



# FEED THE FUTURE

The U.S. Government's Global Hunger and Food Security Initiative



Session 6:  
Collecting Performance  
Monitoring Data

Photo: Erin Aquino, Peace Corps

## Session 6: Collecting Performance Monitoring Data



## Gantt Charts

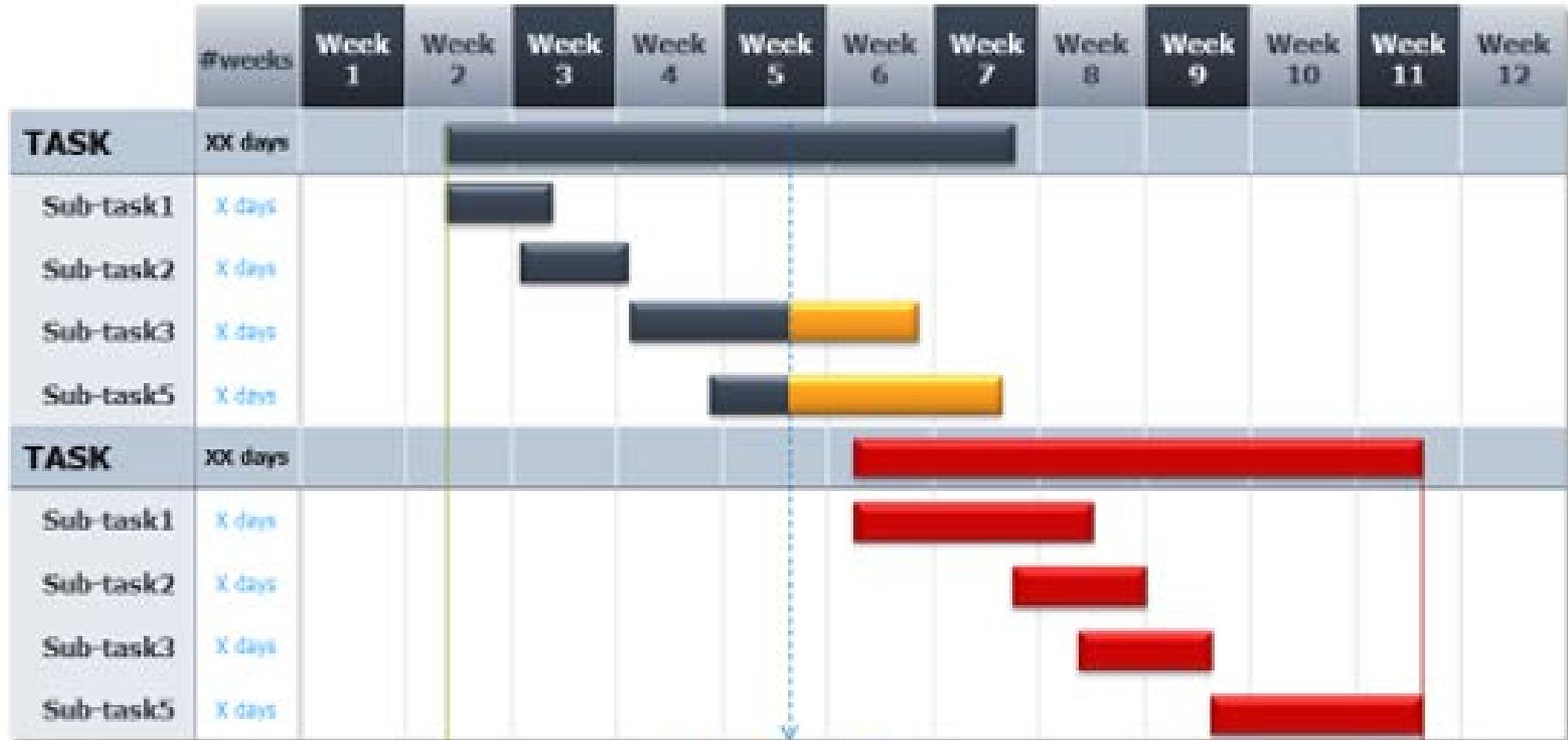
- Activities
  - Shows you what needs to be done
- Time lines
  - Shows you when activities need to be done





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Completed



To be completed



Not started



## Remember:

Careful planning of data collection activities is critical.

Any mistakes made early in the process, once made, cannot be corrected further down the line because each step builds on the last.

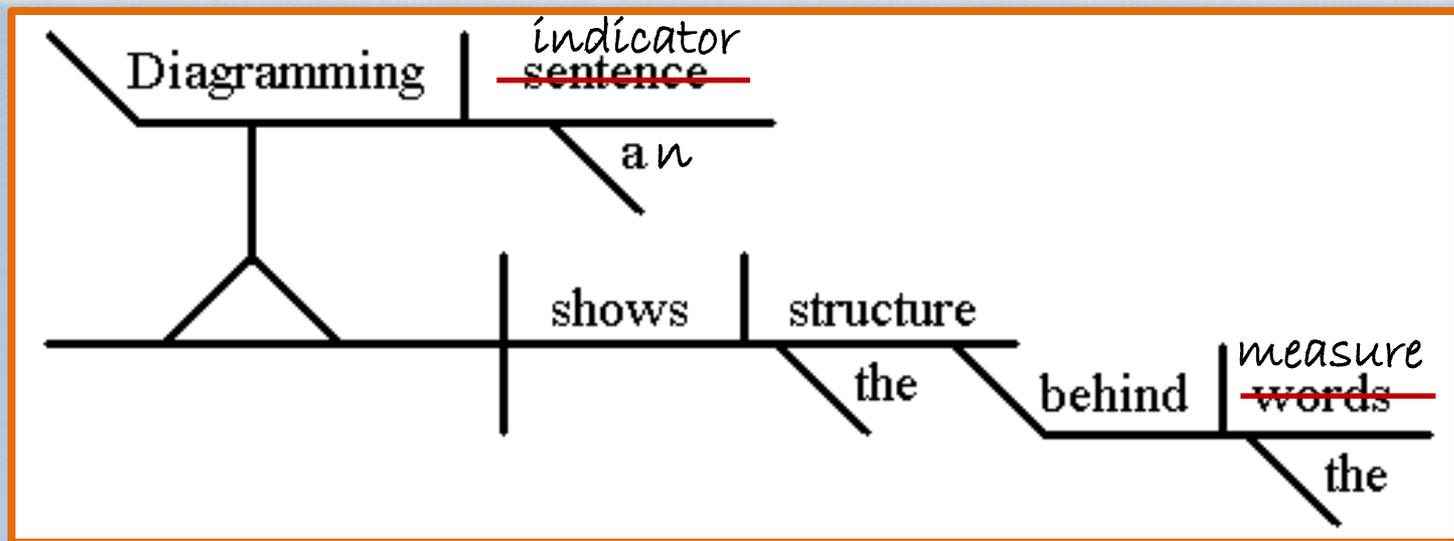
*Measure twice...*





## 'Diagramming' your indicators

...or, how to identify all of the pieces of information you need to collect to report on your indicator





## **INDICATOR EG.3.3-10:**

**Percentage of female direct beneficiaries of  
USG nutrition-sensitive agriculture activities  
consuming a diet of minimum diversity**

Starting point:

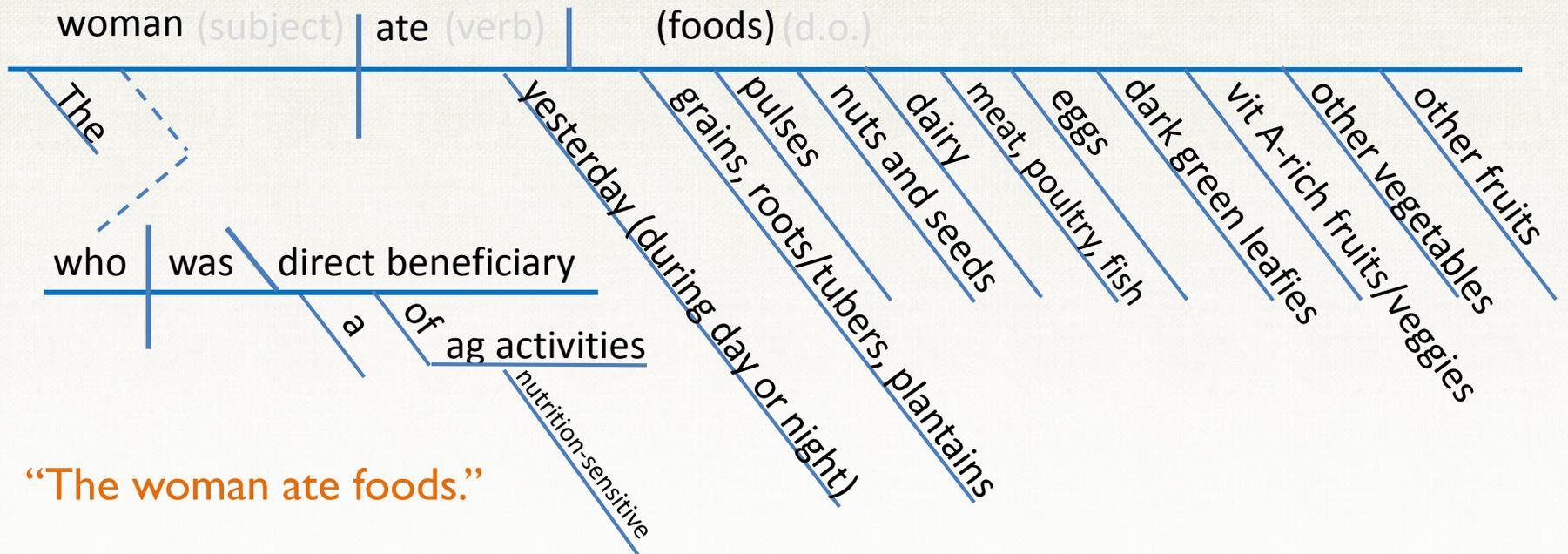
The woman ate foods.

Add details on:

Who, what, where, when?



## INDICATOR EG.3.3-10: Percentage of female direct beneficiaries of USG nutrition-sensitive agriculture activities consuming a diet of minimum diversity





## **INDICATOR EG.3.2-18:**

**Number of hectares under improved technologies or management practices**  
*(independent practice)*

### Starting point:

The farmer applied the technology/practice to crops on [x] hectares of land.

### Add details on:

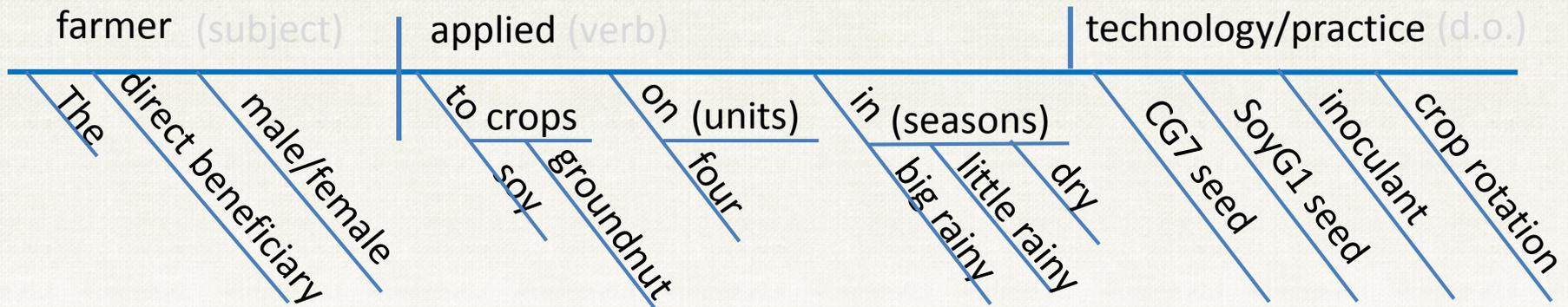
Who, what, where, when?



## INDICATOR EG.3.2-18:

Number of hectares under improved technologies or management practices

*(answer to independent exercise)*



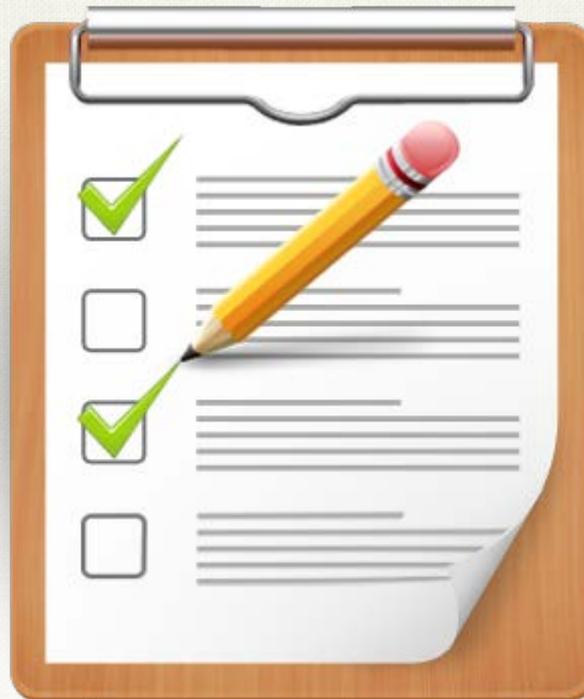
“The farmer applied the technology/practice to crops on [x] hectares of land.”



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# Questionnaire Design





## Questionnaire Design – Content: Information needs

- What standard indicators do you need to measure?
- What custom indicators do you need to measure?
- What other information do you need?
  - Required/desired disaggregates
  - Other information you may want for further analysis to inform your programming beyond just reporting on indicators
- Who do you need to ask?



## Questionnaire Design - Content: Reflecting activity objectives

Key question:

“What is the objective of your activity?”

Just because an indicator is phrased broadly doesn't mean you collect data that captures only broad/general information: reflect your activities.



## Questionnaire Design: Exercise

### INSTRUCTIONS:

- Organize into groups of 3-4
- Review the sample questionnaire and find 10 reasons why it can't be used to collect data for the “hectares under improved technology” indicator
- First team with all 10 problems correctly identified wins a prize (!)





## Questionnaire Design - Content:

# The Questionnaire Appraisal System

(Willis and Lessler 1999)

- Designed to assist in evaluating survey questions, and in finding and fixing problems
- Many improvements to questions can be made through the process of systematic appraisal
- Goal: improve efficiency of questionnaire review process
- Complements & improves pretest and pilot exercises



## Steps in the QAS

- **STEP 1: READING:** Determine if it is difficult for the interviewers to read the question uniformly to all respondents.
- **STEP 2: INSTRUCTIONS:** Look for problems with any introductions, instructions, or explanations from the respondent's point of view.
- **STEP 3: CLARITY:** Identify problems related to communicating the intent or meaning of the question to the respondent.
- **STEP 4: ASSUMPTIONS:** Determine if there are problems with assumptions made or the underlying logic.
- **STEP 5: KNOWLEDGE/MEMORY:** Check whether respondents are likely to not know or have trouble remembering information.
- **STEP 6: SENSITIVITY/BIAS:** Assess questions for sensitive nature or wording, and for bias.
- **STEP 7: RESPONSE CATEGORIES:** Assess the adequacy of the range of responses to be recorded.
- **STEP 8: OTHER:** Look for problems not identified in Steps 1 - 7.



## Questionnaire Design - Content:

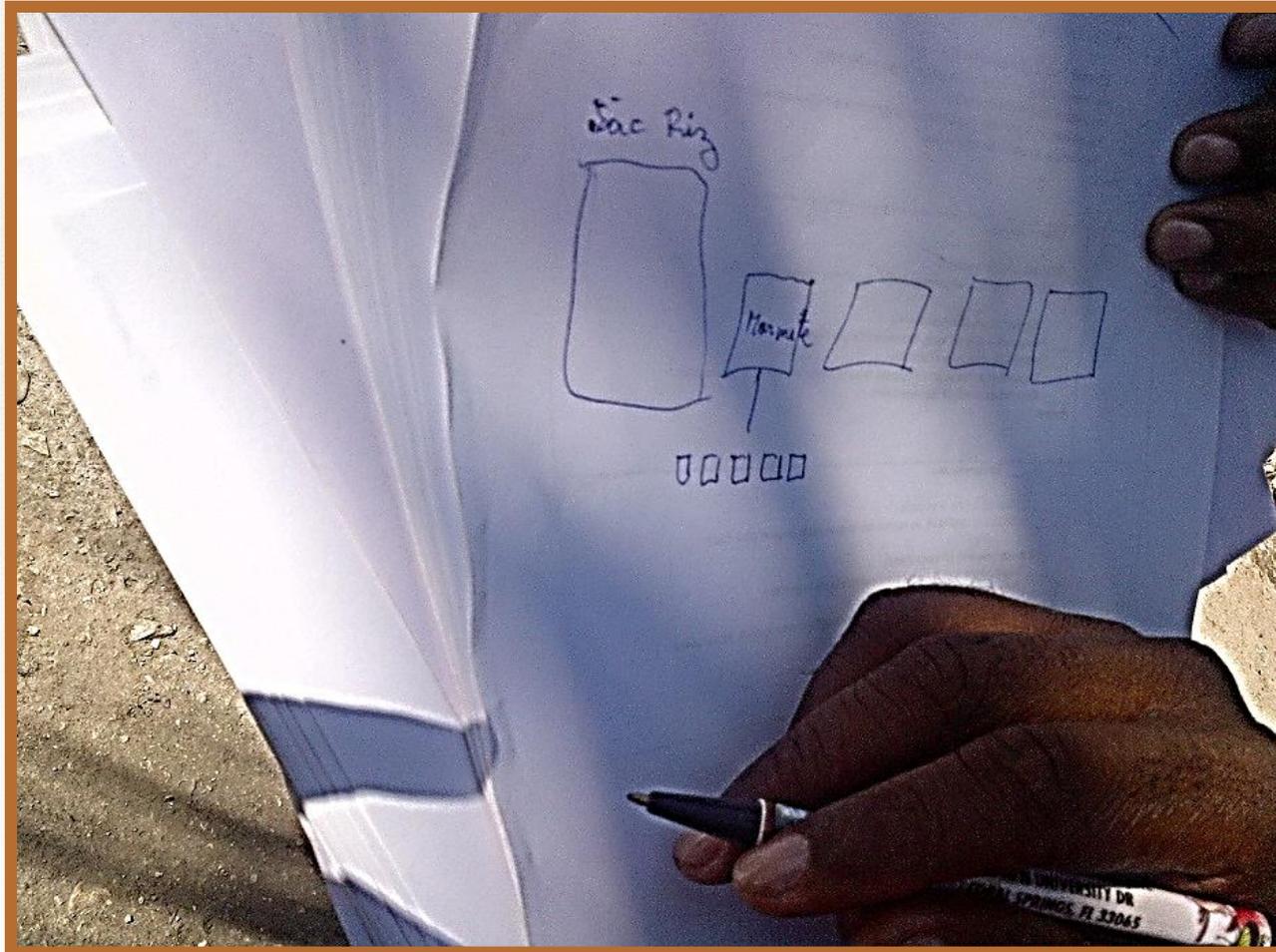
# “Let’s just use questions from...”

- Pros?
- Cons?

Please ensure participation of a trained survey methodologist with expertise in questionnaire design when developing your questionnaire...If you wouldn't hire an accountant to upgrade your home's electrical wiring, you shouldn't ask a project manager to design your questionnaire.



## Conversions





## Questionnaire Design: Formatting

Importance of formatting for data quality:

- Alignment
- ALL CAPS vs. sentence case
- Responses as proximate to questions as feasible
- Intros to each question to explain what the next questions are about
- Use of brackets and parentheses
- Page numbers [x of y]



## Questionnaire Design: Standardization and translation

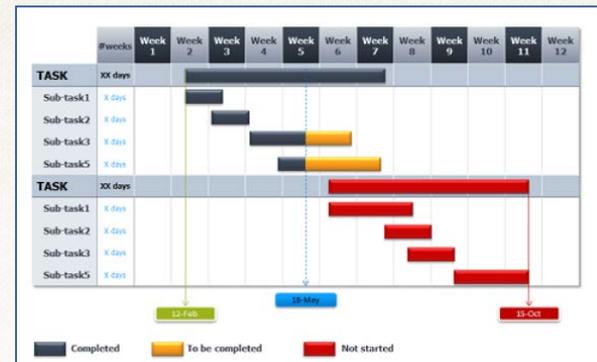
- All questions have to be asked of the same eligibility-type respondent across every household, using the same words or properly translated versions thereof.
- No translation on the fly!



## Individual Application

Think about an FTF activity in which you will need to collect data...

...draft a Gantt Chart for the activity





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## Measuring Area





**Accuracy:** No measurement is perfect and there will always be some degree of error - the key is to control/reduce error and increase accuracy following best practices.

**Direct Measurement and Estimation:** Physically measure the farmer's plot versus estimate area of production by "experts" and/or farmer's estimates.

**Level of measurement:** Is farmers' plots – not necessarily their entire fields.

- plot = single piece of land on which a particular crop is grown. "Crop-plot combination" is measured separately.  
Noncontiguous plots of the **same** crop are added together.



## Measuring Area

**Pacing:** Walking at a normal gait and counting the number of steps to cover the distance of a plot.



**Farmer's Estimates:** Farmer provides estimate of the surface area farmed.



**Tape and Compass:** Measuring tape and compass are used to measure plot area.



**Remote Sensing:** Use of satellite imagery to measure area.



**GPS:** Capturing geographic location data with a Global Positioning System unit (positions on the earth) to measure area.



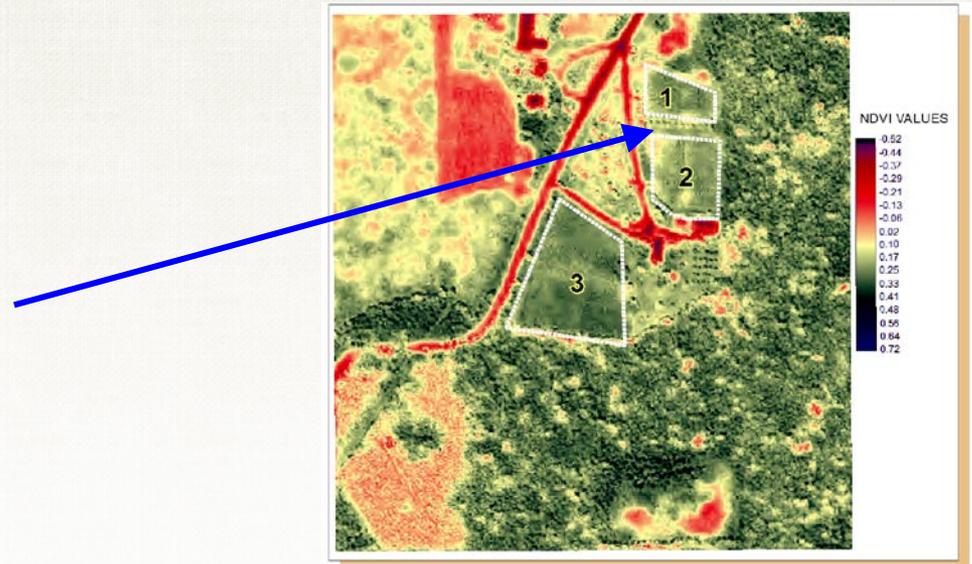


## Measuring Area

### The Case for Collecting Geospatial Data

- Collecting Global Positioning Systems (GPS) measurements and combining with Geographic Information Systems (GIS) data can add value to the project (deeper-dive analysis), inform follow-on, performance management, and serve as a resource for other cross-cutting projects and analysis.

GPSd plots (1,2,3) and Measurement of NDVI in grapes using USDA FSA 1-meter resolution aerial imagery. Note the bright yellow areas in the NW corner of plot #2 which indicates a low NDVI value/crop stress.





## Measuring Area

### Comparison of techniques for measuring area

	Accuracy	Cost	Equipment required	Expertise needed	Level of effort	Plot size
<b>Tape and compass</b>	medium-high	medium; varies with quality	low	low-medium	medium-high	< .5 ha
<b>GPS</b>	high	med-high; varies with quality	high	medium	medium	> .5 ha*
<b>Pacing</b>	low-medium	low	low	low	medium	small-medium
<b>Farmer estimates</b>	low-medium; high w/correction factor	low	low	low	low	small
<b>Remote sensing</b>	low	high	high	high	medium	very large



Determine if your project would benefit from investing in GPS technology.

- Is there added value for monitoring performance and measurement accuracy (e.g. NDVI analysis/crop yield)?
- Are there complementary activities planned?
- Do the costs outweigh the benefits?



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# Measuring Area

## Questions and Answers



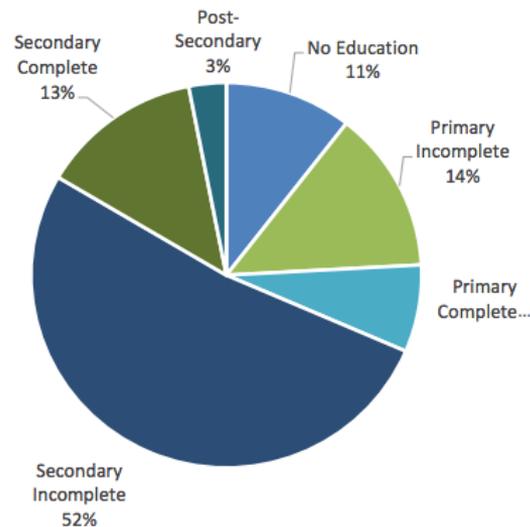


## Using Geospatial Data

### What if you wanted to know about lower secondary completion rates in Ghana?

#### What you typically see:

FIG 3. EDUCATIONAL ATTAINMENT, YOUTH AGES 15-24



Data source: EPDC extraction of DHS dataset 2009

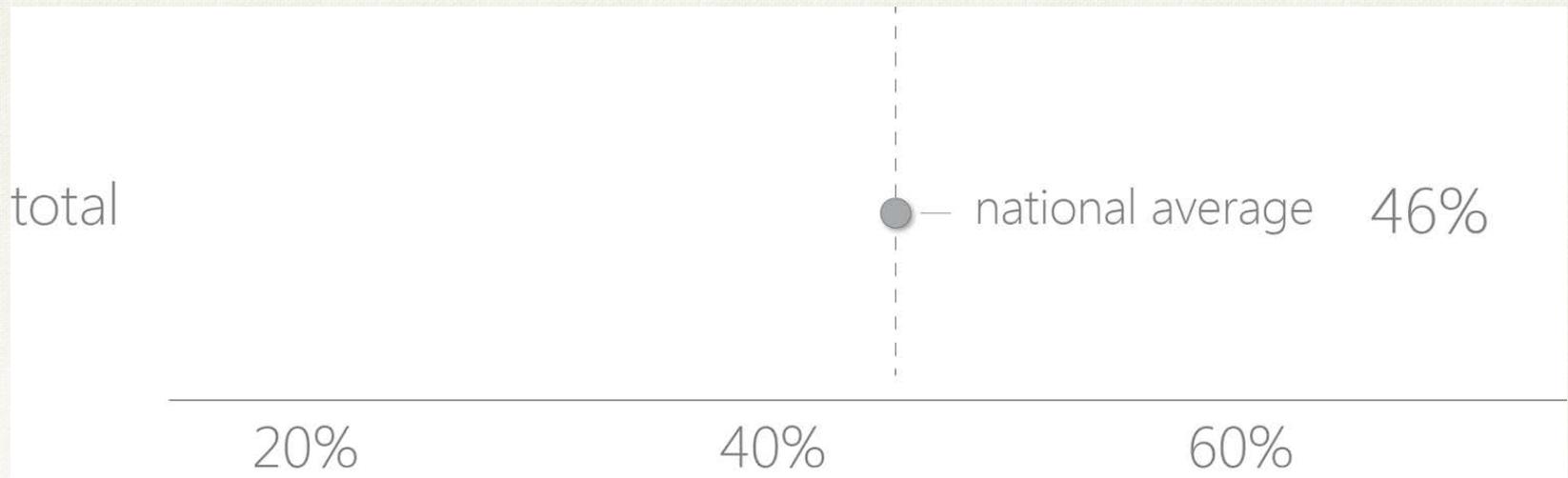
#### What else might you want to know?

- Are rates different for *males* and *females*?
- How do *urban* and *rural* populations compare?
- *Where* is education lacking?



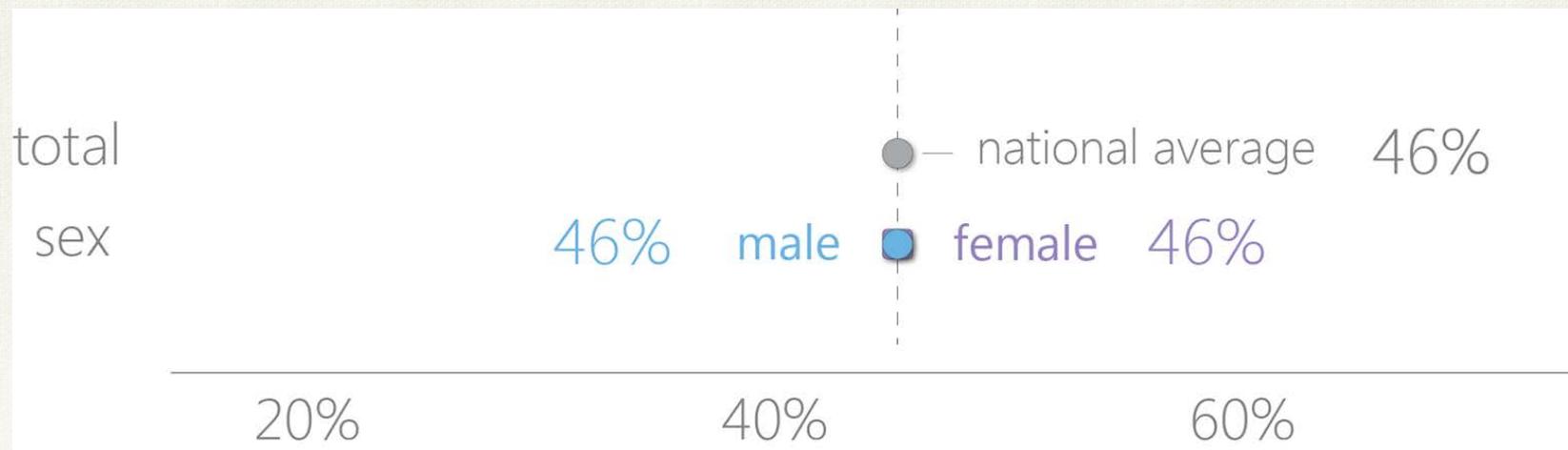
## Breaking down secondary school completion

One number is a start, but isn't very informative:





On average, there's no difference between males and females:



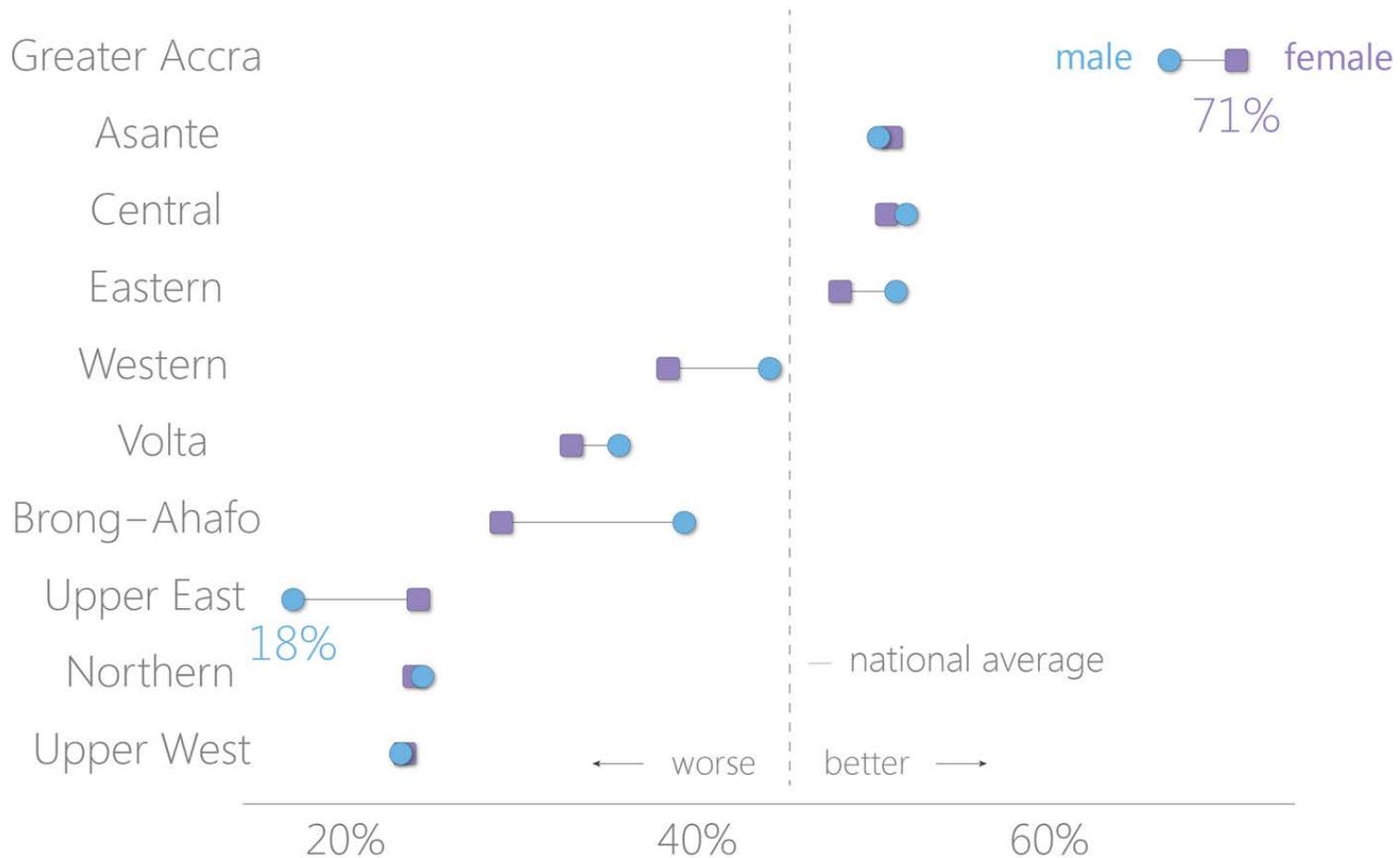


Lower secondary school varies substantially by sex:





## Lower secondary school varies substantially by geography:





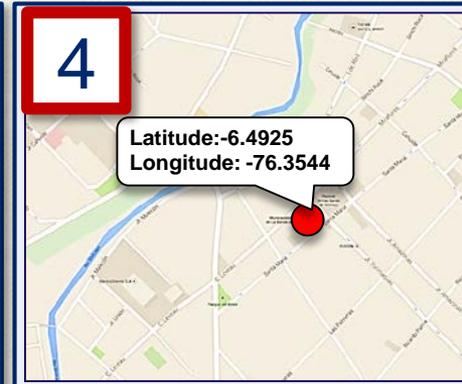
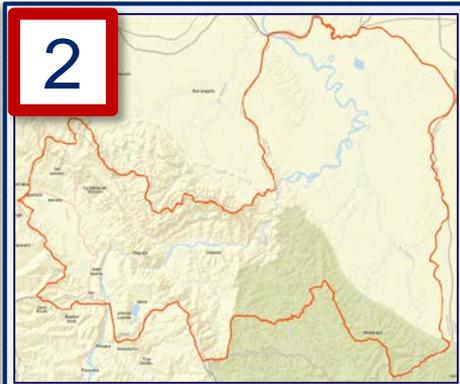
## Common ways to disaggregate data



- Geographically by province, district, etc.
- Sex (required by [ADS 205](#))
- Time
- Wealth/Income/Asset index
- Urban/Rural
- Age
- Education



## If someone asked you where your Activity/IM is located, at which scale would you give the information?



Dept. (Admin 1)

Province (Admin 2)

Populated Place

Exact Location



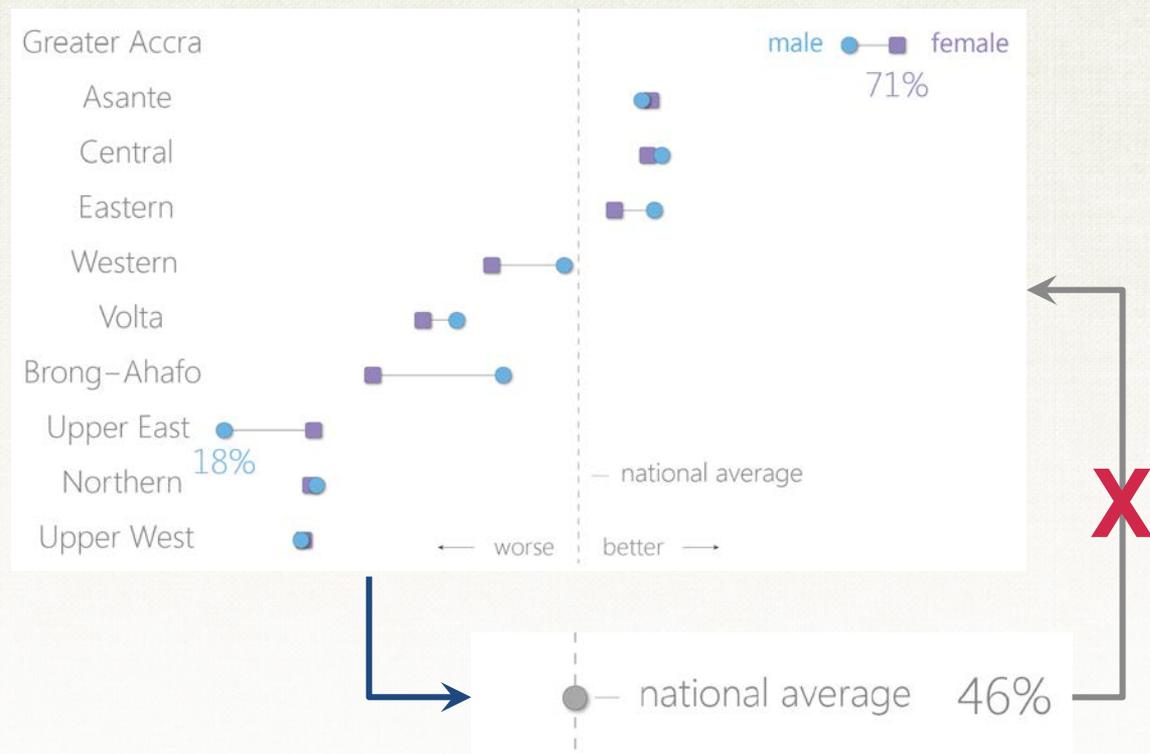
This is how data at these different geographic scales is represented in a table

MAP #	Admin 1	Admin 2	Populated Place	Latitude	Longitude	Activity/IM Task Name
1	San Martin					Microfinance
2	San Martin	Lamas				Microfinance
3	San Martin	Lamas	Tarapoto			Microfinance
4	San Martin	Lamas	Tarapoto	-6.4925	-76.3544	Microfinance



## What to remember

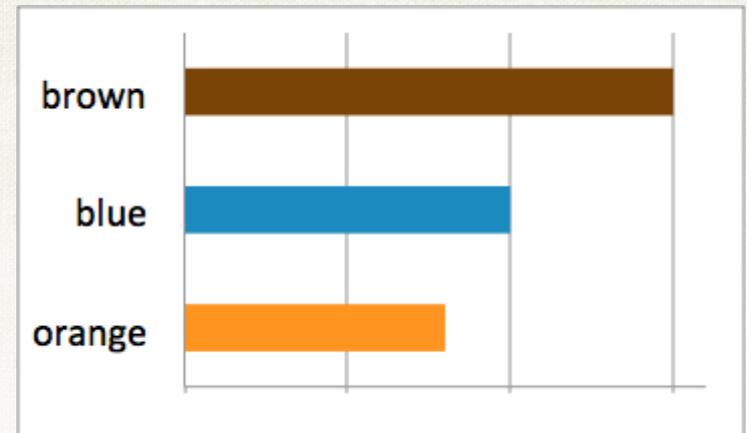
- You can always aggregate data. You can't go back after the data are collected.**





## What to keep in mind

- **Is your sample representative? Is your sample size large enough to be meaningful?**



*What would we conclude about the size of M&Ms by color in this sample?*



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# Sampling Basics

Performance Monitoring



Photo:

## Two Sampling Principles



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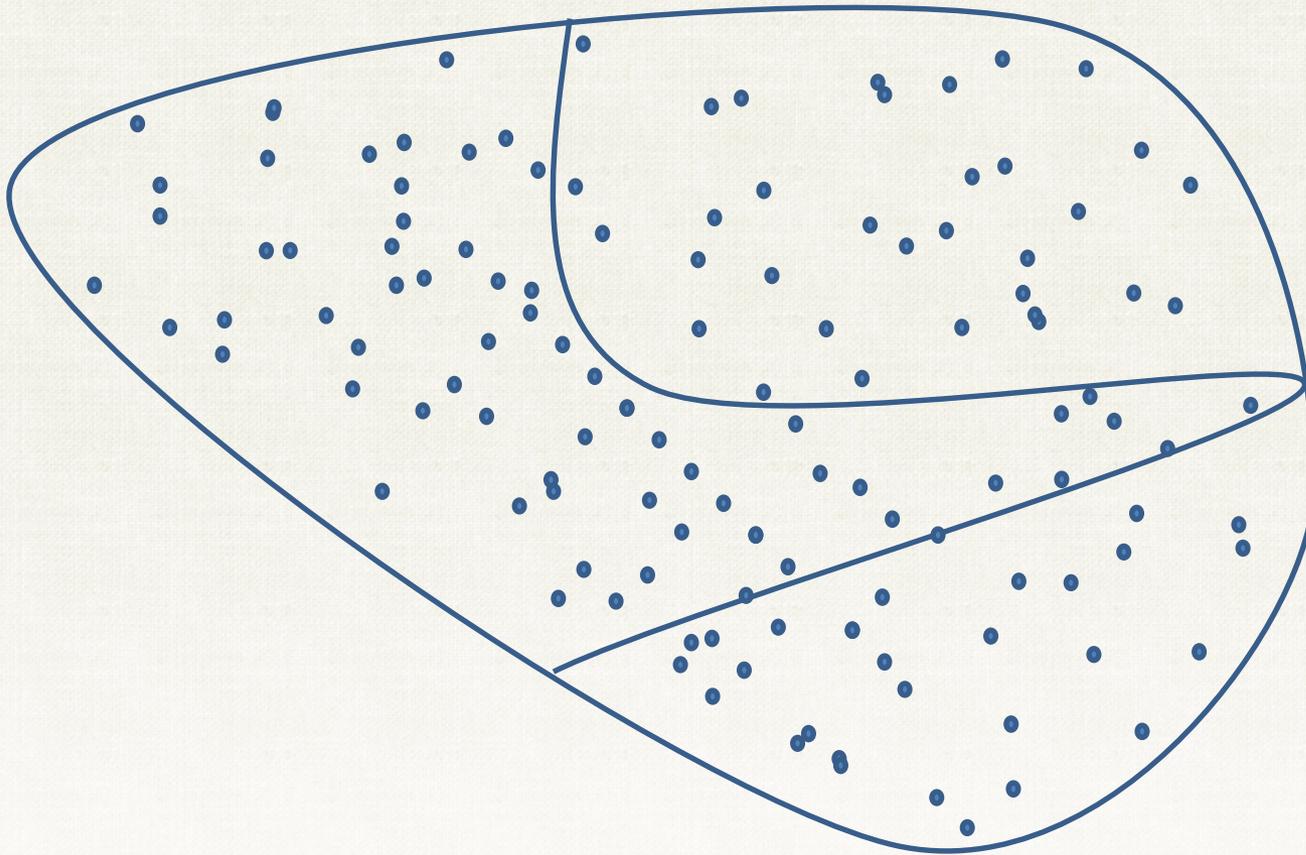
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**We want the sample to be  
representative at a district level.**



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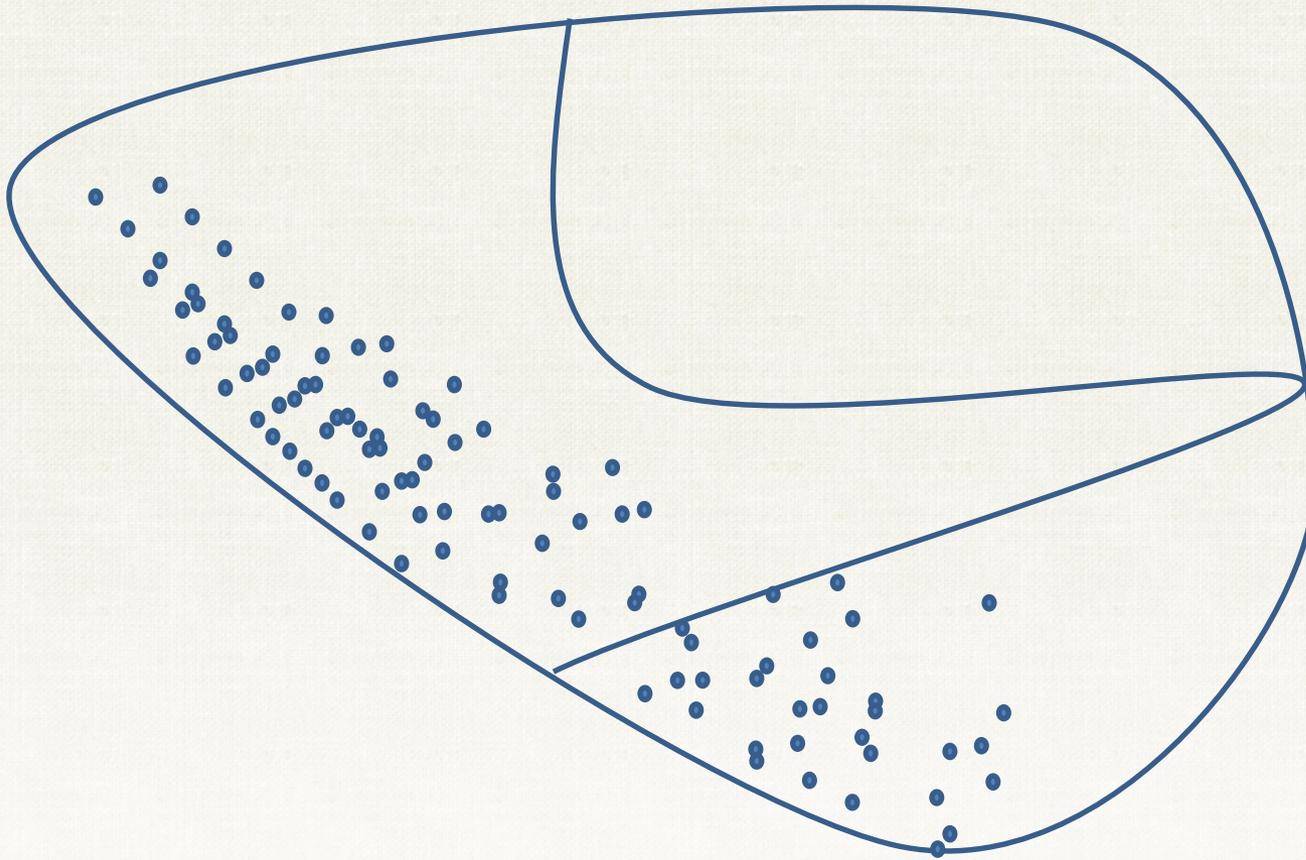
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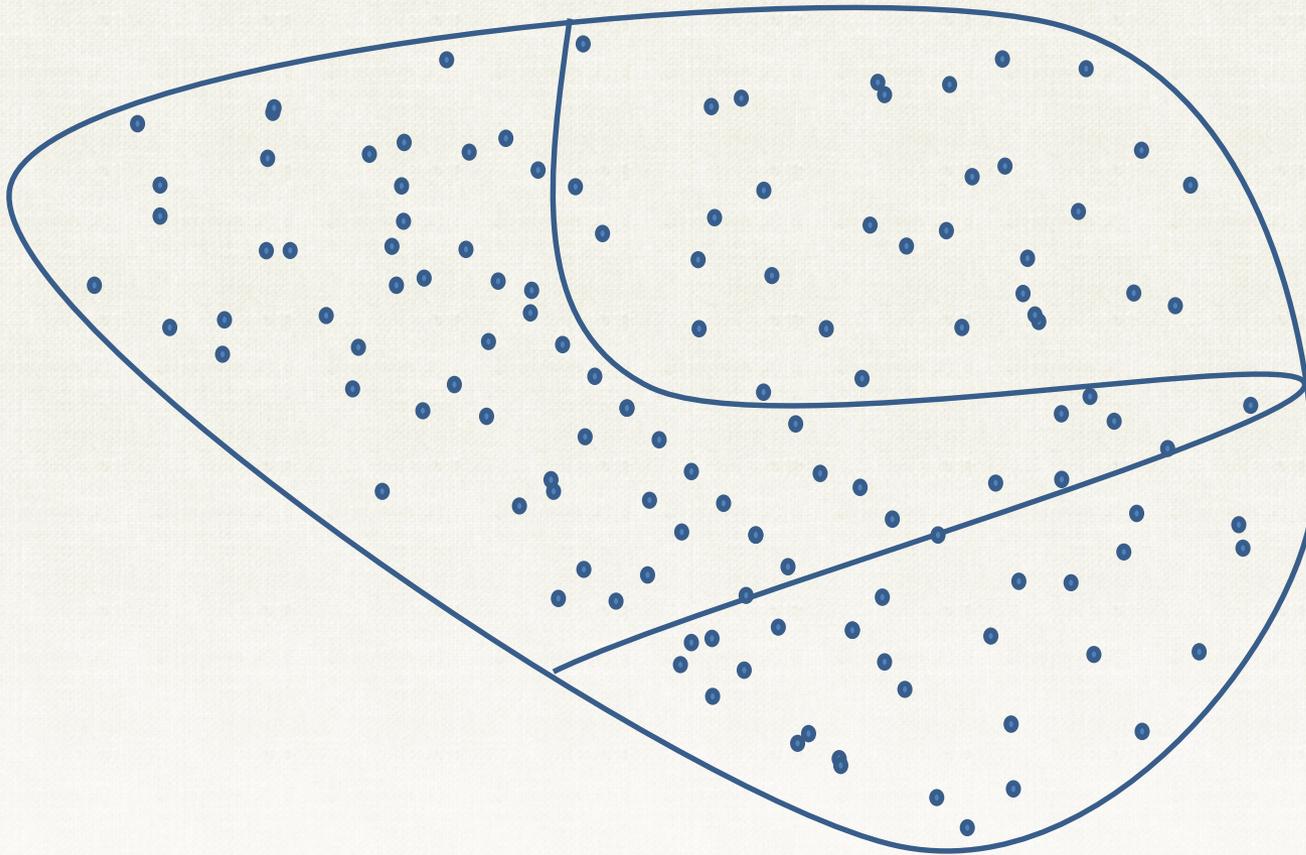
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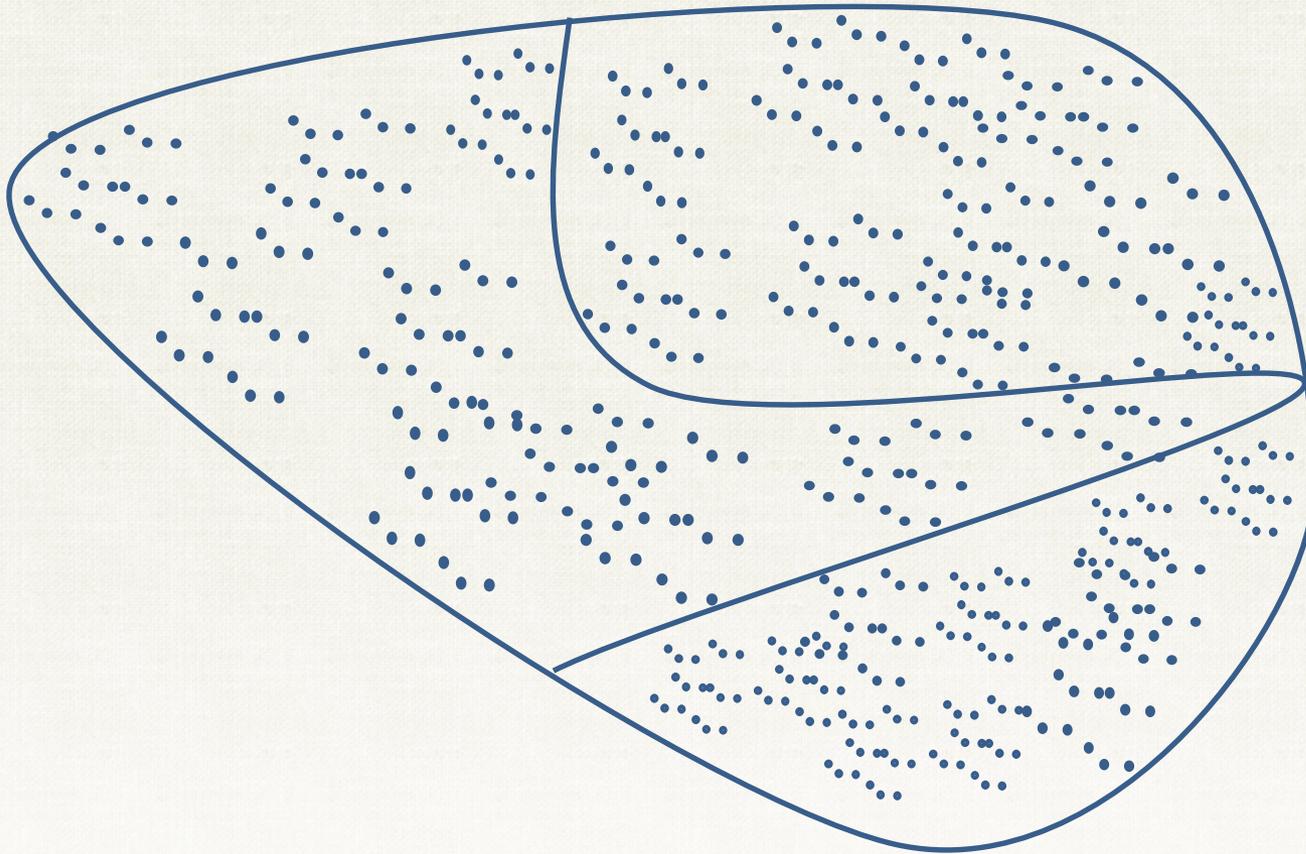
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**We want the sample to be  
representative at a district level.**



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# Sampling Guide for Beneficiary-based Surveys for Select Feed The Future Agricultural Annual Monitoring Indicators & Sample Size Calculator

<https://agrilinks.org/library/sampling-guide-beneficiary-based-surveys-select-feed-future-agricultural-annual-monitoring>



## Individual Application

Think about a FTF activity in which you will need to collect performance monitoring data

- Select one indicator on which you will collect data
- Do you need to disaggregate the data?
- If so, how will you disaggregate the data



## Lessons learned about:

- Planning the entire process of collecting data
- Diagramming indicators
- Developing questionnaires
- Measuring area
- Sampling



- Feed the Future Agricultural Indicators Handbook:  
[https://agrilinks.org/sites/default/files/resource/files/FTF\\_Agriculture\\_Indicators\\_Guide\\_Mar\\_2015.pdf](https://agrilinks.org/sites/default/files/resource/files/FTF_Agriculture_Indicators_Guide_Mar_2015.pdf)
- USGS Global Positioning Application and Practice:  
<http://water.usgs.gov/osw/gps/>
- GNSS in Africa : [http://www.gnss-africa.org/?page\\_id=23](http://www.gnss-africa.org/?page_id=23)
- [Measurement, Farm Size and Productivity \(LSMS-ISA/WorldBank\)](http://siteresources.worldbank.org/INTSURAGRI/Resources/7420178-1294259038276/Fact_Artifact_Brief.pdf)  
[http://siteresources.worldbank.org/INTSURAGRI/Resources/7420178-1294259038276/Fact\\_Artifact\\_Brief.pdf](http://siteresources.worldbank.org/INTSURAGRI/Resources/7420178-1294259038276/Fact_Artifact_Brief.pdf)
- The Humanitarian Data Exchange - Open Data Sources for the Global Development Community: <https://data.humdata.org/>
- Army Study Guide (How to Pace Count):  
[http://www.armystudyguide.com/content/army\\_board\\_study\\_guide\\_topics/land\\_navigation\\_map\\_reading/how-to-use-pace-count-to-.shtml](http://www.armystudyguide.com/content/army_board_study_guide_topics/land_navigation_map_reading/how-to-use-pace-count-to-.shtml)



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