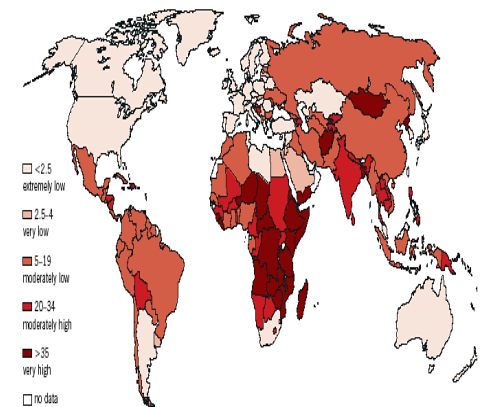




**Survey of Well-being via
Instant and Frequent Tracking**



Pioneering a New Era of Welfare Monitoring

What is SWIFT?

What is SWIFT

- **SWIFT** (Survey of Well-being via Instant and Frequent Tracking) is a **new household survey instrument**
- **SWIFT** is designed for producing welfare indicators in a **cost-effective, timely, and user-friendly** manner
- **SWIFT** can be used to measure the **welfare impact of projects and increasing frequency of poverty**
- **SWIFT** is being implemented in **14 countries for 20 surveys**

Why SWIFT?

NEWS

June 16, 2015

<https://spark.worldbank.org/groups/poverty/projects/swift>

Poverty GP Seminar

News Briefing

Poverty GP launches SWIFT Data Collection Tool

In response to concerns on data scarcity, the World Bank's Poverty Global Practice, has launched its new Welfare Monitoring Device, SWIFT (Surveying Wellbeing via Instant, Frequent Tracking).

SWIFT Seminar

June 16, noon



Nobuo Yoshida, (Senior Economist, Poverty GP, nyoshida@worldbank.org)

Where Are Those Most In Need?

In the wake of the latest revolutionary movement in Country X, the newly empowered government is scrambling to alleviate citizens' most pressing concerns. One of these, indeed, the reason for much of the political turmoil in the first place, is addressing the needs of the poorest and most vulnerable. The latest available estimates put the percentage of those living on \$1.25/day or less at a staggering 40%.

Where are they?

There is only one problem, Country X's latest usable data point, from its 2005 census, is nine years old. Since then, the country has experienced four different governments, three major droughts and been entangled in a major conflict with its northern neighbor. In targeting terms, this is about as useful as a chimpanzee throwing darts at a map.



Taking Too Long

Adding a new data point is extremely expensive and time consuming. Foreign experts and the local Statistics Department have said such a survey would require months of work, a large number of personnel and about \$1 million in funding. By the time any such survey is implemented and analyzed, untold numbers will have suffered. In addition, particularly given the recent volatile history of the country, the

situation on the ground could have changed completely. Poor people may have moved to find jobs in other places, a new government with different interests could be in place, tracts of land could be rendered unusable by drought or flood. All of this would lead us right back to the chimpanzee scenario.

The Need for Quick but Accurate Data

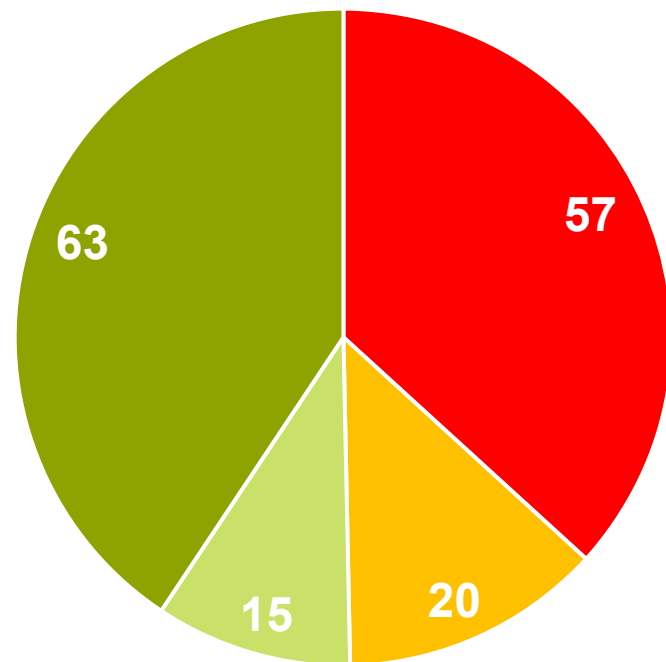
Without a more effective method of data collection, Country X's vicious cycles are doomed to repeat themselves. Even with the best of intentions, policies will continue to be based on political interests and gut feelings rather than hard facts, the poor will continue to receive little to no help and, consequently, a huge amount of human capital and development potential will be squandered.

There is enough food produced in the world to feed everybody multiple times over. However, if we do not know who they are and where they live, we will be [go to p. 7....].

Poverty Data are **Limited**

- Country Level Poverty Statistics are limited
- Almost half of countries have some problems in regular poverty monitoring
- 57 countries have only one or zero poverty estimates in 10 years
- The situation for project monitoring is even worse

Availability of poverty data in the last 10 years (2002-11)



■ 0 - 1 ■ 2 but irregular ■ 2 and regular ■ 3+

Comparison between Traditional Poverty Data Collection and **SWIFT**

Collection of consumption data



COSTLY (\$1 million or more)



SLOW (>1 year for processing)



COMPLEX

SWIFT Monitoring



CHEAPER (<1/10th)



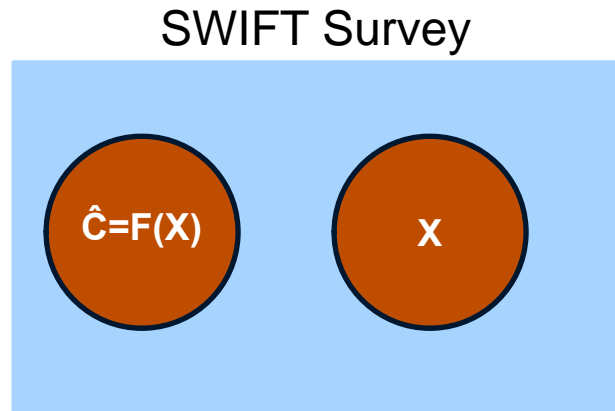
TIMELY (<10 min for processing)



USER-FRIENDLY
(automated system)

How SWIFT Works?

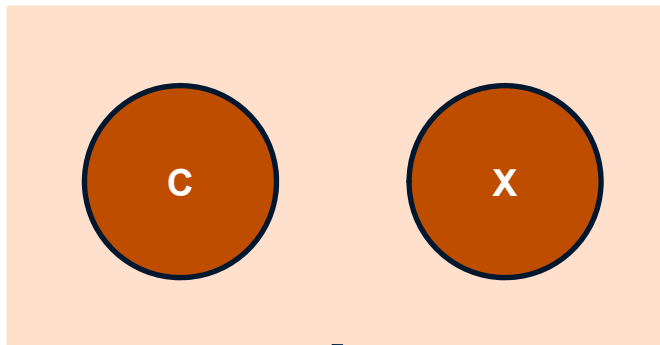
SWIFT Survey



- SWIFT survey does not collect consumption or income directly
- SWIFT collects 15 to 20 simple questions (X) that are highly correlated with household income or expenditure
- SWIFT converts responses to the questions to household income/expenditures using a formula

How does **SWIFT** work? (1)

LSMS or HBS



Develop projection
model (regress C on X)



$$\underline{C=F(X)}$$

C: Consumption

X: Household variables (e.g. education, employment)

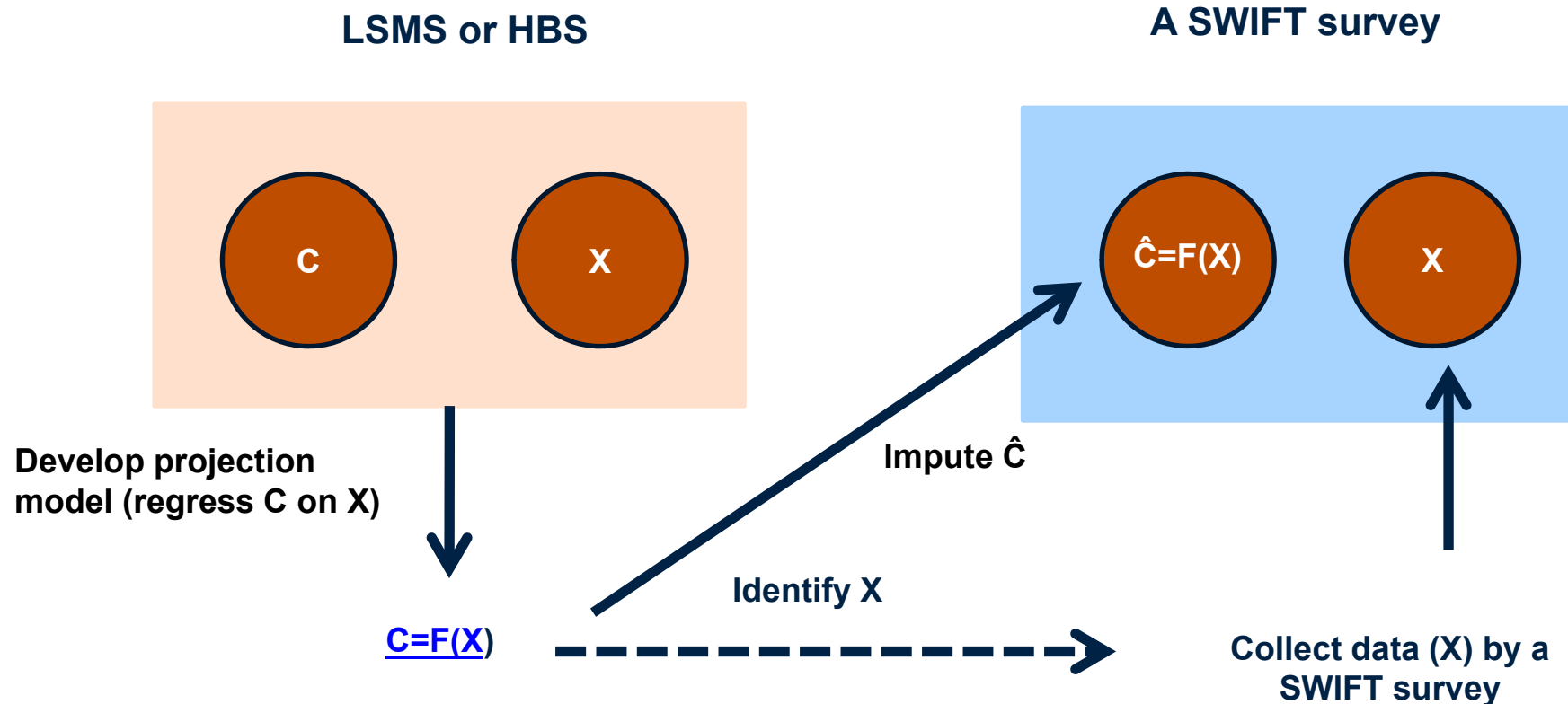
$\hat{C}=F(X)$: Projected Consumption data

A typical formula (F(X))

Variables	2010 Rural model	
	Coef.	Std. Err.
Intercept	16.87	0.06
Household size	-0.22	0.02
Household size ²	0.01	0.00
Dependency ratio	-0.77	0.16
Dependency ratio ²	0.52	0.17
Head: Male	0.10	0.03
Head: Grades enrolled ²	0.00	0.00
Cooking: coal/wood	0.21	0.03
Own: Car	0.32	0.09
Own: TV	0.10	0.03
Own: Vent	0.12	0.04
Me-Zochi dist.	0.15	0.04
Cantagalo dist.	0.21	0.07

In the case of Sao Tome Principe, we needed only 10 variables to get adj R2=40%

How does **SWIFT** work? (2)



C: Consumption

X: Household variables (e.g. education, employment)

$\hat{C}=F(X)$: Projected Consumption data

Simulation stage

- ▶ Simulate HH expenditure for each household in Census
 - ▶ Randomly drawing coefficients (○) and errors (○) from the estimated distributions

$$\ln y_h = \alpha + \beta_1 * x_{1h} + \beta_2 * x_{2h} + \dots + \beta_k * x_{kh} + \varepsilon_h$$

- ▶ Simulation is repeated 20 - 100 times
 - ▶ Compute poverty headcount rates using the simulated HH expenditures for each round
 - ▶ Average poverty rates as poverty rates
 - ▶ Standard errors of the poverty rates are estimated from the distribution of poverty rates
 - ▶ Use software

Illustration of the simulation stage

Example: Total number of households=4,532; Poverty line=300

HHNO	Simulated values (rounds)					
	1 rd	2 rd	3 rd	4 rd	...	100 rd
1						
2						
3						
4						
5						
6						
...						
4,532						
Poverty rate						
Poverty line	<div> <div></div> <div>Poverty rate = Average Poverty rate = <div></div></div> </div>					



The use of new ITS

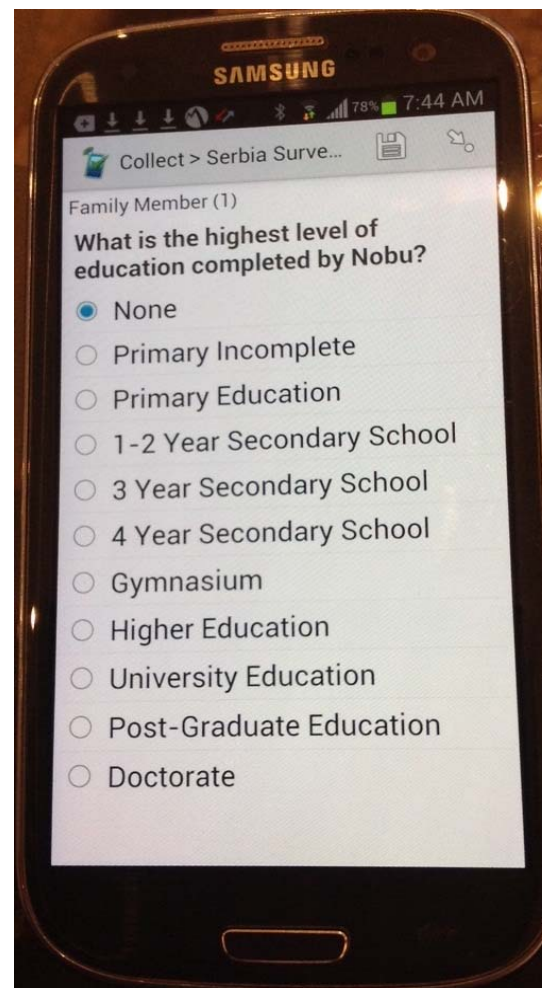
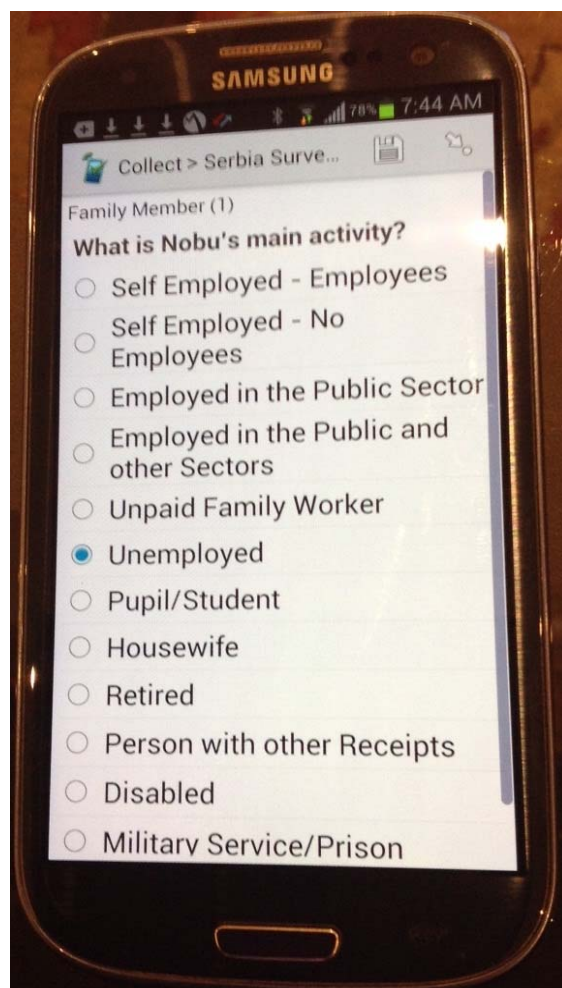
To improve user-friendliness of SWIFT

Combining CAPI, Data Cloud and Formula



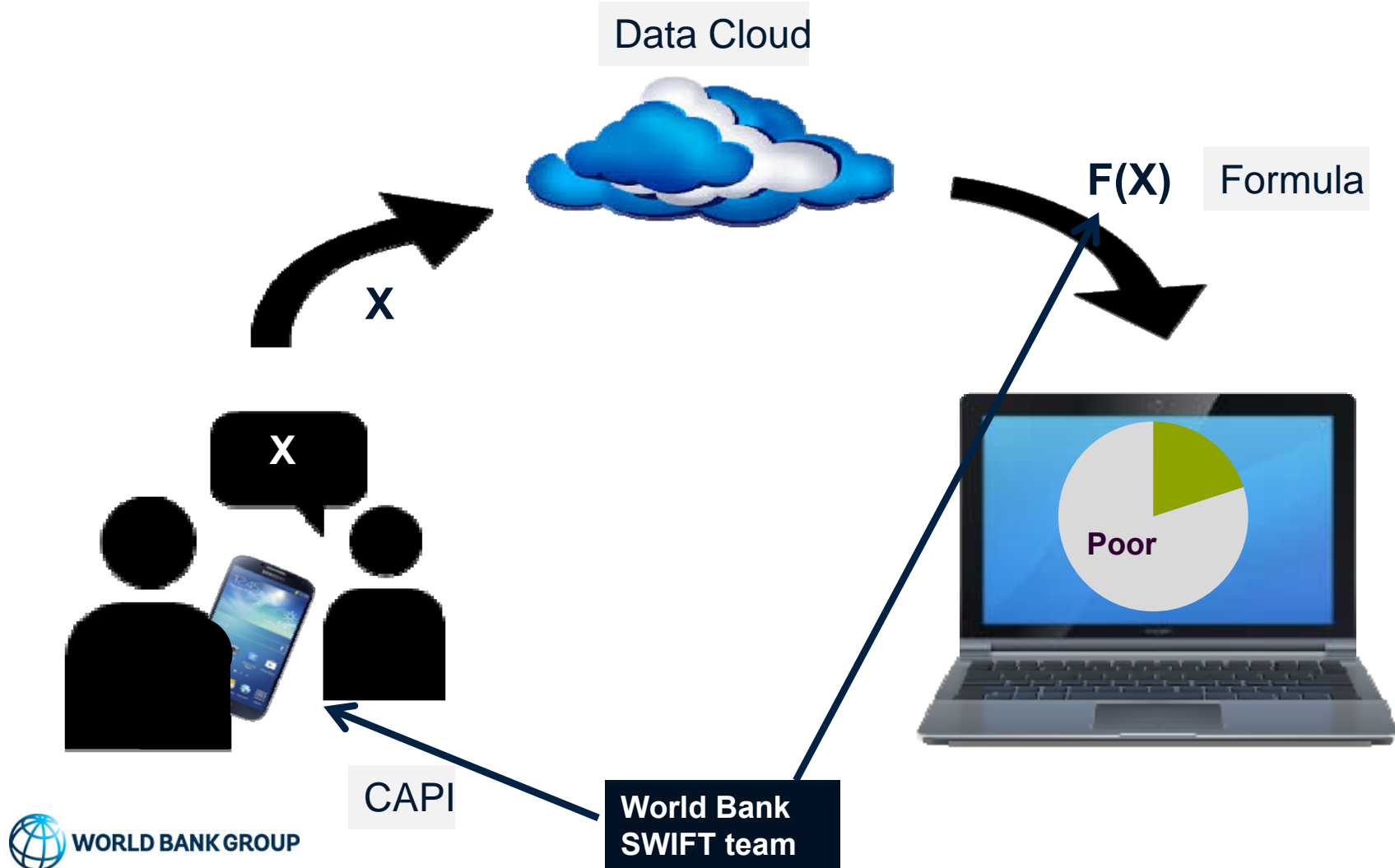
CAPI

An Example of a Computer Assisted Personal Interview (CAPI) questionnaire

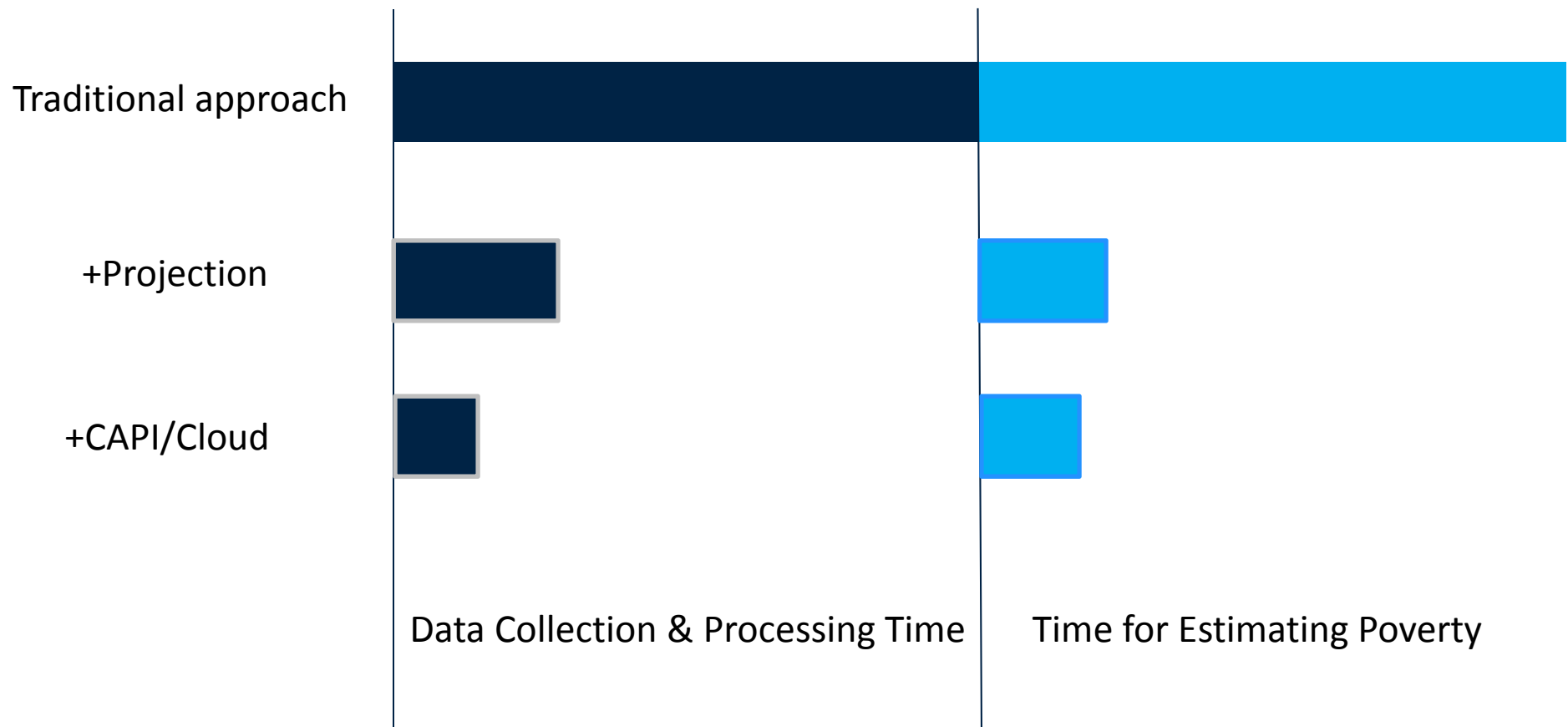


To improve user-friendliness of SWIFT

Combining CAPI, Data Cloud and Formula



Benefits of Projection and ITS

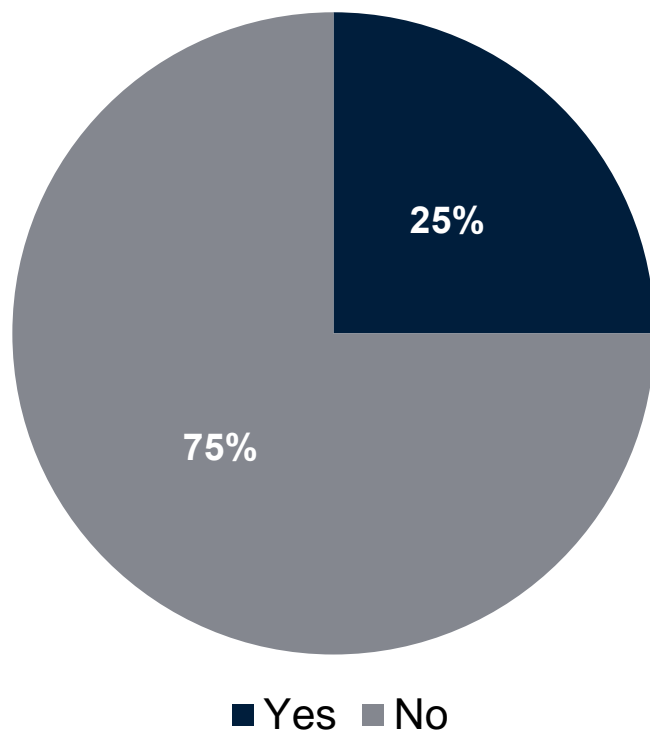


How SWIFT Can be Used?

► SWIFT for monitoring the **distribution and poverty impact**

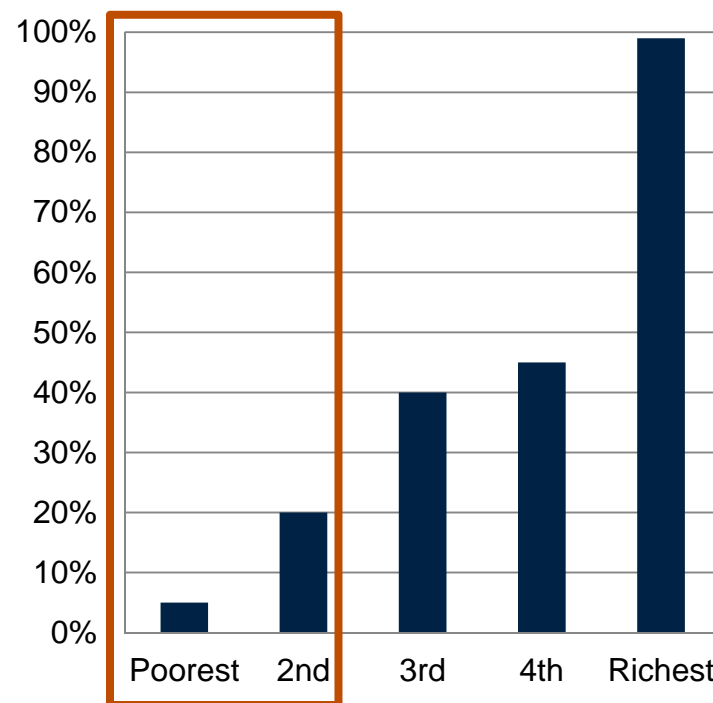
Project Benefit Analysis without SWIFT

Overall Electricity Access (Before)



Project Benefit Analysis with SWIFT

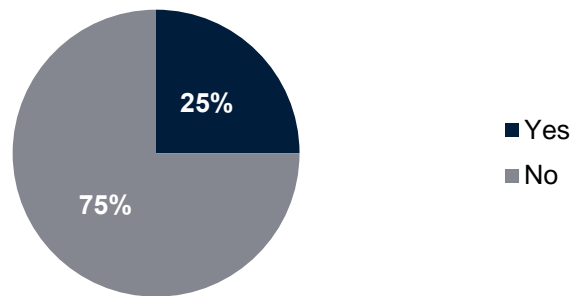
Electricity Access by Quintile (Before)



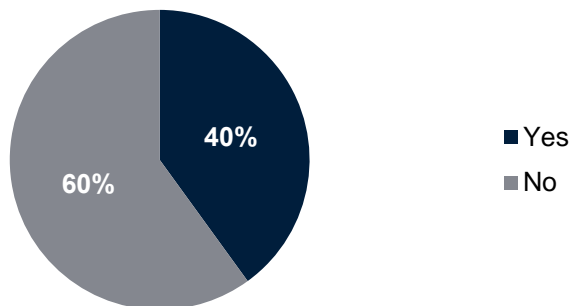
► SWIFT for tracking the **project impact** through multiple rounds of SWIFT

Project Benefit Analysis without SWIFT

Overall Electricity Access (Before)

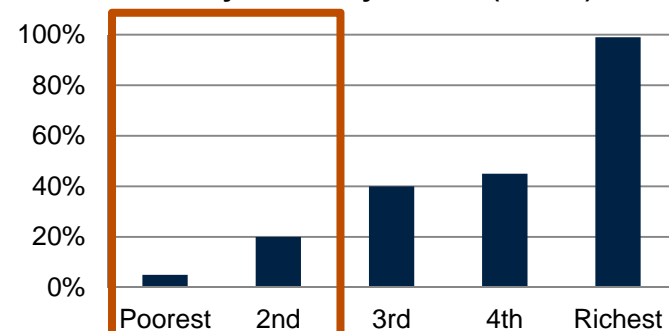


Overall Electricity Access (After)

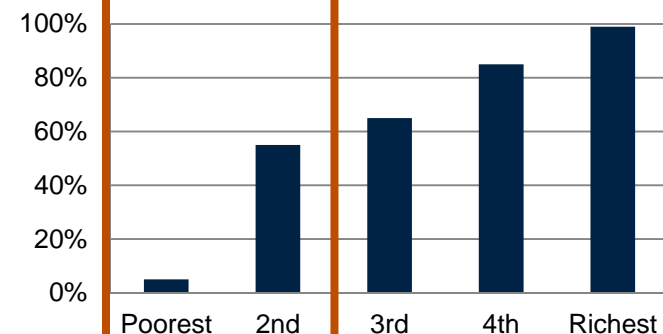


Project Benefit Analysis with SWIFT

Electricity Access by Quintile (Before)

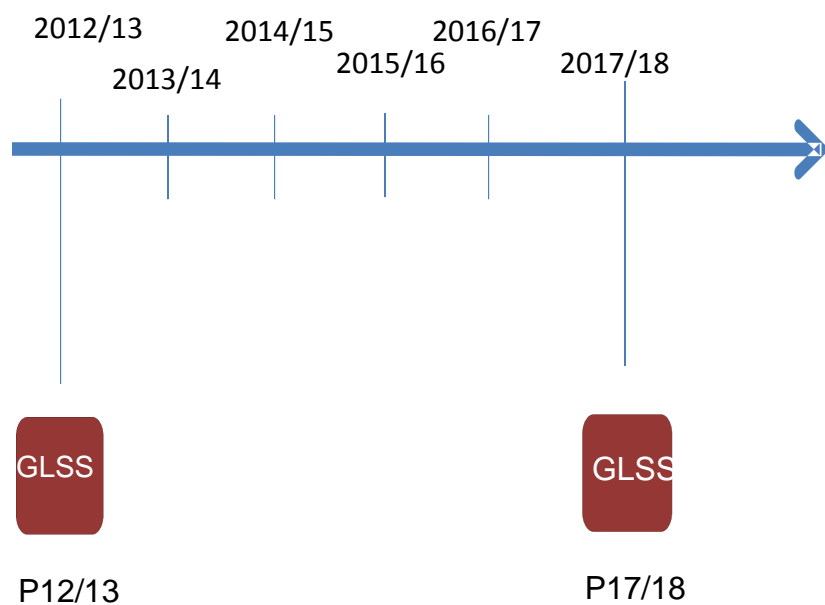


Electricity Access by Quintile (After)

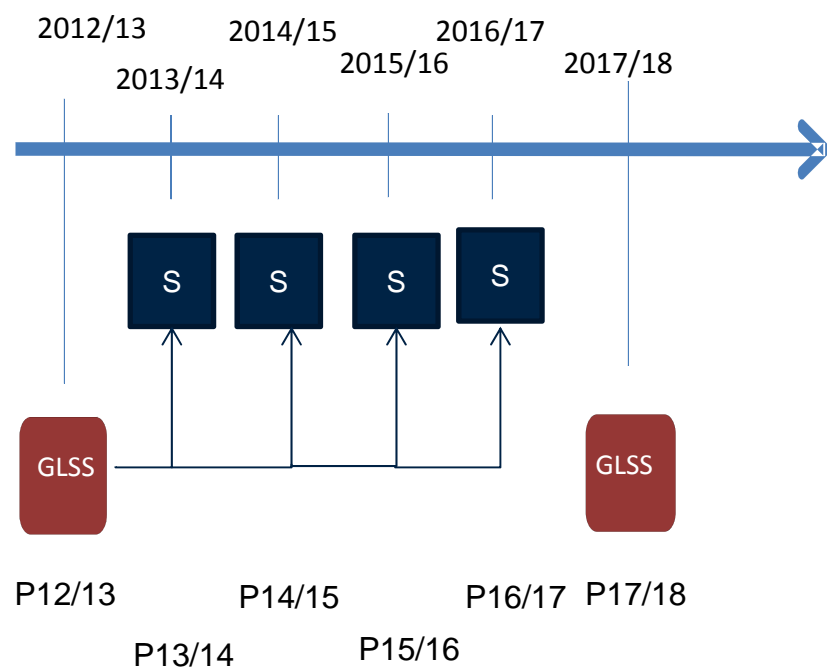


SWIFT for increasing frequency

LSMS/HBS only



LSMS/HBS and SWIFT

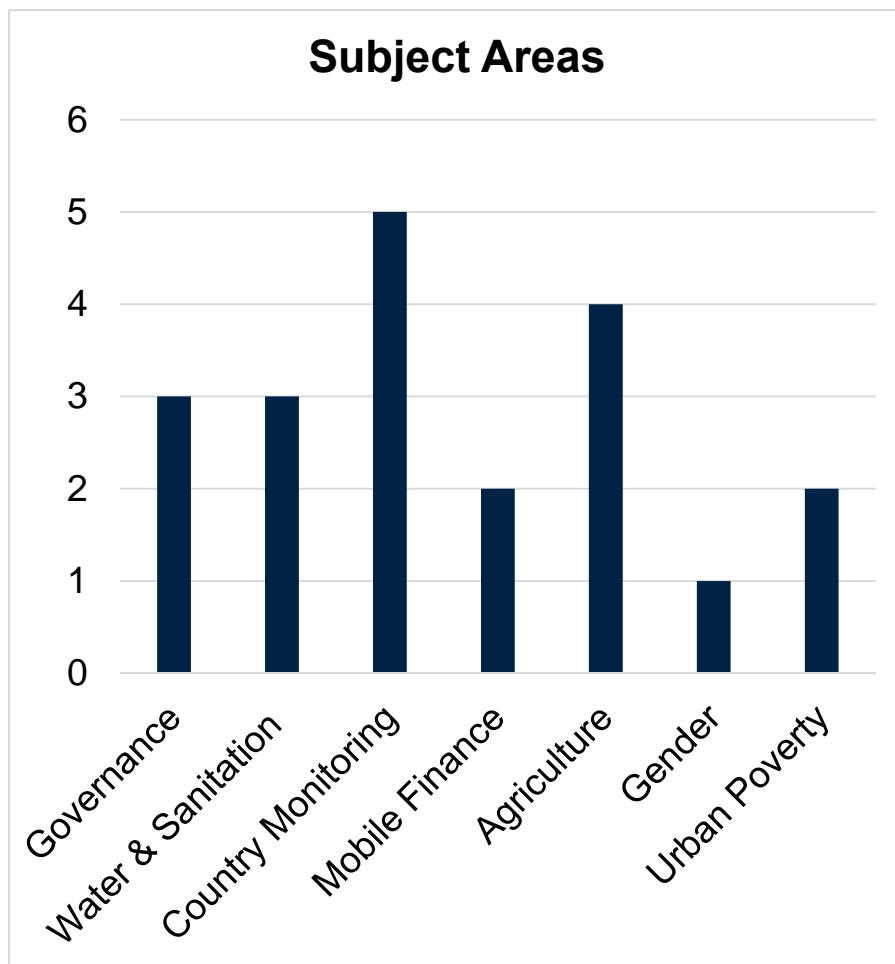


The Status of SWIFT project

Current Status

- SWIFT project was launched in November, 2013
- 20 SWIFT surveys in 16 countries are currently under implementation or completed
 - Topics (Governance, Water, Urban Development, Mobile Finance, Country Monitoring, Land, Agriculture, Gender)
 - New requests – more topics (Forest, Health, Electricity, Law & Order) more countries (India, Bangladesh, Philippines, Mexico, etc.)
- Improving documentation and training materials
 - First SWIFT training in Ghana
 - Second manual of SWIFT
- Creation of an internal website for SWIFT
 - Plan to create an external website soon

Implementation of SWIFT by subject and by countries



The list of countries where a SWIFT survey is completed or on-going

AFR	Cote d'Ivoire (2), Ethiopia, Ghana (2), Madagascar, Togo, Uganda, Mozambique, Rwanda
EAP	Cambodia (2), Laos
ECA	Kyrgyz Republic (2), Romania, Serbia
LAC	Paraguay
MNA	Iraq
SAR	Afghanistan

Note: Parentheses indicate the number of SWIFT surveys if it is more than 1.

How to start SWIFT

1. Please contact me (nyoshida@worldbank.org)
2. A preliminary meeting
 - Understand the objectives
 - Identification of support needed
3. Feasibility test by SWIFT team
 - Data availability
 - Engaging key partners
4. Training & Design of SWIFT survey
 - Training
 - Modeling & Questionnaire design
5. Implementation of Survey
 - Training of trainers
6. Data Analysis

Support from SWIFT team



SWIFT team can
provide support for all
these steps

You choose what you
want

Data Needs

- Recent household surveys that include both consumption (or income) and other household and individual characteristics
 - Asset ownership
 - Household head's characteristics (education, employment, and health)
 - Household demographics (size, the number of children or dependents)
- It is critical to have a household survey that is not older than 5 year old
 - Preferably 3 year old or younger

Ghana training – the first training of SWIFT

- Combination of Theory and Hands-on training
 - Theory
 - Introduction
 - Modeling
 - Hands-on training
 - Modeling using Ghana data
 - Creation of CAPI questionnaire
 - Materials
 - PPTs (Introduction, modeling, CAPI questionnaire, Pilot)
 - Demo Data
 - Do files

Thank you!

If you have any question, please let me know at nyoshida@worldbank.org