

The World Bank Group's

# Survey of Well-being via Instant and Frequent Tracking (SWIFT):

ESTIMATING CONSUMPTION FOR HOUSEHOLD POVERTY MEASUREMENT

A Rapid Assessment Tool



WORLD BANK GROUP





The World Bank Group's SWIFT is a rapid poverty assessment tool that can produce accurate household data in a timely, cost-effective and user-friendly manner. Developed by the Poverty and Equity Practice, SWIFT enables public or private sector clients and operational teams to measure the impact of specific interventions on the income levels of beneficiaries in real time, which provides a measure of their contribution to poverty reduction and shared prosperity. Based on beneficiary responses to five-minute surveys (typically containing 10–15 questions), SWIFT can be used to:

- Estimate a proxy for income levels of existing or target beneficiaries
- Segment the supply chain or customer base to understand access, demand, and behavior by socioeconomic level, thereby allowing for better targeting and tailoring of programs and interventions
- Help clients shape their role in poverty reduction by targeting producers and consumers at the bottom of the pyramid, and thereby to help assess their contributions to the Sustainable Development Goals

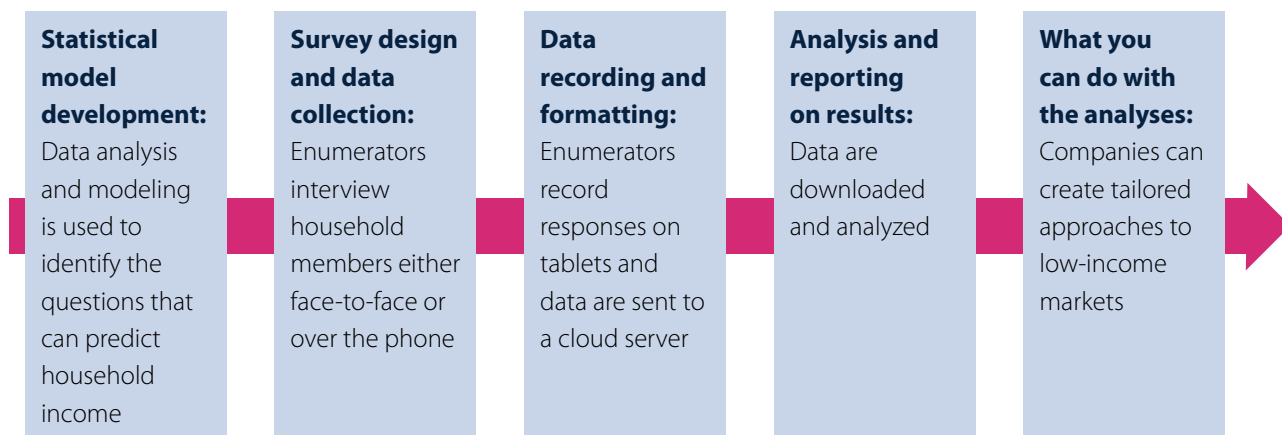
## BACKGROUND

In the developing world, official poverty rates are often outdated, unreliable, or nonexistent as the household consumption expenditure and income data behind them are scarce and often hard to access. Collecting reliable income data<sup>1</sup> is costly, time-consuming, and complex, leading to large data gaps during the years when data are not collected. Countries spend millions to collect data, often taking up to two years to produce poverty statistics. Lacking data limits our ability to make informed and targeted policy recommendations and take implementation decisions for our projects. This can leave the poor more invisible, marginalized and voiceless.

<sup>1</sup> In the case of developing countries, collecting income information directly is a poor measure of well-being as the socioeconomic situation of households may not rely on monetary income that can be easily quantified. For this reason, most national statistics offices use household consumption to calculate the monetary expenditure levels and use this as a proxy for income when measuring poverty. In this note, household expenditure is used as a proxy for income when income is mentioned.

# HOW DOES SWIFT WORK?

SWIFT uses machine learning to derive 10–15 questions that predict income by extracting poverty-correlated variables from official national data. Using a custom-built statistical model, it then estimates household income or expenditures. Projected income or expenditure data are used to calculate poverty and inequality statistics. By doing this, SWIFT allows project teams to identify the socioeconomic profiles of the populations they are working with, study differences among different groups, and monitor the impact of specific interventions on their wellbeing. The process is summarized in the diagram below:



The poverty-correlated questions typically include variables such as household size, the household head's educational level and employment status, ownership of consumer durables, and housing conditions. These questions vary entirely from country to country and even within a single country, depending on whether the groups in the study live in rural or urban areas, capital cities or belong to specific segments of the population.

To collect responses to the selected questions from a household, SWIFT usually takes seven to 10 minutes, which significantly reduces data collection time and cost compared to traditional methods.

SWIFT data is collected through tablets using survey software technology known as CAPI (Computer-Assisted Personal Interviews), which makes data available in the cloud in real time. It also increases efficiency by removing data processing and most cleaning tasks. It also reduces the risk of data loss and human error in the interview process.

The questions are intended to be concise, objective, and easy-to-ask in short one-on-one interviews. The data from the questionnaires are analyzed using a statistical model. Results can then be compared to relevant income thresholds.

SWIFT works well as a rapid assessment tool, but to make deeper inferences about impacts on beneficiaries, users must collect additional data and perform rigorous impact evaluation methods, such as randomized control trials, propensity scores, and difference-in-differences. It should also be noted that SWIFT estimations are only as good as the underlying models which require access to recent large scale data sets collected by governments and multilateral agencies.

# IFC COTTON PROJECT IN THE SAHEL

## CONTEXT AND OPERATIONAL CHALLENGE

In the Sahel, cotton has historically been grown as a rain-fed crop without active soil and water management or irrigation, contributing to low yields. IFC is providing investment and advisory support to a cotton processor in the Sahel that aims to provide the benefits of soil and water management to its supply chain. Given the challenges of changing climate patterns, soil erosion and low productivity, the company wants to improve the resilience and sustainability of cotton production in its supply chain as well as increase the financial returns of farmers, and thus ultimately contribute to reducing poverty in the region. IFC supported the company to provide training and technical support on the construction of small-scale water management infrastructure and the installation and use of irrigation equipment to farmers.

SWIFT is being used to both better understand beneficiary farmers and to assess farmer incomes. A farmer household survey has been conducted at the beginning of project to be able to customize project activities to future beneficiaries and for the results to serve as baseline values needed to generate statistical evidence of project impacts at the end of implementation.

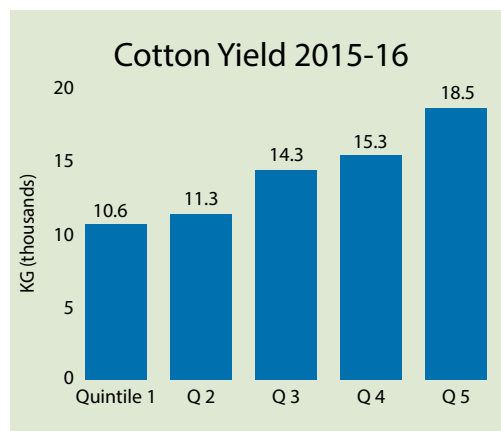
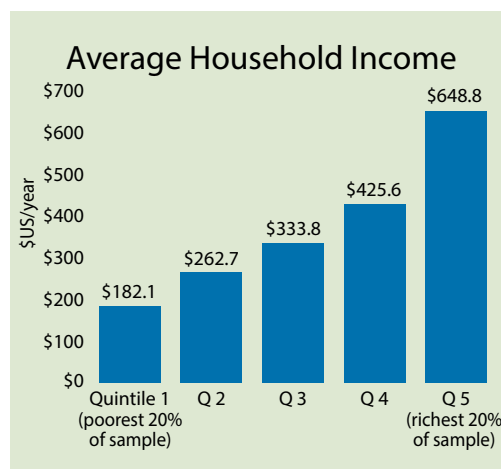
## SELECTED FINDINGS USING SWIFT AT THE BASELINE

Among other results, the SWIFT analysis showed that big income differences remain between surveyed households where the richest 20 percent of farmers (fifth quintile) earn on average about four times as much as the poorest 20 percent of farmers (first quintile). This is in line with the finding that wealthier farmers tend to produce more cotton than poorer farmer households.

Looking at literacy rates, the analysis showed that farmers in the first quintile are less likely to be able to read and write than farmers in higher income quintiles.

## VALUE ADDITION OF SWIFT

Using SWIFT has helped IFC and the client understand demographic and farming patterns of potential beneficiary farmers in different income quintiles. Understanding farmers' ability to absorb written training material allows the project team to adjust how best to reach and train farmers and ensure the highest level of comprehension and adoption of good agricultural practices.



Hannah Leupold/IFC



# IFC COCOA PROJECT IN CENTRAL AFRICA

## CONTEXT AND OPERATIONAL CHALLENGE

The cocoa supply chain in Central Africa is facing significant challenges due to the lack of reliable information on cooperative performance. Due to poor cooperative governance and management and low financial literacy levels, farmers tend to sell their cocoa through informal farmer groups or independent off-takers for lower prices rather than through the cooperative. One of IFC's long term investment partners, a cocoa off-taker in Central Africa, requested IFC's support in formalizing and professionalizing cocoa cooperatives in the country.

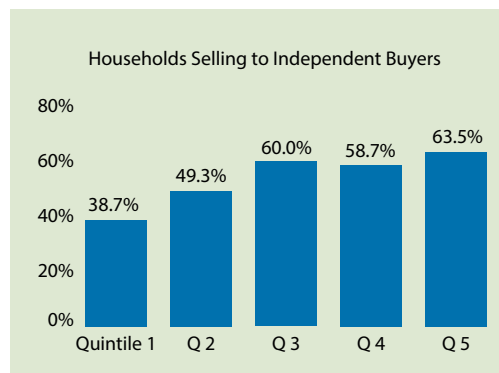
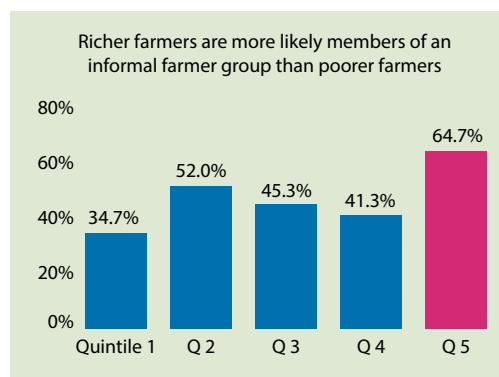
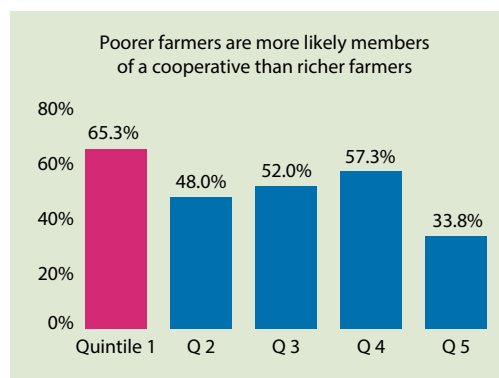
SWIFT provided valuable insights on the differing behavioral patterns of farmers at various income levels. The results of the baseline survey provided IFC and its client with valuable insights on income and poverty levels of farmers, the use of agri-inputs, farmers' relationships with cooperatives, cocoa sales, and farmers' access to finance. SWIFT allowed for a segmented analysis by income quintiles which revealed characteristics and behavior patterns of farmers at different income levels.

## SELECTED FINDINGS USING SWIFT AT THE BASELINE

The analysis suggests that huge income differences remain among farmers: the average income of farmer households in the richest quintile earn about six times as much as farmers in the poorest quintile. The survey results further show that poorer farmers are more likely to be members of cooperatives than richer farmers, while richer farmers tend to be members of an informal farmer group. Furthermore, the findings indicate that farmers that are among the richest 20 percent of respondents are the most likely to be selling their cocoa not only to a cooperative but also to independent buyers.

## VALUE ADDITION OF SWIFT

As IFC and the company are working to improve and strengthen the performance of farmer cooperatives. These insights have proven to be very helpful for IFC and the company to understand the behavior of farmers in different income quintiles and to customize project activities to target these different groups accordingly.



# IFC FORESTRY PROJECT IN SOUTHERN AFRICA

## CONTEXT AND OPERATIONAL CHALLENGE

When working in forested areas, the private sector faces challenges in securing land access for plantations, maintaining food security, and ensuring that the communities living in the forest concessions are suitably benefitting from the investment. Rural communities often face the risk of land grabs and displacement of livelihoods.

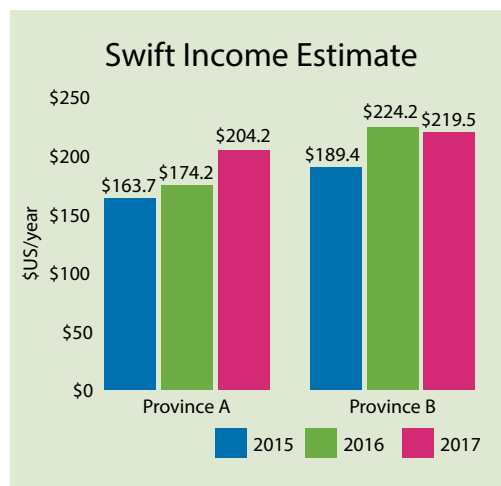
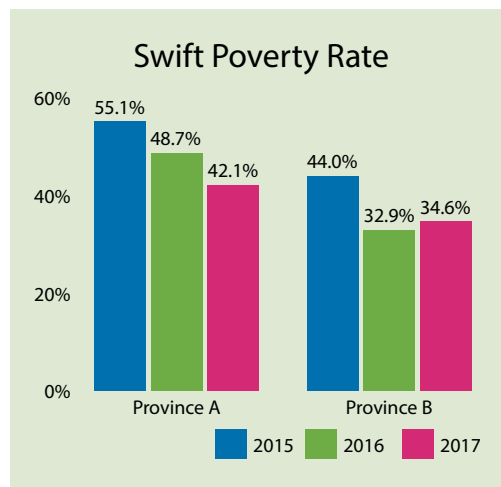
IFC supported an agroforestry company in southern Africa by implementing programs to reduce extreme poverty among households living near the plantation. After consultations with stakeholders, IFC and the company developed alternative livelihood programs in two provinces to broaden the development and financial sustainability of the project. The team, during the design of the project, decided to use SWIFT to collect annual data on income data of local residents and vulnerable households ensure that the alternative livelihood support is effective in providing sufficient incomes for the affected local people.

## SELECTED FINDINGS FROM SWIFT

Results from the annual SWIFT surveys suggest a strong correlation between project interventions and increased incomes in the project area of operations over the past two years. While income changes take time to manifest themselves in consumption patterns, the survey noted that household incomes ultimately increased in areas where project investment increased, and activities intensified, and incomes stagnated in the area where project activities were reduced considerably. SWIFT results showed the percentage of households that is living below the national poverty line decreased in both Provinces A and B in the two years since 2015 with a greater decrease seen in Province A, where the company intensified its efforts, than in Province B, where the company limited its activities.

## VALUE ADDITION OF SWIFT

As a result, IFC and the client are able to provide evidence to civil society and government that the project is bringing benefits to local communities.



Olivier Girard/CIFOR

# IFC TEA PROJECT IN EAST AFRICA

## CONTEXT AND OPERATIONAL CHALLENGE

Tea is a major cash crop in East Africa. Global demand for the commodity continues to grow, and tea producers need to maintain their competitive positions in global markets. With IFC assistance, a long-term client was able to positively impact tea farmers in its value chain and maintain its competitive position in international tea markets. As in many other value chains, women face additional productivity constraints compared to men. The company sought potential gender-smart solutions to address the productivity gap.

SWIFT allows the company to identify the link between productivity and household income and further measure the project's success in reducing the productivity gap between male and female-led households.

## SELECTED FINDINGS USING SWIFT AT THE BASELINE

The SWIFT analysis shows that farmer households in the 5th quintile earn up to seven times more than farmers represented in the 1st quintile. Furthermore, the analysis shows that female-led households tend to have a lower income levels than male-led households. This shows that the productivity gap and other gender-based constraints are ultimately impacting the welfare of female-led households.

In trying to understand why female-led households had lower incomes on average, IFC and the client discovered that poorer households, which are more likely to be led by women, have less access to training opportunities than richer ones. This contributes to the gender gap—arising from limited access to finance, the lack of equal participation in training, fewer opportunities for participating in farming cooperatives, and other constraints—which is likely linked to the poorer financial performance of women-led households.

## VALUE ADDITION OF SWIFT

Based on the finding that women tend to have less access to training than men, IFC and the company are making a deliberate effort to offer inclusive training that specifically target women's agronomic training needs. The training focuses on financial literacy and soil management practices and is expected to reach a significant number of female-led households in the client's supply chain by the end of 2020.

