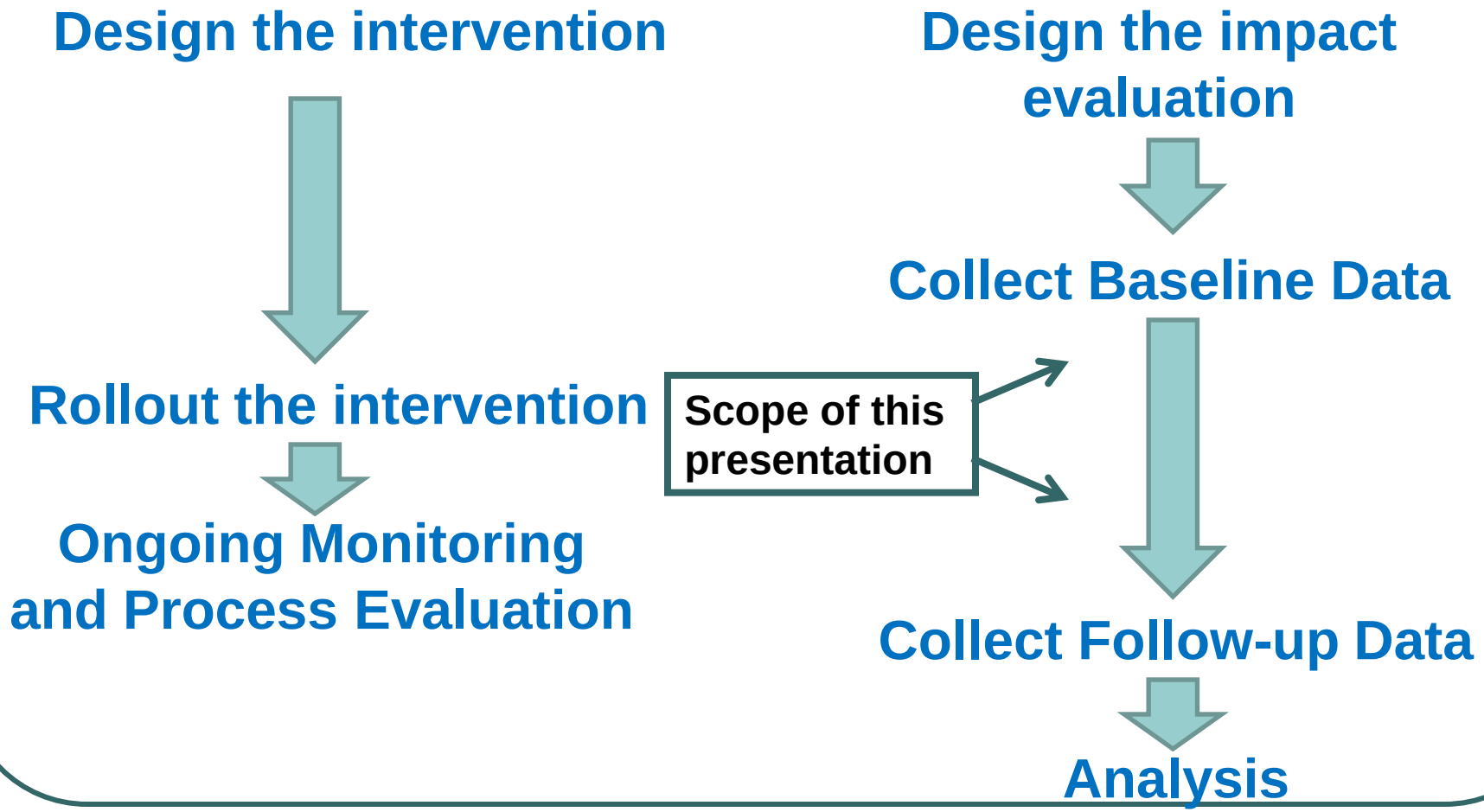
Survey Data Collection for Impact Evaluation

It's Not as Easy as We Might Think!

Adam Ross
Seoul, Korea
December 2010

Impact Evaluation Project Cycle



Assumptions of this presentation

1. We're planning a prospective impact evaluation
2. We need baseline and follow-up survey data on treatment and control group(s) to measure program impact*
3. We are going to collect our own data for the impact evaluation

* Process/implementation data should also be gathered throughout the intervention

Before collecting your own data

- Can we use existing data?
  - Regular surveys (census, DHS survey)
  - Regular monitoring (annual achievement tests)
  - Administrative records (health records, school enrollment)
- In many settings, administrative data is insufficient, poor quality and low coverage
  - Ex. Turkey vs. Argentina

Before collecting your own data

Who should collect?

- Bureau of Statistics: has capacity & good place to invest in further capacity
- University: maybe cheaper, often less infrastructure and thus more monitoring
- External firm: depends on capacity and experience

- When de we need to start?
  - Procurement, training and data collection all take time

Objectives of data quality control

To collect data that:

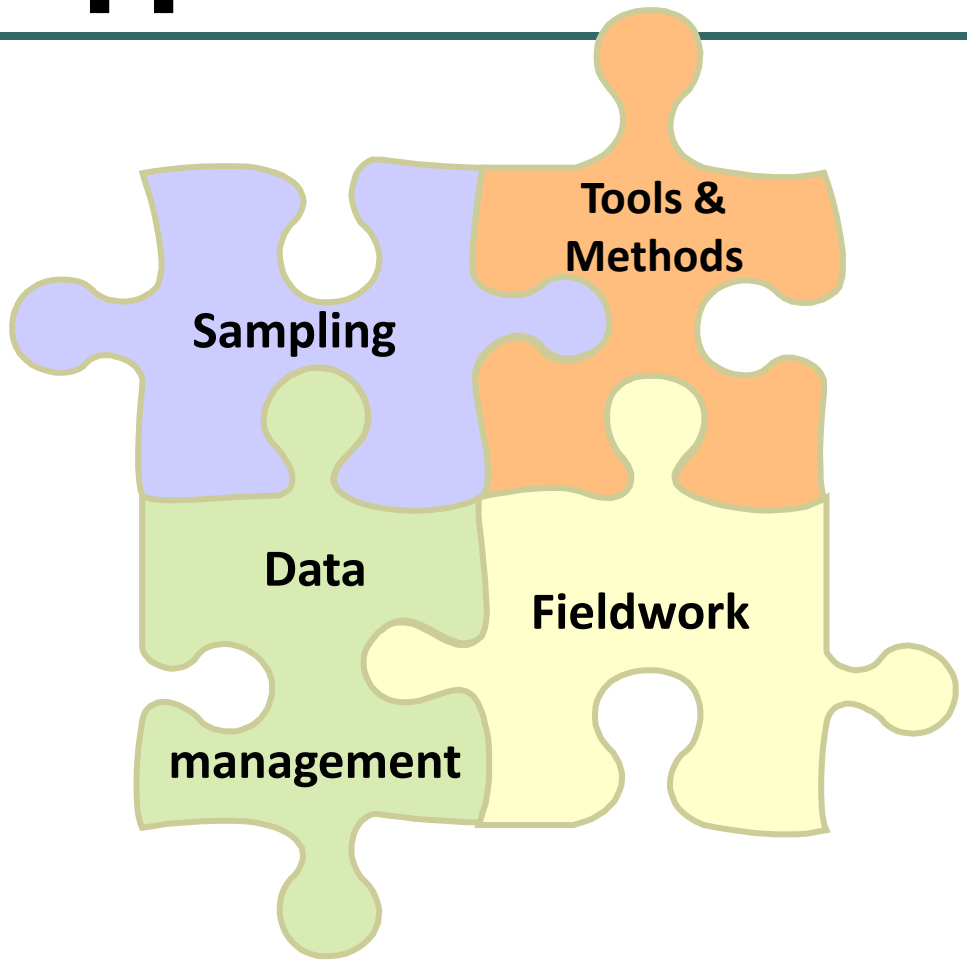
1. accurately reflects the reality of the population
2. is representative of the entire target population
3. allows policy makers and analysts to make real-time, informed decisions

⇒ Need to control sampling and non-sampling error!!!!

What are Sampling and Non-Sampling Error?

- **Sampling error:** the result of observing a sample of **n** households (the sample size) rather than all **N** households in the target population
- **Non-sampling error:** the result of errors in survey development and execution. Some examples are:
  - **measurement error -** when the answers written on the questionnaires are different from the actual values
  - **selection bias -** results from imperfections in the sample frame or deficiencies in the sample selection process
  - **non-response -** when we don't get an answer to some or all of our questions from certain households

The Total Survey Design (TSD) approach



Data Collection Plan

Includes:

1. Sampling
2. Tools and methods
   - questionnaires and instruments
3. Fieldwork
4. Data Management
5. Budget
6. Timeline of activities

1. Sampling

- Develop sample design - sample size and geographic distribution
- Get an updated sample frame and corresponding cartography
  - Local statistical office, Ministry of Health
- Do we have to generate a listing?
  - before the survey or in parallel?
- Compute sampling weights and sampling errors as necessary

2. Tools and Methods: Questionnaires

- What do you want to know?
  - Tailor your survey to capture outcomes of interest
- Use reliable and valid instruments
  - Be careful: what's reliable and valid in one cultural and linguistic context may not be so in another
  - Adapt it to the country specific reality and local language(s)
- Save time, money and pain: test your questionnaire!

Best Practices for Questionnaires

- Define your topics and concepts to avoid confusion
- Question order matters
- Keep it short and make it user-friendly
- Phrase questions clearly
- Use established techniques to minimize respondent mistakes (e.g. calendars for event histories)

Best Practices for Questions II

- A good question is understood consistently by all respondents
- A good question is administered consistently to all respondents
- A good question elicits the kind of answers the researcher wants:
  - **BadQ**: When did you move to Seoul, Korea?
    - A: In 1964
    - A: When I was 20 years old
    - A: After I finished college
  - **BetterQ**: In what YEAR did you move to Seoul, Korea?

Best Practices for Questions III

- A good question is one where the respondents have the necessary knowledge to answer
  - asking a good question of the wrong person is a source of error in your data
- A good question is one where the respondent is willing to provide the ‘true’ answer
  - difficult for sensitive questions

Best Practices for Questions IV

- Ask about first hand experience
- Ask one question at a time
  - **BadQ**: Are you physically able to do things like walk or carry a full water bucket without difficulty?
  - **BetterQ**: Are you physically able to carry a full water bucket without difficulty?

Who Are Your Respondents?

- Different respondents require different techniques, e.g. youth are a tough crowd:
  - Often mobile
  - Not always well informed
  - Require special consent procedures
  - Cagey about socially undesirable behavior
  - Can have low literacy levels

Best Practices for Sensitive Questions

- Use open questions for frequencies of undesirable behavior
- Design long questions but short instrument
- Use familiar words (know local terms)
- Ask ‘have you ever done x’ before asking ‘are you currently doing x’ for socially undesirable behavior
- Embed threatening questions in a list of more or less threatening topics

How Will You Capture the Data?

- Self Administered Questionnaire (SAQ)
- Telephone (CATI,RDD)
- Paper and pencil (PAPI)
  - Data entry
  - Scannable forms
- Computer Assisted Personal Interview (CAPI)
- Audio Computer Assisted Self Interview (ACASI)

Questionnaire Development

- The survey researchers' axiom:
  - Everyone thinks they can design a questionnaire
- Include an experienced survey research organization in the development of your questionnaire
- Begin with examples of successful questionnaires fielded in similar settings

Questionnaire Testing

- Evaluate your questions
  - Conduct focus groups
  - Conduct cognitive testing
- Evaluate your questionnaire and procedures
  - Conduct full field pretest
- Revise questionnaire and procedures

3. Fieldwork: Staffing and training

- Interviewer staffing and training is directly related to data quality
- Recruit supervisors, interviewers and data entry operators very carefully
- All materials must be finalized before training begins:
  - Training materials
  - Field manuals
  - Questionnaires
  - data-entry program

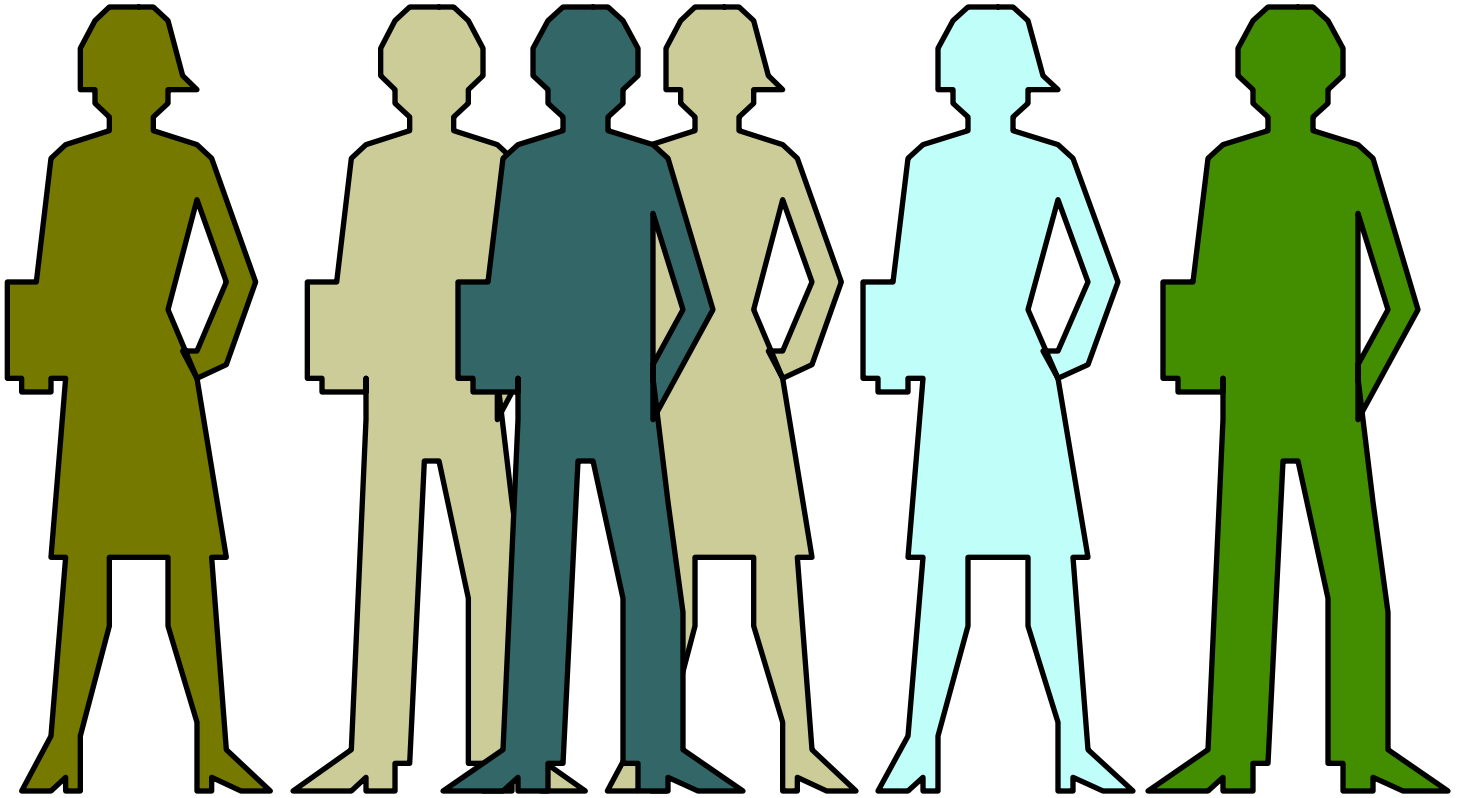
Train interviewers thoroughly

- Training should have four main elements
  1. plenary sessions: introduction and lectures
  2. practical work in small groups:
     - simulated interviews, role playing, interpreting inconsistencies, etc.
  3. practice fieldwork
  4. candidate assessment
- High-quality training takes time
  - Plan to spend roughly 2-4 weeks depending on questionnaire complexity
  - This is often underestimated

Field Management for Quality Data

- Maximize response rates:
  - Schedule visits sensibly
  - Follow up with non-respondents
  - Consider incentives
  - Gather locating data for follow up
- Use “Field Team” approach for data collection
- Employ Computer Assisted Field Entry (CAFÉ)

Composition of a “Field Team”

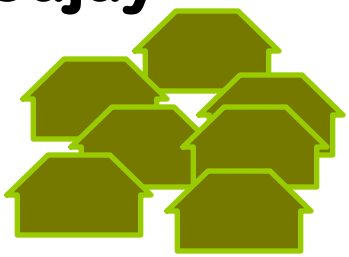


Field Management

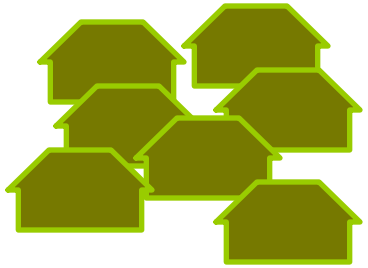
Mobile teams with integrated data entry

Salta

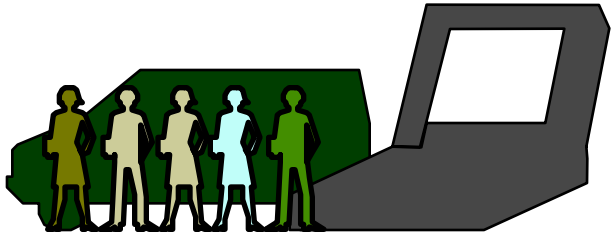
Jujuy



Entre Rios



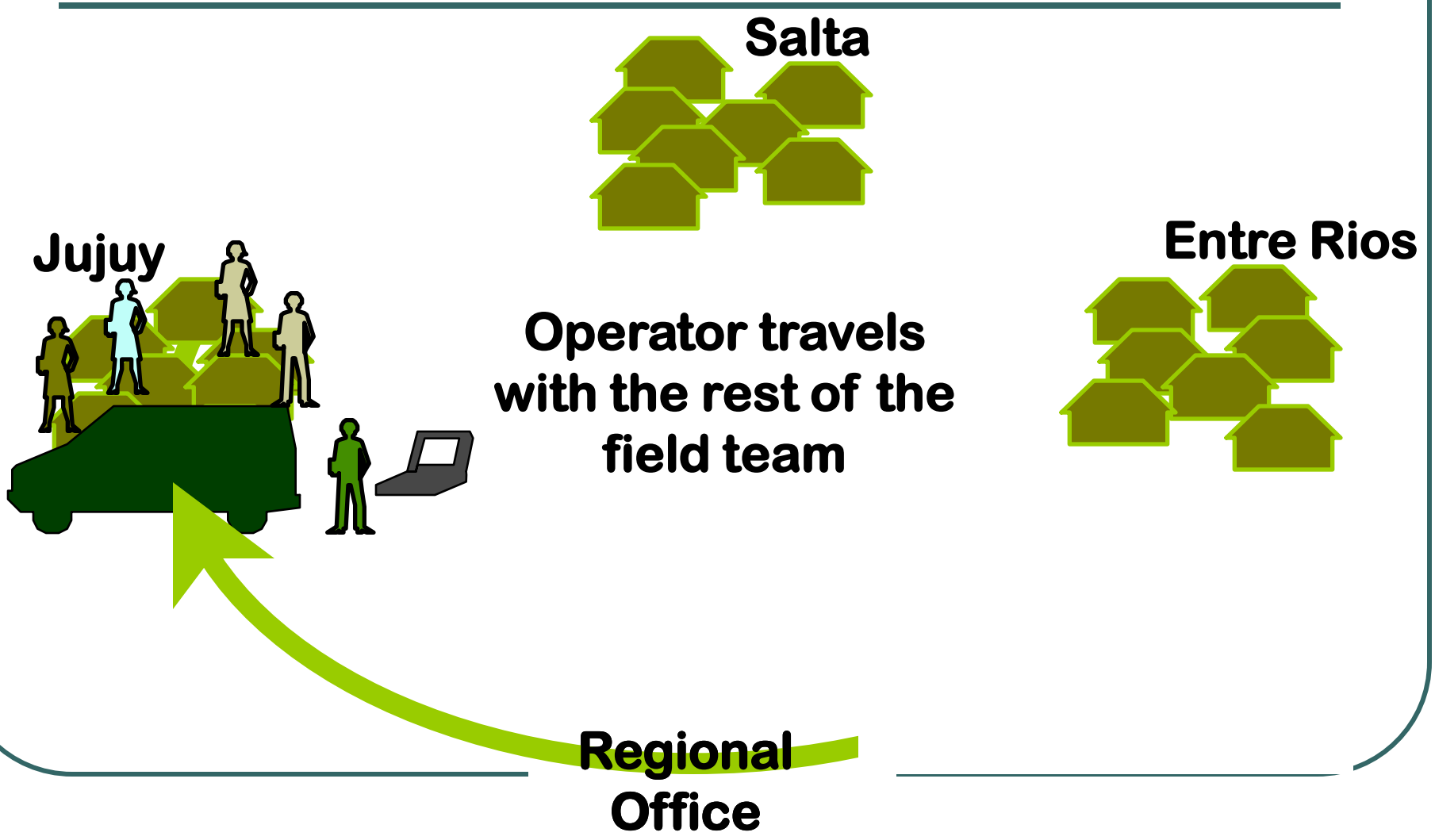
Team works with portable computers and printers



Regional Office

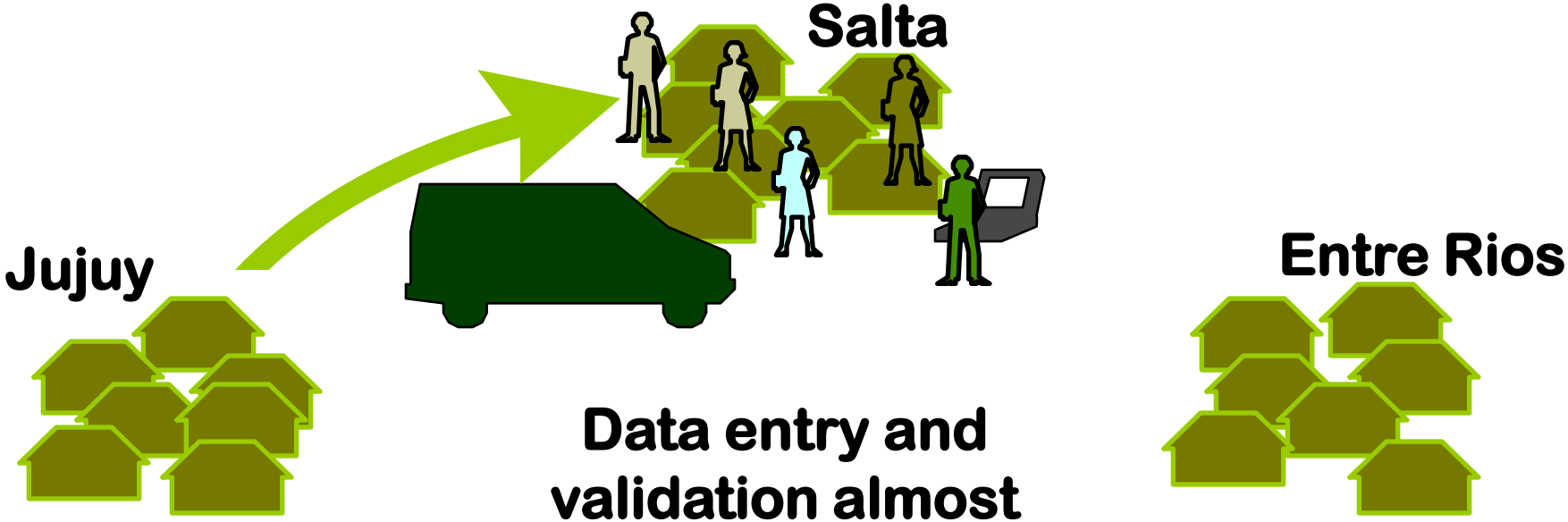
Field Management

Mobile teams with integrated data entry



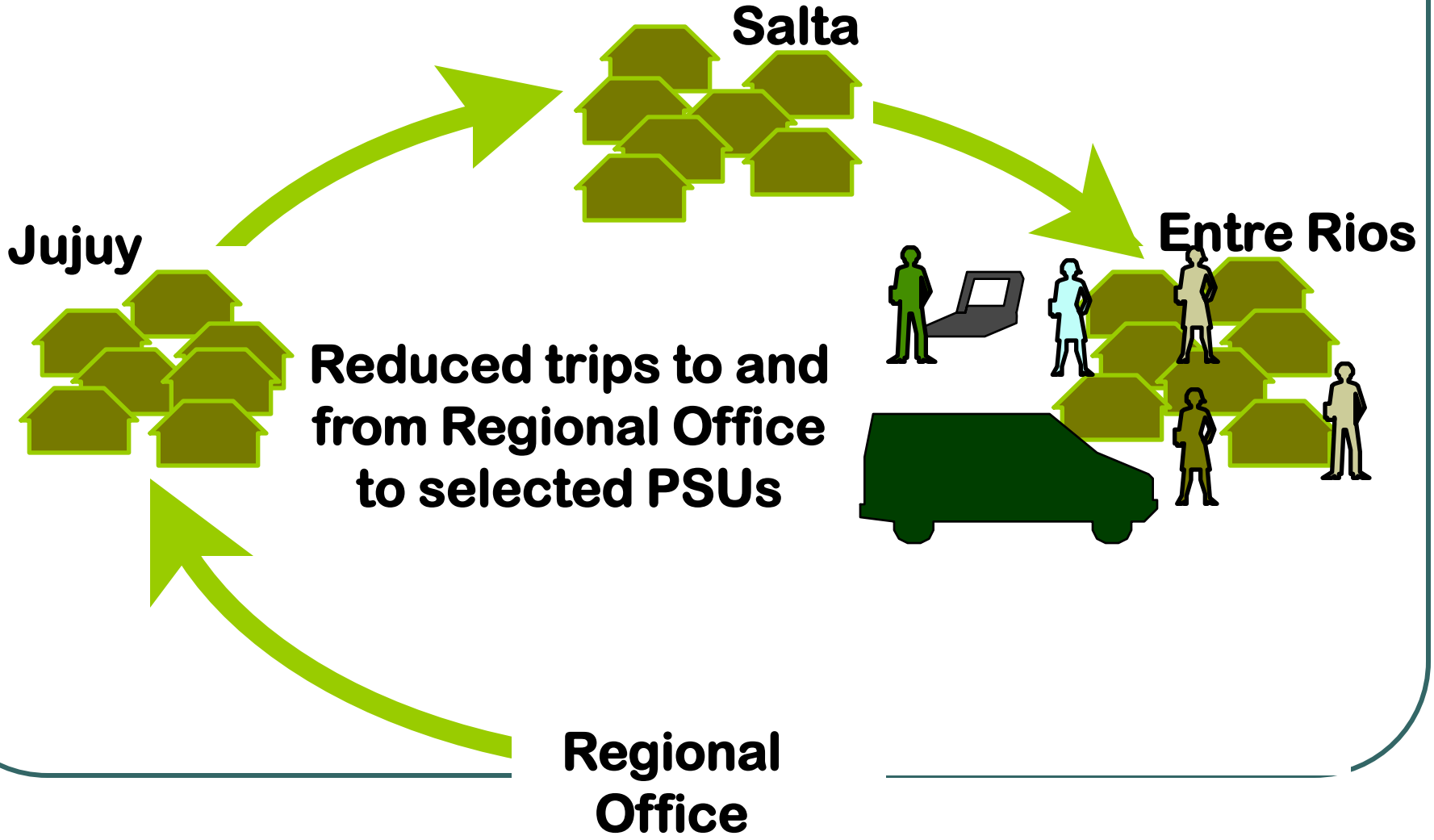
Field Management

Mobile teams with integrated data entry



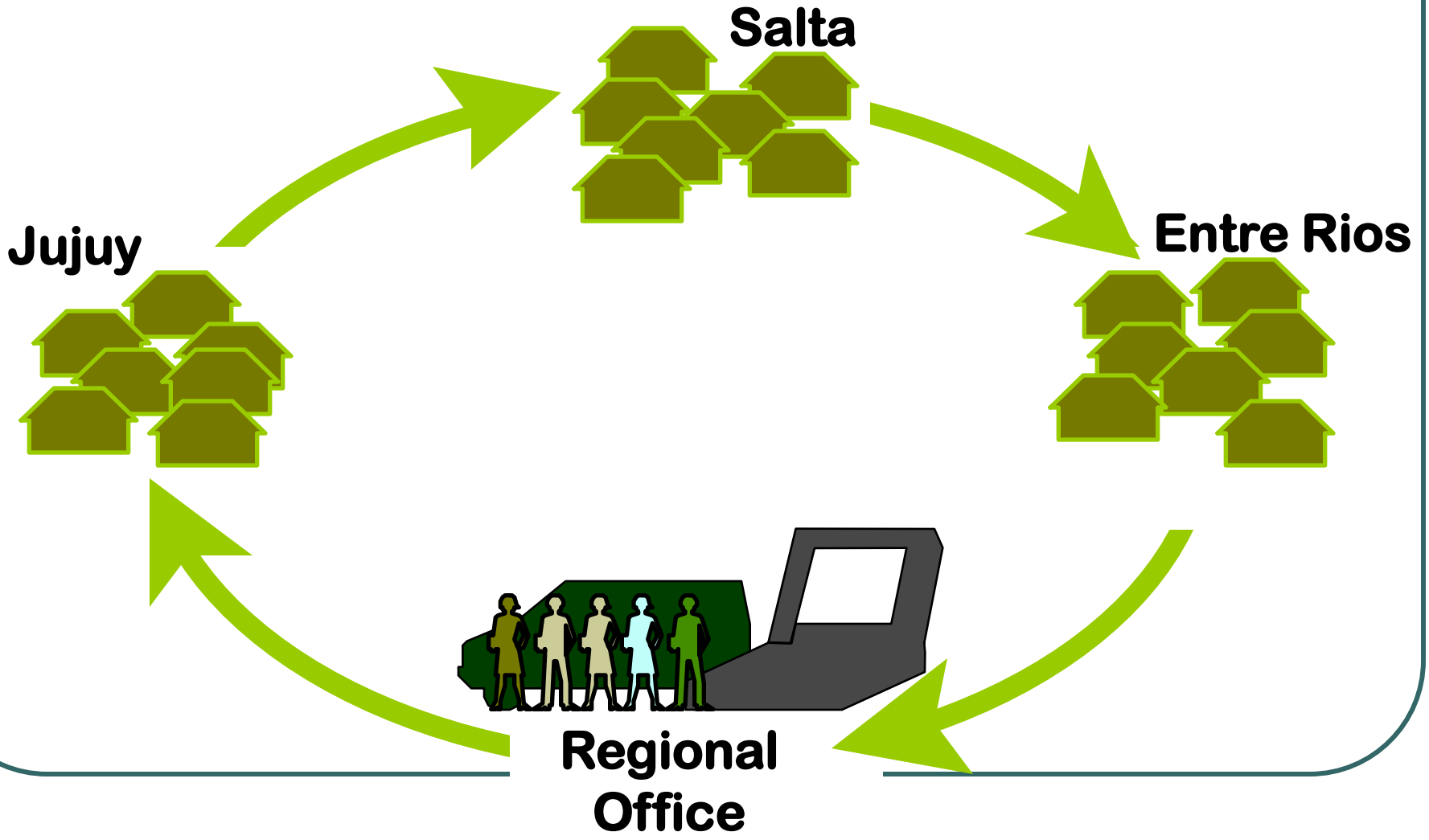
Field Management

Mobile teams with integrated data entry



Field Management

Mobile teams with integrated data entry



Computer-Assisted Field Entry (CAFÉ)

- provides immediate feedback on the performance of the field staff
- allows early detection of any inappropriate behavior
- enables inconsistencies to be corrected at their source by re-visiting the HH, rather than ex-post “data cleaning” based on assumptions

4. Data Management

- Develop a data entry program that includes quality control checks
- Include data management procedures that emphasize confidentiality
  - Remove unique identifiers when transmitting and storing the data
- Monitor your sample carefully using frequent supervision reports

Monitor and assess the quality of fieldwork

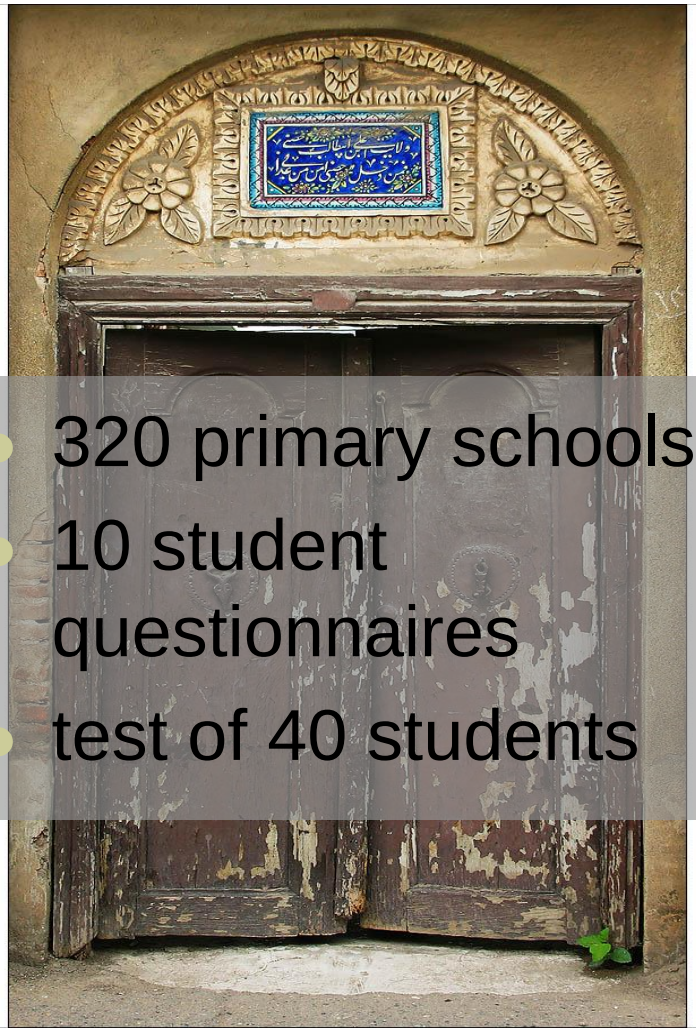
Survey Month	Households reporting illnesses, accidents (Q407)	Households reporting chronic deseases (Q401)	Households reporting agricultural activities (Q901)	Number of crops reported (Q911)	Households reporting livestock activities (Q918)	Households reporting fishing activities (Q924)	Total Nb of durables (Section 12)	Nb of HH having credit (Section 13)	HH size mean	Number of lines with food consumption
1	1,645	705	572	1,352	563	17	9,538	1,017	7.8	95,687
2	1,552	624	503	1,299	530	13	8,853	957	7.5	99,491
3	996	577	507	1,421	502	12	9,818	910	7.6	96,028
4	898	642	486	1,469	504	25	9,301	880	7.9	96,139
5	816	545	436	1,243	464	3	9,180	811	7.1	97,094
6	691	513	477	1,442	465	23	9,667	841	7.5	97,315
7	625	529	465	1,338	494	26	9,621	738	7.5	108,432
8	658	498	439	1,264	433	17	9,437	707	7.3	100,888
9	769	552	433	1,244	428	11	9,584	740	7.2	98,893
10	858	534	468	1,227	436	25	9,224	719	7.4	98,415
11	743	517	399	1,165	411	10	9,294	737	7.2	97,138
12	693	464	356	1,133	440	25	9,722	705	7.1	96,052

5. Budget

- Survey data collection can be expensive
  - BUT it isn't as expensive as carrying out programs that are not effective.
- The long term savings of conducting a thorough impact evaluation with quality data collection can be immeasurable in social terms
- High quality data is vital to conducting an effective impact evaluation

How much is this going to cost?

[hint: quite a bit]

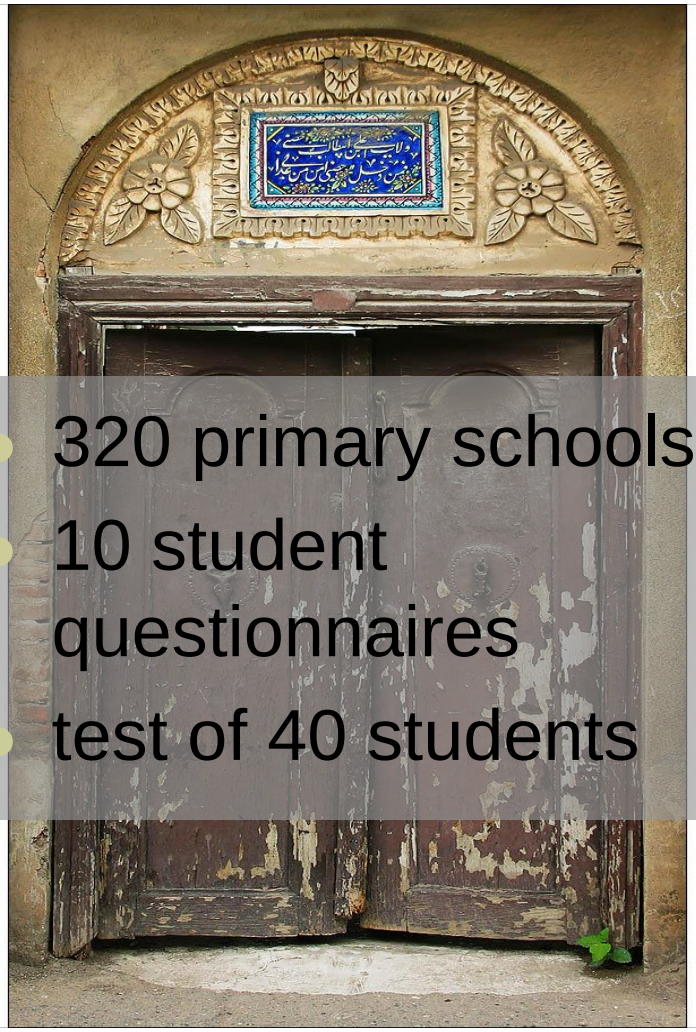


- 320 primary schools
- 10 student questionnaires
- test of 40 students

- 1,000 primary schools
- head teacher questionnaire
- teacher questionnaire

How much is this going to cost?

[hint: quite a bit]



- 320 primary schools
- 10 student questionnaires
- test of 40 students

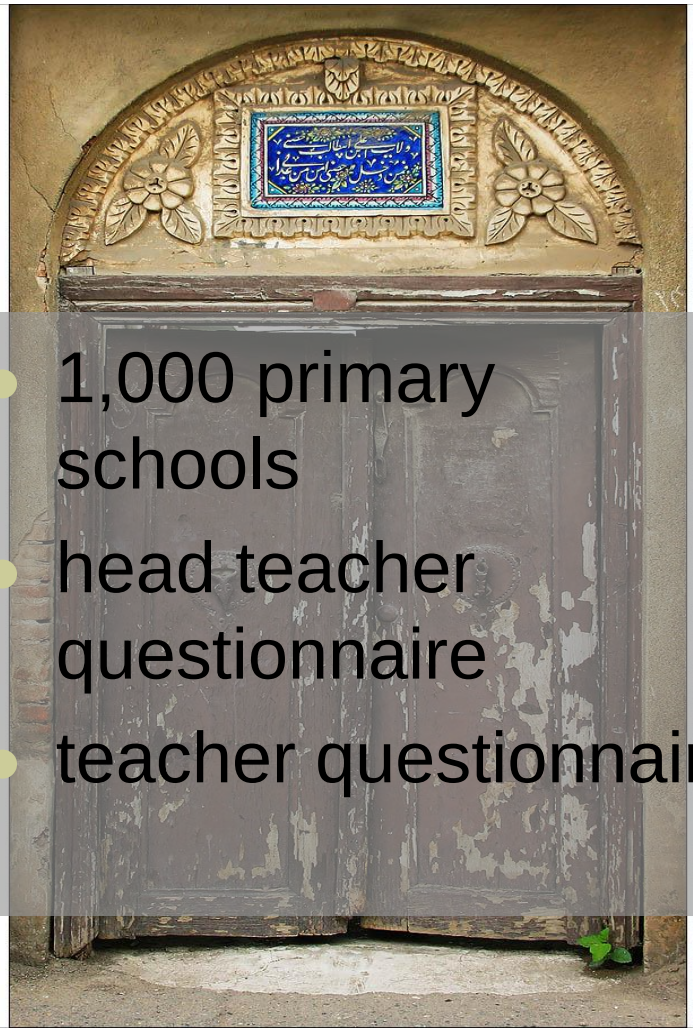
USD

$200,000

How much is this going to cost?

[hint: quite a bit]

USD $50,000



- 1,000 primary schools
- head teacher questionnaire
- teacher questionnaire

Large variations in cost

320 schools

- USD $200,000

1,000 schools

- USD $50,000

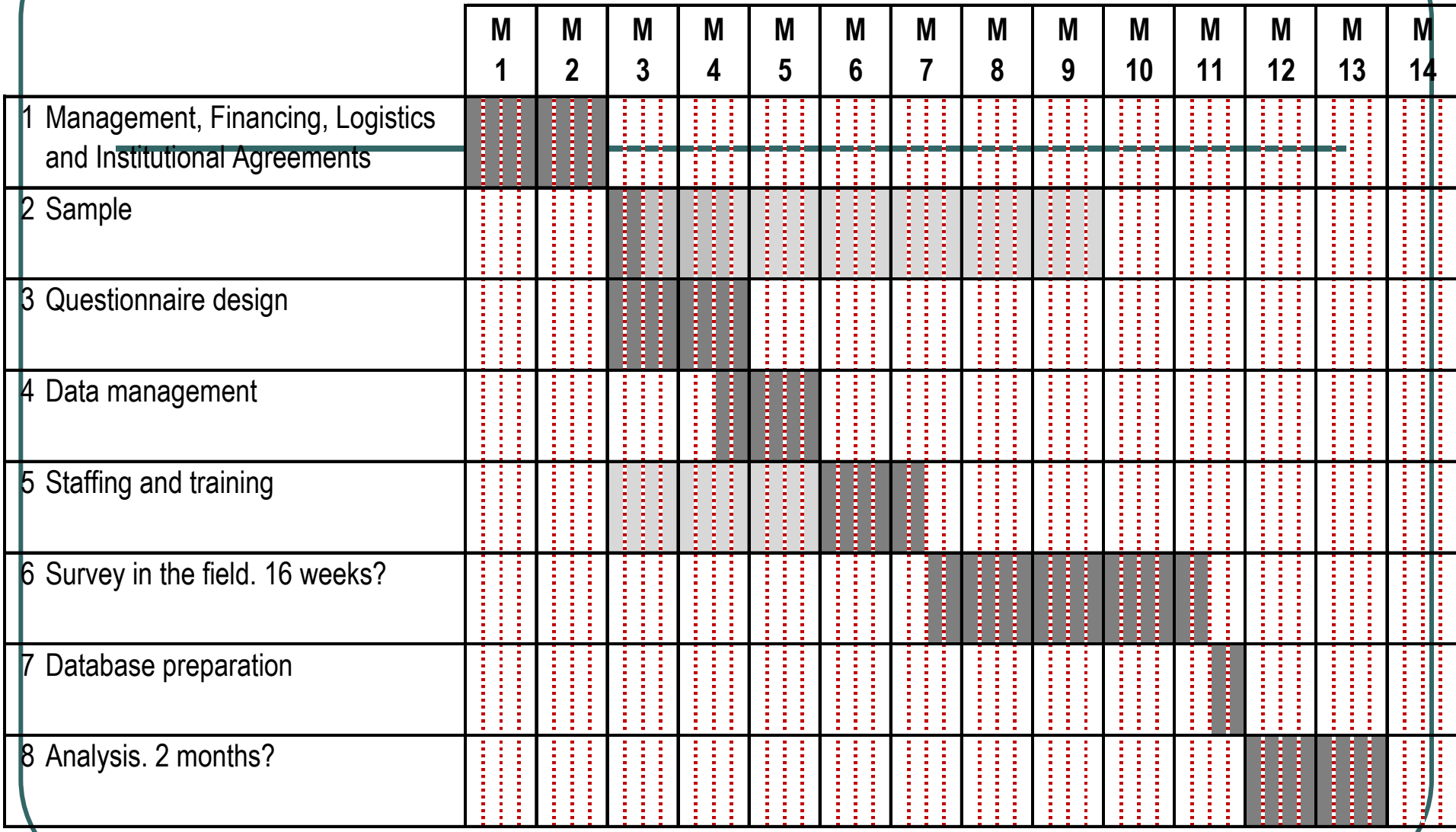
Big differences!

- Scale of survey
- Size of country
- Labor costs
- Difficulty in getting to schools

Household surveys: More expensive

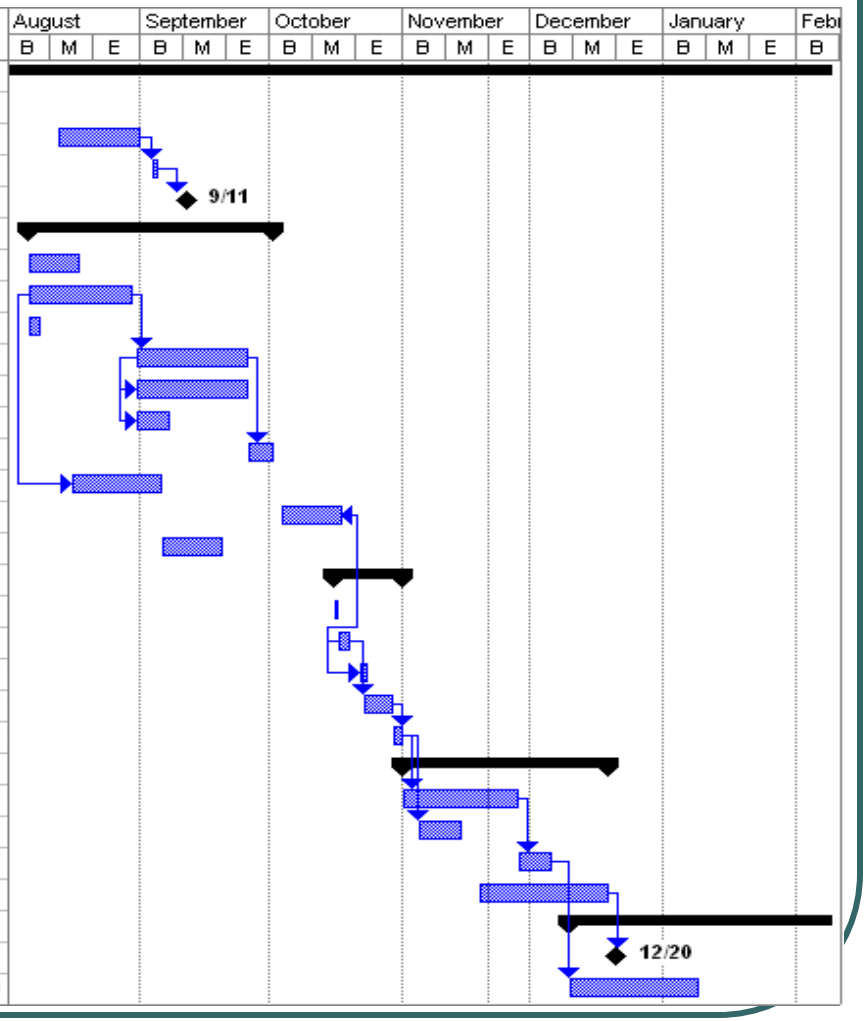
6. Timeline: Quality data collection takes time

Activity	Timing Needed
1. Procurement	2-4 months
2. Development of Sample	Depends on sample design and availability of sample frame
3. Adapt and test questionnaire to the local conditions	4-6 weeks
4. Staffing and training	2-4 weeks for recruitment and selection, 2-4 weeks for training
5. Data management	4-6 weeks
6. Data Collection	2+ months


M 1
M 2
M 3
M 4
M 5
M 6
M 7
M 8
M 9
M 10
M 11
M 12
M 13
M 14
1 Management, Financing, Logistics and Institutional Agreements
2 Sample
3 Questionnaire design
4 Data management
5 Staffing and training
6 Survey in the field. 16 weeks?
7 Database preparation
8 Analysis. 2 months?

Sample Project Plan: 30 minute PAPI

Task Name	Duration	Start	Finish
Baseline PAPI Survey for training program	**172 days**	**Mon 6/11/07**	**Fri 2/8/08**
Questionnaire design (client activity)	***45 days***	***Mon 6/11/07***	***Fri 8/10/07***
Review of questionnaire (near-ready quex)	15 days	Mon 8/13/07	Fri 8/31/07
Comments to client	1 day	Tue 9/4/07	Tue 9/4/07
Final questionnaire ready for formatting	0 days	Tue 9/11/07	Tue 9/11/07
Operational planning	**41 days**	**Mon 8/6/07**	**Mon 10/1/07**
design interviewer hiring plan	10 days	Mon 8/6/07	Fri 8/17/07
design registration procedures	18 days	Mon 8/6/07	Wed 8/29/07
specify supervisor tasks	3 days	Mon 8/6/07	Wed 8/8/07
create interviewer manual	18 days	Fri 8/31/07	Tue 9/25/07
create supervisor manual	18 days	Fri 8/31/07	Tue 9/25/07
create registration personnel manual	6 days	Fri 8/31/07	Fri 9/7/07
create training agenda	4 days	Wed 9/26/07	Mon 10/1/07
design handling of instruments	15 days	Thu 8/16/07	Wed 9/5/07
Interviewer recruitment	10 days	Thu 10/4/07	Wed 10/17/07
Institutional Review Board submission & appro	10 days	Thu 9/6/07	Wed 9/19/07
Training	**13 days**	**Tue 10/16/07**	**Wed 10/31/07**
Registration personnel training	1 day	Tue 10/16/07	Tue 10/16/07
Interviewer training	3 days	Wed 10/17/07	Fri 10/19/07
Validation of questionnaire in field (with ir	2 days	Mon 10/22/07	Tue 10/23/07
Changes to instruments	5 days	Tue 10/23/07	Mon 10/29/07
Materials printing	2 days	Tue 10/30/07	Wed 10/31/07
Data Collection	**32 days**	**Thu 11/1/07**	**Tue 12/18/07**
Data Collection major city	17 days	Thu 11/1/07	Tue 11/27/07
Data Collection minor city	8 days	Mon 11/5/07	Wed 11/14/07
Data Collection minor city	6 days	Wed 11/28/07	Wed 12/5/07
Data Entry (registration data)	20 days	Mon 11/19/07	Tue 12/18/07
Data and report delivery	**43 days**	**Mon 12/10/07**	**Fri 2/8/08**
preliminary data delivery of registration da	0 days	Thu 12/20/07	Thu 12/20/07
baseline survey data cleaning and recodi	20 days	Mon 12/10/07	Tue 1/8/08



Quality Data Collection: Key Takeaways

1. Pretest data collection plan and questionnaires, leaving time for adjustments
2. Select interviewers carefully, train them thoroughly and evaluate them dutifully
3. Use “Field Team” approach and CAFÉ when possible

Quality Data Collection: Key Takeaways

4. Data collection is expensive: choose your mode and sample sizes wisely
5. Build a realistic timeline with sufficient time for questionnaire development, testing, training and adjustments