day household diaries with frequent visits	2,412 (2,340-2,485)	.265 (.225-.313)
6. 14 day household diaries with infrequent visits	2,517 (2,452-2,581)	.232 (.186-.275)
7. 14 day individual diaries with frequent visits	2,677 (2,599-2,755)	.188 (.148-.228)

Note. N = 3,522; 95% confidence intervals in parentheses.  
 \* The 17 foods account for 77% of the food budget, so calorie availability is scaled up by 1/77.

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Recap of the evidence

- Recall vs. diary: questionnaire design choices matter for results on consumption, poverty, nutrition...
- In order to yield high-quality data in low-income and rural contexts, diary requires frequent, costly supervision
- Recall period: food consumption tends to be underestimated with longer recalls
- Little evidence in support of alternative methods (e.g., "usual month" and "bounded recall")

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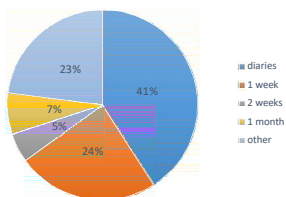
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Current practice  
 Smith et al. (2014)



- Variety of recall periods
- "other" includes the usual-month approaches and multiple recall periods

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## Recommendations

FAO and WB (2018: 50-53)

1. While a **diary approach** may be the “gold standard” with close supervision and careful implementation, it is not suitable for resource-constrained statistical offices in low- and middle-income countries
2. Low-income countries are advised to adopt **recall interviews and a 7-day recall period**, as this method provides a good balance between accuracy and cost-effectiveness
3. Any survey using diary methods must be closely supervised to ensure compliance. The reference period should not exceed **2 weeks**.

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## Recommendations

FAO and WB (2018: 50-53)

3. The “**usual month**” approach should not be used.
4. Any change in recall period or data collection method (diary vs. recall) should be accompanied by an **experimental component** aimed at assessing the change in survey estimates.
5. The evidence in Beegle et al. (2012), De Weerd et al (2016), and Backiny-Yetna et al. (2017) will hopefully serve as a useful reminder.

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## Lessons learned

- Quality data on **food** consumption are **crucial** for several research objectives, living standards measurement being one of them
- **Questionnaire design matters**: large impact on final results
- This lecture has explored some **foundational choices** in the design of the food module:
  - Should we measure **consumption** or **acquisition**?
  - Should we use **diary** or **recall**? How should the reference period be set?
- **Experimental evidence** provides guidance.

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## References

### Required readings

FAO and The World Bank. 2018. Food data collection in Household Consumption and Expenditure Surveys. Guidelines for low- and middle-income countries. Rome. Sections 2.1, 2.3, 3.3, 3.3.

Smith, L. C., Dupriez, O., and Troubat, N. 2014. Assessment of the reliability and relevance of the food data collected in national household consumption and expenditure surveys. International Household Survey Network. Sections 3.1, 3.2, 3.3.

### Suggested readings

Baskiny-Netra, P., Steele, D., and Djimo, I. (2014). The impact of household food consumption data collection methods on poverty and inequality measures in Niger. World Bank Policy Research Working Paper 7090. World Bank, Washington, DC

Beegle, K., De Weertdt, J., Friedman, J., and Gibson, J. (2012). Methods of household consumption measurement through surveys: Experimental results from Tanzania. Journal of Development Economics, 98, 3–18.

Brzozowski, M., Crossley, T. F., & Winter, J. K. (2017). A comparison of recall and diary food expenditure data. Food Policy, 72, 53–61.

De Weertdt, J., Beegle, K., Friedman, J., and Gibson, J. (2016). The challenge of measuring hunger through survey. Economic Development and Cultural Change, 64(4), 727–758.

Fiedler, J. L. and Mwangi, D. M. 2016. "Improving household consumption and expenditure surveys' food consumption metrics: developing a strategic approach to the unfinished agenda". IFPRI

Friedman, J., Beegle, K., De Weertdt, J. and Gibson, J. 2017. Decomposing response error in food consumption measurement: implications for survey design from a randomized survey experiment in Tanzania. Food Policy, 72: 94–111.

Gibson, J., Beegle, K., De Weertdt, J., and Friedman, J. (2013). What does variation in survey design reveal about the nature of measurement errors in household consumption?. The World Bank.

Gibson, R. S. (2005). Principles of nutritional assessment. Oxford University Press, USA.

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Thank you for your attention

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Homework

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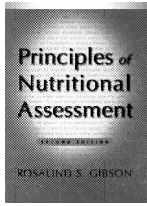
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### Exercise 1 – Engaging with the Literature



- Read Gibson (2005) chapter 5 “Measurement Error in dietary assessment”.
- Write a short essay (not to exceed 3,000 characters) where you summarize the main findings.

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### Exercise 2 – Acquisition vs. consumption

Look at the following examples of recent questionnaires. Ask yourself what they would allow you to estimate:

- total value of food consumption?
- total value of food acquisition?
- both?
- none?

For each example, shade the parts of the diagram for which you would be able to provide an estimate.

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### Example 1

SECTION 5A: FOOD LAST 7 DAYS											
1		2		3		4		5		6	
Enter the past one week (7 days), did you or others in your household consume any (ITEM)?		How much in total did your household consume in the past week?		How much came from purchases?		How much did you harvest?		How much came from own production?		How much came from gifts and other sources? IF NONE RECORDED.	
INCLUDE FOOD BOTH EATEN COLLECTIVELY IN THE HOUSEHOLD AND THAT EATEN SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS.				IF NONE RECORDED IN AND NEAR TO 0.				IF NOT CONSUMED FROM OWN PRODUCTION RECORD 0.			
YES... 1 NO... 2 ▶ NEXT ITEM		SEE UNIT CODES		SEE UNIT CODES				SEE UNIT CODES		SEE UNIT CODES	
Q		QUANTITY	UNIT CODE	QUANTITY	UNIT CODE	AMT		QUANTITY	UNIT CODE	QUANTITY	UNIT CODE
CEREALS											
1	Wheat										
2	Rye										
3	Barley										
4	Millet										
5	Sorghum										
6	Other cereal (SPECIFY)										

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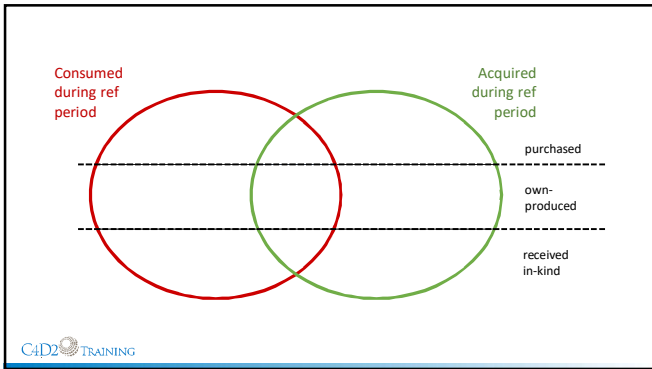
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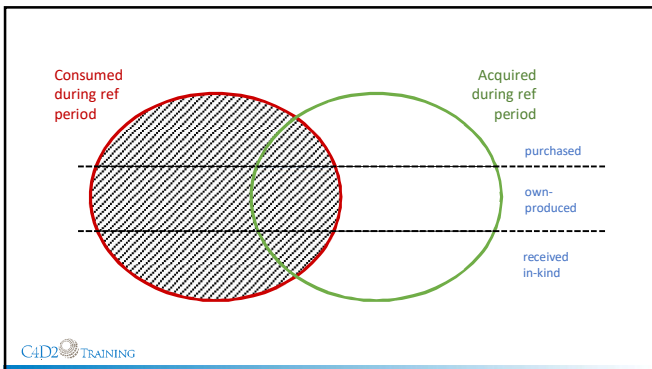
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### Example 2

N°PASS	N°ZD	N°MENAGE	SECTION C : CONSOMMATION DU MENAGE DES 7 DERNIERS JOURS					
<b>CiD1. Code produit</b>	<b>Ligne le nom de chaque produit.</b> Écrire la réponse pour chaque produit à C02 avant de poser les questions C03 à C05.	<b>CiD2. Combien le Ménage a-t-il dépensé Pour des achats du (PRODUIT) au cours Des 7 derniers jours ?</b>	<b>CiD3. Votre Ménage a-t-il consommé (PRODUIT) au cours des 7 derniers jours ?</b>	<b>CiD4. Quelles sont la quantité totale et la valeur des achats consenties et prélevement de stocks achetés consommés ou (PRODUIT) par le ménage au cours des 7 derniers jours.</b>	<b>CiD5. Quelles sont la quantité totale et la valeur du (PRODUIT) consommé par le ménage qui ont été produites de sa propre production au cours des 7 derniers jours.</b>	<b>CiD6. Quelles sont la quantité totale et la valeur du (PRODUIT) consommé par le ménage qui ont été reçues en cadeau, en contrepartie d'un travail ou en troc au cours des 7 derniers jours.</b>		
<p><b>LISTE DES UNITES POUR LES QUESTIONS C04, C05 ET C06</b></p> <p>24 Mon (06 = quart de kg)            50 Z. paille (07 = quintal)            60 = rec. de 50kg (08 = demi-tonne)            94 = kg (09 = quintal)            95 = demi kg (10 = litre)</p> <p>11 = boquete pain (12 = sac de 10kg)            12 = sac de 50kg (13 = sac)            14 = sac saupé (15 = sac de 10kg)            19 = mètre (20 = sac de 20 litres)</p> <p>16 = litre (17 = sac de 1kg)            18 = quart de litre (19 = sac de 1kg)            21 = bidon de 20 litres (22 = bidon de 5 litres)            23 = sac de 1kg (24 = sac de 5kg)            25 = multi-unité</p>								
<b>CODE</b>	<b>Libellé des Produits</b>	<b>MON</b>	<b>EN FCFA</b>	<b>CODE</b>	<b>QUANTITE</b> <b>UNITE</b>	<b>MONTANT EN FCFA</b>	<b>QUANTITE</b> <b>UNITE</b>	<b>MONTANT EN FCFA</b>
<b>01 ALIMENTATION ET BOISSONS</b>								
<b>011 Céréales et produits à base de céréales</b>								
01101	Maïs							
01102	Mais							
01103	Sorgho							
01104	Foufo							
01105	Pain au							

**C02. How much did the household spend to purchase (PRODUCT) during the last 7 days?**

**C03. Did your household consume (PRODUCT) during the last 7 days?**

If No, skip to the next product

CiD2 TRAINING

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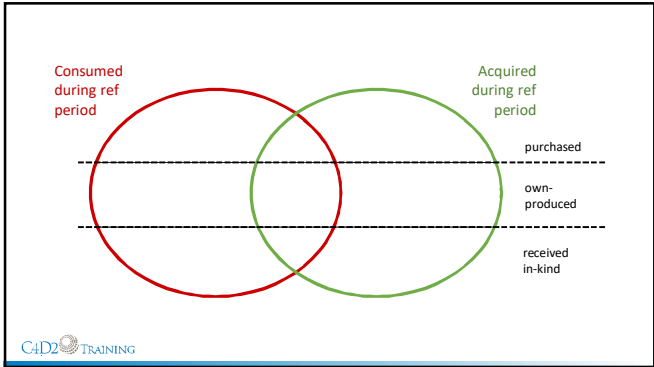
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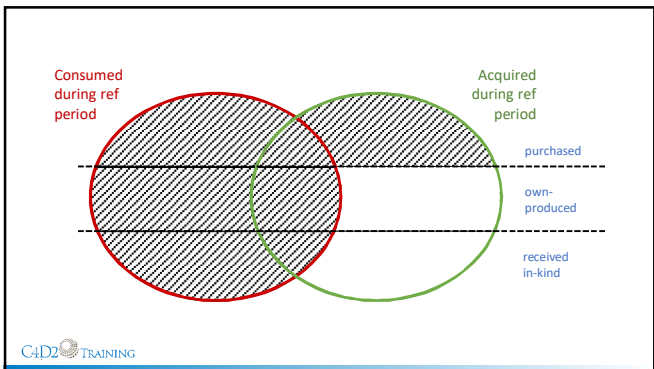
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