LEARNING NOTE

Poverty & Equity Global Practice

CAPACITY BUILDING IN FISCAL INCIDENCE ANALYSIS: LESSONS AND REFLECTIONS FROM THE FIELD[1]

The objective of this note is to highlight lessons learned in capacity building and skill transfer for fiscal incidence analysis (FIA), including Commitment to Equity (CEQ)® assessments.[2] The goal is to uncover effective strategies for transferring the skills and capacities to government officials and other fiscal experts in countries around the world to enable them to carry out this type of analysis themselves. The note is based on interviews with experts – both within and outside of the World Bank – who have been conducting FIA assessments and building and using microsimulation tools, often in close collaboration with officials from the government. This draft draws on inputs from 16 FIA experts and discusses both global experiences and specific experiences in multiple countries, notably Argentina, Egypt, Ghana, Indonesia, Kenya, Morocco, and South Africa. Future versions of this note will attempt to incorporate perspectives of the government clients who have been recipients of these training and capacity building activities. FIA matters because fiscal policy—how and where government spends, and how it raises money to fund this spending—is a critical policy response to addressing inequality. The COVID-19

[1] This experience note has been produced by Katherine Hutt Scott for the Fiscal and Social Policies for Equity Global Solutions Group of the World Bank under the leadership of Alan Fuchs, Sailesh Tiwari and Matthew Wai-Poi. It draws on interviews with experts in each of the countries covered in the note. The list of interviewed experts as well as a summary of each country's experience appears at the end of this note. We are grateful to Maria Ana Lugo (Senior Economist, Poverty and Equity Global Practice) for providing peer review comments on an earlier draft. We are also grateful to Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ), acting through and on behalf of the German Federal Ministry for Economic Development, for their contribution to the Umbrella Facility for Poverty and Equity that made this work possible.

[2] The CEQ approach was developed by the Commitment to Equity Institute (CEQ Institute) at Tulane University. The methodology, implementation guidelines, applications, and software of the CEQ approach can be found in Nora Lustig (Ed.), *Commitment to Equity Handbook. Estimating The Impact of Fiscal Policy on Inequality and Poverty* (pp. 3-55). Brookings Institution Press. 2018. As such the methodology is a registered trademark.

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pandemic has elevated the importance of FIAs. On the one hand, there is mounting evidence that the pandemic is widening inequalities.[3] On the other hand, the need to assess the effectiveness and efficacy of some of the extraordinary fiscal measures policy makers have taken to mitigate the impact of the pandemic on their populations has become paramount. With the pandemic dragging on, fiscal resources are getting strained. Tools that allow policy makers to see and carefully assess the tradeoffs between the burden of any (new) tax effort and the relief benefits to populations at different parts of the income distribution have become a critical part of the policy evaluation toolkit.

How and where the government spends, and how it raises the resources to fund this spending is a critical response to inequality that has become even more important in the post-covid world.

– Matthew Wai-Poi, World Bank Lead Economist

FIA is the study of how fiscal policies benefit (or burden, in the case of taxes) people and households at different parts of the income distribution. For example, a family might benefit from subsidized fuel when they fill up their motorcycle but also when they buy food which is cheaper because it has been transported using subsidized fuel. FIA asks how much each type of household benefits from the subsidy. If poorer segments of the population benefit relatively more, then the fiscal instruments can be regarded as being “progressive”. Whereas if the wealthier segments of the population benefit more from such subsidies, they are considered “regressive”. The same principle could be applied to taxes as well. A tax – such as, say, a personal income tax – is payable often by workers who have jobs in the formal economy and earn above certain threshold amounts and, as such, is likely to be a progressive instrument. Whereas a more broad-based tax such as a value added tax (VAT) on consumption commodities can be distinctly more regressive even though in absolute terms, VATs are often paid quite disproportionately by those at the higher end of the distribution purely because of the fact that their consumption levels are higher.

A particular form of FIA that has been used quite commonly over the last decade is the Commitment to Equity (CEQ) method. Developed originally by the CEQ Institute at Tulane University, this method has become a workhorse for most analytical and country engagements on distributional assessment of fiscal policy carried out by the World Bank. What distinguishes the CEQ method from standard FIA is that it takes into account (to the extent permitted by data) *all* taxes and transfers and looks at them not only in isolation to say, for example, whether one instrument of tax and transfer is progressive or regressive, but also to look at their contribution to poverty and inequality, along with the progressivity of the overall fiscal system.[4]

[3] For example, see World Bank (2022) *Global Economic Prospects*.

[4] *Unless otherwise noted, this paper refers to the CEQ brand of FIA.*

FIGURE 1. Commitment to Equity Method

Source: Adapted from Nora Lustig and Sean Higgins. 2013. Commitment to Equity Assessment (CEQ): Estimating the Incidence of Social Spending, Subsidies and Taxes Handbook. CEQ Working Paper 116, Commitment to Equity Institute, Tulane University, September.

Figure 1 illustrates how the method works. Households earn income from employment and assets such as property or shares. This stage is called the “pre-fiscal” or “market-income” as no taxes have been collected nor any benefits received. Some households then pay income tax while others receive cash transfers from the government. When households buy goods and services, they pay more tax (such as VAT, GST, excise) but may also benefit from public subsidies to things they purchase such as energy or food. Finally, when someone visits a public hospital or a child goes to school, households may also benefit from fees which are usually much less than the cost of delivering the service in countries that subsidize these services. Comparing the properties of the pre-fiscal income distribution with the post-fiscal income one (consumable/final income in the figure above) is what allows for the assessment of the overall impact of the fiscal system on poverty and inequality.

The rest of this note: (i) describes the common engagement models and capacity building approaches that have been taken; (ii) assesses the extent to which these have been successful and distils lessons learned from some of these efforts, and (iii) identifies a few concrete ways in which similar efforts in the future could be made more effective.

CURRENT LANDSCAPE: APPROACHES TO FIA CAPACITY BUILDING AND THEIR IMPACT

FIA dates back to the 1940s and examines the impact of a specific fiscal policy change on various types of households. The CEQ approach was born at the Inter-American Dialogue think tank in Washington, DC in 2008, under the leadership of economist Nora Lustig. Since 2009, the project has been based at Tulane University. In 2015, Lustig founded the CEQ Institute, which in addition to conducting FIA assessments, provided trainings on how to conduct them.

In the earliest phases, the CEQ Institute, in collaboration with Latin American think tanks, started conducting FIA assessments in three countries—Argentina, Mexico, and Peru. In 2013, the World Bank began collaborating with the institute on this work, with the objective of generalizing what had been done in Latin America to the rest of the world. The CEQ Institute / World Bank work started with five countries (Armenia, Ethiopia, Indonesia, South Africa, and Sri Lanka) and eventually expanded to eight countries (adding Georgia, Jordan, and Russia) as other countries started becoming interested once the assessments showed results.

HOW IS FIA/CEQ WORK DONE IN COUNTRIES TODAY?

FIA assessments

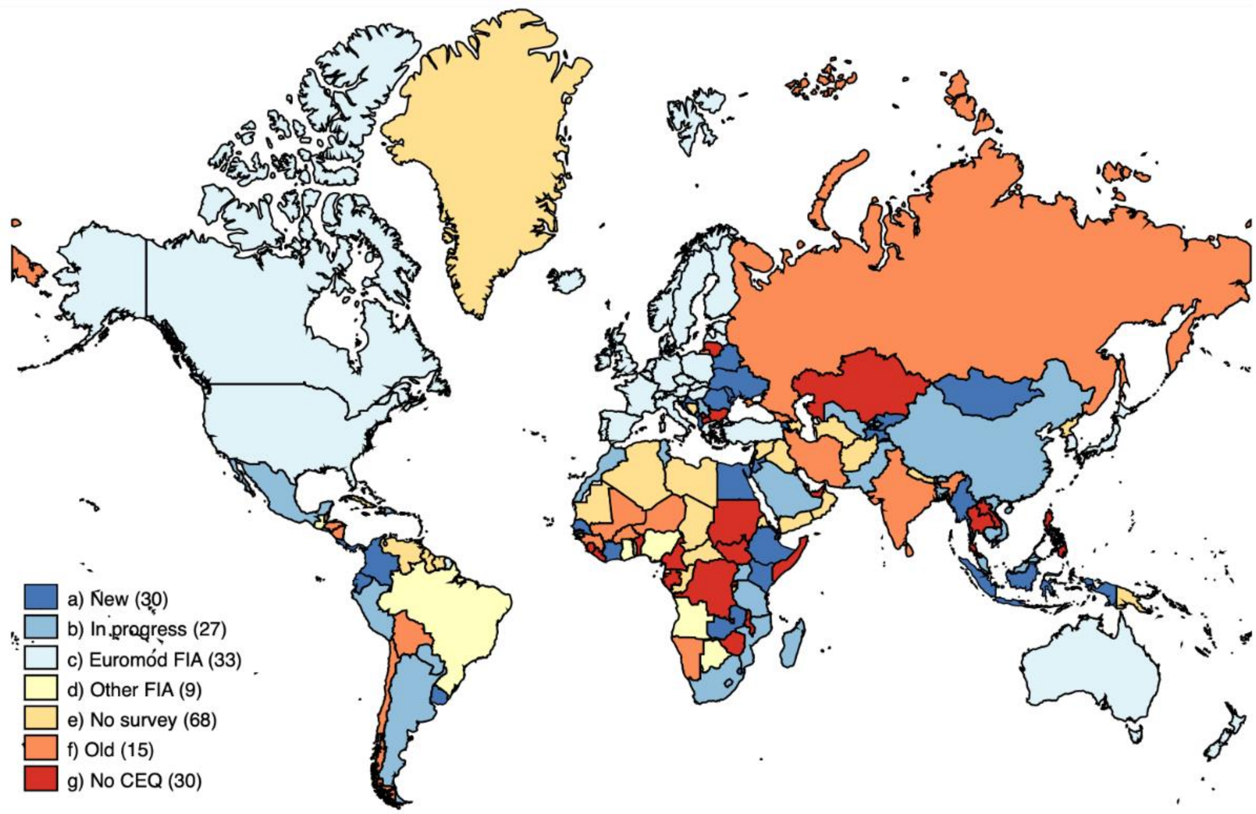
The World Bank and the CEQ Institute remain the leading actors globally in conducting FIA assessments. To date, the **World Bank** has done **60 FIA analyses in 45 countries, with 26 new studies (including 13 new countries)** in preparation. These analyses are typically embedded in the Bank's country engagement on poverty and inequality. "Poverty economists" – microeconomists mapped to the Poverty and Equity Global Practice of the World Bank – assigned to the particular country are typically the ones that carry out these analyses, usually with the help of consultants and often in collaboration with the economists engaged in the overall fiscal policy dialogue and sectoral specialists. The fact that there are poverty economists assigned to each of the 180 countries means that, in principle, there is an opportunity to do this kind of analysis in each of the countries where the World Bank is engaged. Figure 2 indicates countries where FIA and CEQ analysis has been done by the World Bank, CEQ Institute, and others, notably national agencies in the case of OECD countries.

As per the latest count, the **CEQ Institute** has done these analyses in **63 countries** globally.[5] In conducting the assessments, the CEQ Institute has often collaborated with local teams. In addition to the World Bank, it has also worked with multilateral organizations, such as the Asian Development Bank, International Monetary Fund (IMF), African Development Bank (AfDB) and

[5] Many country studies have been collaborative efforts by the CEQ Institute and the World Bank, so the count of studies by each institution overlaps significantly.

the Organization for Economic Cooperation and Development (OECD); bilateral aid organizations, such as the Millennium Challenge Corporation; and other research and advocacy institutions, such as universities and Oxfam. In the last four years, the Institute started establishing “Fiscal Equity Labs” of researchers in universities and think tanks who are trained in FIA assessments in the three largest Latin American countries: Argentina, Brazil, and Mexico.

FIGURE 2. CEQ and FIA Coverage



Note:
a) New: CEQ FIA on 2015 or more recent survey data, b) In progress: CEQ FIA in progress/planned
c) Euromod: FIA for OECD countries, d) Other FIAs run by non-WB partners, e) No survey: No survey data available
f) Old: CEQ FIA on 2014 or older survey data, g) No CEQ: no CEQ or FIA done but survey data available
Note 2:
Euromod FIAs include the computation of Gini indexes at Market Income and Disposable Income but excludes Consumable Income.
Results of other FIA exercises run by non-WB partners are not accessible to the WB.

Source: Compiled by the World Bank from CEQ Data Center, PovcalNet and World Bank country studies.

Microsimulation tools

In 2016, the World Bank developed an innovation in FIA work: fiscal microsimulation tools that are a more user-friendly way for policy makers to simulate full-scale FIA assessments. These tools combine fiscal and administrative data (such as budget numbers, tax rates, and number of social services beneficiaries) with micro data from household and labor force surveys to predict income and poverty levels under different tax and government spending scenarios, based on the underlying model from an already conducted FIA assessment. Each tool follows a basic template, but must be customized for each country with its unique data. The novelty that these microsimulation tools introduce is the ability to assess the equity of potential future fiscal policies.

The microsimulation tools that have been developed have two possible interfaces, each with its own advantages and disadvantages:

- **a dashboard in Excel**, with Stata statistical software running in the background (the better option for users who want to understand the nuts and bolts of the tool and for the World Bank to tweak their tool)
- **a stand-alone website** with all programming done in R Shiny (the better option for users who don't have any technical background)

In both tools, the idea is for the policy makers or other users to plug in parameters for specific policies under consideration (e.g., tax rates, generosity of cash transfers, eligibility criteria for energy subsidies) and see the resulting impacts on households of different income levels.

The microsimulation innovation emerged during the World Bank's work on the Greek debt crisis. The European Union had hired the World Bank to design a policy package for Greece and in order to do that, the Bank needed to run multiple scenarios to look at the likely impact of each of the combination of packages. Efforts to make these runs more efficient are at the root of the genesis of the fiscal microsimulation models. The same approach was used in response to emergencies in Argentina and Paraguay. Eventually, some teams started recognizing the tool as a user-friendly version of the FIA with Romania (2018) being the first country for which the tool was delivered on a pre-planned basis and as a companion to the standard FIA analysis. Since then, the Bank has invested significantly in further developing these tools, streamlining the interfaces, and promoting them internally among poverty economists. As of June 2021, fiscal microsimulation tools had been produced in about 40 countries. Similarly, the CEQ Institute's Fiscal Equity Labs in Brazil and Mexico both plan to create microsimulation tools for those countries.

It is worth noting that these microsimulation models are short-term static assessments and for the most parts do not account for behavioral responses, so they are useful to assess just the short run impact of assessments. Euromod is another well known tool that has some similar features but is different from the microsimulation tools being developed at the Bank in two specific ways. First, the Euromod considers only direct taxes and transfers whereas the microsimulations developed by the Bank also account for indirect taxes and benefits. Second, the Euromod models also account for behavioral responses in the labor market.

WHAT TYPES OF FISCAL/REFORM CONTEXT HAVE ASSESSMENTS BEEN EMBEDDED IN?

The World Bank's FIA assessments have been conducted under a wide variety of circumstances, ranging from planned work embedded in regular dialogue on fiscal policy to situations that have bordered on crisis. The selection of countries covered in this note has attempted to capture the diversity of settings under which these analyses are carried out. For example, **Poland** has its own microsimulation models that it was using in its budget process and wanted to compare their model with the CEQ methodology. At the other extreme was **Argentina** in 2018, where the Bank assisted the government in simulating the effects of sensitive policies involving budget cuts and the potential cushioning impact of social policies. In most cases, the World Bank used the assessments to quantify the impact of policies that the government counterparts had already implemented or were considering. Table 1 summarizes the fiscal context in which the FIA analyses were undertaken in each of the countries selected in this note.

TABLE 1. Fiscal Contexts for FIA Analyses in Selected Countries

Country	Fiscal context	Year(s)
Argentina	Financial crisis requiring budget cuts	2018
Armenia	Personal income tax and minimum wage reforms	
Chile	Tax reform	2014
Egypt	General support to the budget process	
Indonesia	Elimination of energy subsidies and expansion of targeted social assistance to the poor	2012, 2017
Paraguay	Reform to strengthen the progressivity of income tax	2018
Poland	Comparison of results with their own microsimulation tool	
Senegal	Reform to exemptions of a value-added tax	
South Africa	Exploring options for the replacement of COVID-19 emergency relief grants	

WHAT HAS BEEN THE EXTENT/NATURE OF CLIENT ENGAGEMENT?

Government agencies

In nearly every country, the World Bank has worked with one or a combination of the following governmental agencies: Ministry of Finance/Treasury, Ministry of Economy, Ministry of Planning, and Statistics Office. In several instances, line agencies have also been part of the process, including Ministry of Health, Social Security institute, and Central Bank.[6] For example, in **Indonesia,** the Bank worked with not only the Ministry of Finance, but also with the other governmental institutions involved in fiscal policies, including the National Coordinating Team to Accelerate Poverty Reduction (TNP2K) under the Vice President's Office.

[6] The particular names and functions of each of these institutions may vary from country to country but are referred to here in a generic sense in order to generalize across countries.

Of the country experiences discussed for this paper, there were engaged government counterparts in most countries (for example, Argentina, Indonesia, Morocco, Paraguay, and currently Egypt and Senegal), and counterparts that weren't engaged in a few countries (for example, Ghana, Russia, and Croatia). In the relatively non-engaged cases, it was either the case that the government didn't do anything with the FIA assessment results, or there was a political problem that prevented the results from gaining traction.

Argentina is an interesting instance in which dialogue and technical assistance based on FIA work has continued despite a change in presidential administration (December 2019). This highlights how robust technical work can help the Bank collaborate with governments across the political spectrum.

All interviewed fiscal experts gave high marks to the engagement of nearly all government clients. More details about individual countries can be found in the appendix. But there were some important and obvious variations across countries. The most actively engaged country was **Morocco**, where government counterparts took over the production of the 2019 FIA assessment, with some technical guidance from the fiscal experts in charge.[7] But in some ways, this was a de facto consequence of the fact that the Moroccan survey data needed for the analysis would not be shared with outside parties. So, while experts provided guidance about what the programs should look like, the counterparts had to write and run the code themselves. When they encountered issues, they would send the consultants their output and the consultants would make suggestions to fix the issue.

A more inclusive engagement took place in **South Africa**, where during the 2020 CEQ assessment, conducted by the CEQ Institute, the lead consultant expanded the engagement significantly beyond the National Treasury. Workshops were conducted to solicit feedback on the initial data run from officials belonging to different units of the National Treasury (education, health, water and electricity, and taxes), plus the Housing Ministry and the Department of Women. Consultations were organized also with civil society groups. This strengthened the results of the analysis and fostered ownership.[8] The National Treasury, which already used administrative data in its budget process, has appreciated and adopted this tool as a useful framework to think about poverty and inequality more coherently.

Nongovernment researchers

In some countries, the World Bank has successfully collaborated with other multinationals or local researchers on FIA assessments. For example, in Argentina, the Bank's work was frequently consulted and used by the IMF. In the **Dominican Republic**, the Bank worked with a local

[7] Stephen Younger, a CEQ Institute Consultant, and Hélène Ehrhart, Responsable d'équipe projet Gouvernance Financière for the Agence Français de Développement, which co-funded the assessment with the European Union, were the two lead consultants.

[8] Maya Goldman, who carried out this analysis, is now a senior researcher for the Southern African Labor and Development Research Unit at the University of Cape Town.

academic who was respected by the government, and who helped the Bank team gain access to necessary data for the FIA analysis and also gain the attention of high-level government officials beyond the Ministry of Planning.

A similar approach is being taken by the CEQ Institute which is developing Fiscal Equity Labs of researchers in universities and think tanks to do FIA assessments and simulations in the three largest Latin American countries. In **Argentina**, they are partnering with the Center of Studies for Human Development (CEDH) at the Universidad de San Andres to update the country's CEQ assessments and teaching the CEQ methodology to graduate students. In **Brazil**, Claudiney Pereira, Economics Professor at Arizona State University, joined forces with Brazil's Center for the Study of Inequalities and Development at the Universidade Federal Fluminense, to update the country's CEQ assessment and then also develop a microsimulation tool. In **Mexico**, the National Laboratory of Public Policies, CIDE, a social science research center that offers undergraduate and graduate programs of study, is now updating the country's CEQ assessment and then plans to create a microsimulation tool.

One observation on how capacity is built that can be made based on these experiences is the emerging contrast between the approaches taken by the World Bank and the CEQ Institute. In the case of the World Bank, FIA analyses have by and large been mainstreamed as part of the essential toolkit on analytical and advisory work on fiscal policy. Insights from these tools are increasingly regarded as integral components of World Bank's flagship diagnostic products, such as Public Expenditure Reviews (PERs), and in many cases also Poverty Assessments, Systematic Country Diagnostics, and Country Economic Memoranda. In many instances they have also catalyzed and informed Bank lending through budgetary support operations. Since the onset of the pandemic, they are increasingly becoming centerpieces of country dialogue. As such, there is an increasing demand from country management to produce this kind of analysis, and back this demand with resources to do these analyses in-house. In contrast, most of the newer FIA-type analyses that are currently being done by the CEQ Institute are in collaboration with third-party collaborators, which builds civil society capacity and promotes independent analysis.

CAPACITY BUILDING AND ADVOCACY

WHAT CAPACITY BUILDING APPROACHES HAVE BEEN USED?

FIA assessments

In conjunction with the CEQ Institute, the World Bank began training governments in how to conduct the assessments starting in 2013, with Indonesia, Paraguay, and South Africa, shortly after the Bank conducted their initial assessments, again in collaboration with CEQ Institute. Since then, as the number of countries carrying out CEQ assessments increased, so did training and capacity building activities, which also became increasingly decentralized – led, managed, and run by individual experts working in the specific country. Though it is not the case that training activities have been carried out in every country where CEQ assessments have taken place to date, the Bank has probably conducted some form of training/capacity building activities in more than 30 countries over the last 6-7 years. The CEQ Institute has trained staff of multilateral institutions, starting with the World Bank, and including the IMF, Organisation for Economic Co-operation and Development (OECD) and Agence Français de Développement. In her capacity as a Tulane University professor and founding Director of the CEQ Institute, Nora Lustig has trained many economics students, many of whom have themselves become trainers. The Poverty and Equity Global Practice of the World Bank, in collaboration with the CEQ Institute, continues to conduct regular trainings for policy makers and technical staff at both the regional and the country levels.

The longest running training and capacity building experience has been in Indonesia, where the World Bank has produced several rounds of FIA analysis jointly with the Fiscal Policy Research Agency of the Ministry of Finance. Training of technical staff was an explicit request made by the then-head of the Fiscal Policy Agency, and the Bank has paired collaboration with a strong element of capacity building. The capacity building efforts have taken several forms and have also evolved over time. In the early days, circa 2016-17, the Bank organized semiannual sessions, often spanning 3-4 days at a time. These sessions were targeted toward mid-level technical staff and would often start from basic refreshers on statistical software such as Stata before getting into topics of data preparation and analysis. Another slightly non-technical module, running about half a day in length, was also developed and delivered to several audiences within the government. These sessions aimed at slightly higher-ranked policy makers, introduced the concept of FIA, data needs, the basic methodology used to estimate benefits and burdens, how to interpret the results, and which policies typically drive them. Over time, as the relationship between the World Bank and the government deepened and collaboration became closer, these sessions were complemented by staff-secondments of Government of Indonesia technical staff in the World Bank's office in Jakarta, as well as weekly sessions at the premises of the Fiscal Policy Agency where the two teams would carry out joint analysis.

Microsimulation tools

The World Bank has **trained 11 countries individually** in how to use microsimulation tools and conducted two **group trainings for** finance ministry officials from **19 Francophone countries** (Haiti and 18 African countries).

Just as for the FIA assessment, training in how to use microsimulation tools varies widely. The most basic training is a half-day session that describes the tool and how it is different from the full assessment and demonstrates an example of an existing tool. The other extreme is several months of detailed training, for government officials who want to understand how the tool works. For example, in Egypt, the World Bank spent about six months showing trainees how to apply CEQ concepts to their data and policies, such as personal income taxes and social security systems.

WHAT HAS WORKED, WHAT HASN'T, AND WHY?

How successful have these efforts been? The answer seems to depend at least in part on the initial level of skills and ability. Middle and higher-income countries in general appear to already have the existing capacity to learn how to conduct FIA. In some cases, such as Argentina, the level of capacity is so high that the expert working there noted that the challenge was to gain the trust of the trainees and to be flexible and responsive to work in lockstep with them, as "they are in a strong position to make substantive contributions in the analysis." In general, and across all types of settings, the best capacity building results are achieved by close, in-person collaboration with trainees during every stage of conducting a FIA assessment, interviewed experts agreed. In this way, government counterparts learn how to do the process, what they can use it for—and in cases where data sharing is an issue, why it's necessary to share micro-level data to inform the assessment. Chile, Egypt, and Indonesia are examples of this.

In **Egypt**, the finance ministry was interested in using a microsimulation tool that could allow them to see the impacts of a potential policy change, so they hired people with background in STATA and microeconomics to form a team that could learn development of FIA assessments and microsimulation tools. The World Bank developed the tool in collaboration with the ministry and simultaneously trained the team from January to June 2021, which allowed the Bank to adjust the tool based on the client's needs. The engagement was bigger than what the team had initially planned for. The deeper engagement reflected client's commitment to understanding distributional impacts of policies.

When clients are interested in the outcome of the analysis and are closely following what we are doing and participating in every decision and adding their own suggestions in the mix, It ceases to be the work of the world bank and becomes joint work. this is one of the most successful forms of capacity building.

– Gabriela Inchauste, Lead Economist, World Bank

While joint work between the World Bank and government officials is one key milestone of success, the next frontier on this—especially in countries where the value of the analysis has been realized but there is no independent capacity to execute it—is to equip technical counterparts with the tools to do it themselves, without any direct engagement from the World Bank. **Indonesia** is one country where an active effort has been made to push the frontier from handholding to handover. Success has been mixed, and the experience has highlighted lessons that could be common across several lower and lower-middle income country groups. First, the initial levels of technical skills of the trainees were found to be highly variable and this ended up requiring a lot of time not only to train them, but also to build their confidence. This is partly attributable to the fact that a majority of the technical cadre recruited by the Fiscal Policy Agency (the main counterpart) are drawn from the macroeconomic pool and were found to have limited experience handling large household survey data. The second challenge was staff turnover. Several technical staff who had been exposed to and trained in the methodology ended up finding themselves in roles in which they could no longer use these skills. The training offered by the World Bank was recognized as a key staff-development opportunity within the organization, and the incentive structure appeared to reward participants by strengthening their advancement and mobility prospects. The overall assessment has been that: (i) average skill levels have gone up; (ii) most trainees are able to implement components of tasks, such as pulling relevant material for a specific tax or spending component from household survey data, conducting parts of the analysis, and producing policy memos; (iii) but there are perhaps only a couple trainees who can now execute the analysis end-to-end and query models for pertinent questions that policy makers may have.

One other challenge that was less of an issue in Indonesia but may be relevant for other countries, where household survey data are not produced frequently and FIA analyses are not implemented every budget cycle, is the possible atrophying of built capacity as a result of infrequent use. The lack of opportunity to practice and hone the acquired skills due to the “occasional” and somewhat “ad hoc” nature of the analysis were both found to lead to an atrophying of the built capacity. Experts working on **Ghana,** for example, noted that given how some technical skills required in FIA assessments are so specific, anyone not doing the exercises on a regular basis would quickly start forgetting the techniques.

In addition to existing skills, successful capacity building requires enthusiastic local trainees and at least one local champion who understands and promotes the long-term utility of FIA at the policy level. Ensuring that interests are aligned and that there is actual demand for the use of insights that come out of FIA analyses in not only one, but multiple, budget cycles can be a key determinant of success. This motivates clients to not only assign individuals or departments to learn the tools, but also to prioritize this by freeing up time in their workplans to focus on this analysis. Several interviewed experts noted that often the officials who had the capacity to drive this kind of analysis and integrated insights into policy conversations were already too busy juggling many other priorities.

One way to strengthen the demand side of the feedback loop is to recognize that generating evidence is only half the battle and to build engagements efforts to ensure that evidence is discussed and debated and feeds into conversations about policy reforms. The credibility and the convening power that the World Bank has in many countries as a trusted source of solid, impartial, and evidence-based policy advice is something that can be leveraged on this front. There are already several good examples of this. In Indonesia, early iterations of the FIA analyses were crucial in motivating the elimination of energy subsidies, as well as reassuring the government that through targeted direct assistance, the impact on the poor could be cushioned. Newer iterations of the work have not only provided an ex-post reassurance that the poor were indeed protected through these reforms, but have also allowed an ex ante perspective on a more ambitious reform agenda (VAT rate adjustments, elimination of subsidies, tobacco excise increases, etc.).

There are several other examples where a combination of an FIA assessment plus a microsimulation tool have convinced the government to proceed with policy changes. These countries include Armenia, Egypt, Senegal, Serbia, and Turkey. In **Armenia**, where the World Bank has done three rounds of FIA assessments, the last in 2017, the Ministry of Finance used both the results of the latest analysis and a microsimulation tool to study the potential impacts of reforms, and based on those results, implemented two reforms: to the personal income tax and to the minimum wage.

FIA tools and insights have also been useful in the analysis of the fiscal response that several countries have mounted in response to the pandemic. In **Indonesia**, for example, the FIA tools showed that the first two packages that the government had announced would be insufficient to cover the welfare losses incurred by households at the bottom 40 percent of the distribution. This led to a couple of memos sent to the Minister of Finance as early as April 2020. Over the course of the summer and fall of 2020, social assistance programs were significantly expanded.

In Chile, The World Bank closely collaborated with the Ministry of Finance and the Chilean Internal Revenue Service (Coordinación de Estudios Económicos del Ministerio de Hacienda (MH) and Departamento de Estudios Económicos y Tributarios del Servicio de Impuestos Internos (SII)) to assess the distributional effects of the 2014 Chilean Tax Reform. The study simulated the impact of the 2014 Tax Reform on the distribution of personal income. Building upon the construction of a complete income distribution profile on an accrual basis using data from household surveys and administrative tax records, tax changes were simulated comparing scenarios before and after the reform. The study also estimated the distributional effects of the increase on specific taxes on tobacco and alcoholic and sugar-containing non-alcoholic beverages. The study found that the 2014 Tax Reform led to a positive impact on income distribution as the effect concentrates especially on the upper end of the income distribution. The income tax reform did not affect the lower 75 percent of the income distribution and had only minor effects on percentiles 76 to 99. For people in the top percentile, however, the reform raised the effective income tax burden from 12.7 percent before the reform to close to 18.5 percent after it. Thus, the study concluded that the Tax Reform had a positive impact on the equity of the tax system.

The main takeaway here is that the success of a capacity building program hinges not only on the transfer of technical capabilities, but also on stimulating the entire ecosystem of policy discussion, and a sustained effort to help translate FIA assessment results into policy-relevant advice. Thus, it is critical to embed these analyses within the broader dialogue on fiscal and macro issues, as well as the dialogue on poverty and social welfare. An additional point that the experience of Indonesia in particular highlights is the importance of having a dedicated team on the ground that can sustain this dialogue and gradually transition from handholding to handovers.

SYNTHESIS AND WAY FORWARD

What can be learned from the capacity building efforts that have been tried to date? Four key lessons can be distilled, and they are described below.

Better customizing training courses and targeting the right skill mix can maximize bang for the buck.

Even though the FIA methodology is intuitive and anyone with a bachelor's degree can potentially understand and make use of what is being done, those who have the programming ability to do this are likely to be a limited group in most countries. Developing different versions of the course material to cater to different audiences is one way of enhancing capacity building efforts. For example, modules that introduce key conceptual elements and underscore the policy use of FIA tools by focusing on live examples from ongoing and upcoming policy discussions could be developed specifically for policy makers. This could be further customized as appropriate to the country in question and augmented by examples of FIA-informed reforms in other countries. Similar modules could also be developed for research organizations, think tanks, journalists, and general audiences. For a smaller set of actual programmers, customization may entail a module that covers a basic set of prerequisites, followed by in-depth training modules on the core substance of the FIA methodology. Making all of these training courses modular in this manner, and to the extent possible developing e-learning versions of the material, will have several benefits. Trainees can take in the material in a self-paced environment, which should facilitate retention and actual learning. Country teams can use these as starting points and dive deeper into the country-content as needed. Existing cohorts can re-familiarize themselves with the material if they find their skills are getting rusty. Newer cohorts can take the e-learning material off the shelf as the first introduction to the FIA topic.

When hands-on training is offered, it is also better to categorize trainees based on their technical preparation. For example, while conducting a CEQ Institute capacity building in **Ghana**, it was noticed that Ghana Statistical Service staff were highly engaged, but junior to mid-level Ministry of Finance officials were not prepared for the Stata software, and less engaged. Similarly, when conducting a training in **Kenya** for academics from two local universities and officials from the Ministry of Finance and the Government Statistics Office, one interviewed expert observed that some of the trainees were not prepared for Stata and were "lost," and others—especially the younger academics—were very engaged. According to the expert, the counterpart in Kenya agreed that in future trainings, they would divide trainees into groups of technical people and nontechnical people. Training material catering specifically to higher level policy makers can be a good way to identify and nurture champions.

Fiscal microsimulations are a good way to grab the interest of policy makers and induce demand for more tailored analyses.

Fiscal microsimulation tools may be better alternatives for settings in which capacity building efforts have to start with foundational skills such as Stata. Experience suggests that it is easier to train government officials on how to use a fiscal microsimulation tool than how to conduct an FIA assessment. In that sense, microsimulation tools are a more promising approach for clients to use the FIA framework to inform their decision-making. The upfront cost to develop the microsimulation interface is not that high and updating and maintaining a microsimulation tool is likely to be marginally more cost effective than updating a FIA every year.[9] An added advantage for government officials is that while a FIA assessment is a snapshot in time, a microsimulation tool permits ex ante simulation of the likely impact of policy change scenarios in real time, and often multiple times per year.

Building capacity of local think tanks and fostering a community of researchers is a promising alternative strategy to build sustainability.

An alternative strategy to ensure the sustainability of capacity building efforts is to collaborate with think tanks and research universities, and/or nurture a community of local researchers who can work on the topic and produce FIA-type analyses or periodically update microsimulation models and plug those results into policy conversations. This is an area where the CEQ Institute has gained some experience. Trainings offered by the Institute have been devoted almost exclusively to researchers in a variety of local organizations outside of government: universities, research centers, think tanks, consulting firms, and nongovernmental organizations. Similar to working with the government, successful models of local capacity building appear to have placed heavy emphasis on joint work: technical experts working side-by-side with researchers in local organizations to apply the fiscal incidence analysis, doing the quality control, interpreting results, and writing the final report. Similar models could also be applied to microsimulation tools. More recently, the CEQ Institute has also started working through the “Fiscal Equity Lab” model, in which researchers working on similar issues in a country form an affiliation and commit to producing this kind of analysis.

This modality is promising, but it is not without drawbacks. The first relates to funding. Once the initial set up is completed, the institution assuming the responsibility could find itself needing to raise resources to do the necessary updates in later years. Therefore, some continued support from and engagement with entities such as the World Bank, or other agencies such as the CEQ Institute that can raise funds in partnership with these local bodies, may be inevitable. The second challenge relates to impartiality. The World Bank is recognized and trusted by many client governments as a source of unbiased, evidence-based policy advice. The same may not be true for think tanks, universities, and individual researchers working in countries, and a perception of

[9] This is because for the microsimulation tool to stay current, the FIA must be updated periodically. So, the cost advantage is probably not that significant.

partisanship could weaken the uptake of policy recommendations emerging from these analyses. The third challenge relates to access to data. In many settings, even when data exists, research entities may struggle to gain access to the data needed to carry out FIA analysis.

Supporting FIA should be embedded within broader support to the evidence-based policy ecosystem, and investments devoted to strengthening end-to-end solutions (e.g., via boosting country presence) can have large payoffs.

One additional way in which institutions such as the World Bank could be useful is by nurturing a broader ecosystem for evidence-based policy making in low and lower-middle income countries. Such an ecosystem would include, at a minimum, a strong national statistical system that has, among other components, a functioning apparatus to carry out periodic surveys of household living, standards/income expenditure, and the labor force. Thus, supporting national statistical offices in these countries to conduct these surveys at regular intervals is an integral priority. Another part of that ecosystem is boosting capacity within statistical and planning agencies, as well as entities outside of the government, to use data from these surveys to generate insights that can inform and influence relevant policy debates. Investments in FIA can yield a higher payoff if they are embedded in concurrent investments to boost this entire ecosystem.

One of the ways in which ecosystem-wide approaches can be strengthened—at least within the World Bank—is by building teams that are able to provide end-to-end solutions. That means starting from data-collection phases and proceeding to data analysis, policy dialogue, and recommendations, all the while working very closely with government officials. The World Bank's country presence, which is already very strong, can be leveraged further by increasing the footprint and skillset of staff who can actively promote this ecosystem. The mixed success of capacity building notwithstanding, one of the main reasons that FIA engagements have been so deep and impactful in countries like **Indonesia** is the large World Bank team on the ground, which has helped maintain a close and sustained dialogue on fiscal policy and equity, as well as supported several complementary initiatives to strengthen the evidence-based policy-making ecosystem.[10]

The World Bank has always had a "country economist" (an economist in charge of the country desk and leading the fiscal and macroeconomic dialogue) on the ground. Increasingly, "poverty economists" (their micro-analogues) are also being posted to country offices. This represents a great opportunity to make a systemic push toward institutionalizing FIAs in broader policy conversations in countries.

Finally, it is also important to recognize that capacity building is generally a difficult endeavor that can take years of sustained effort. As such, expectations that are set too high, especially in the short run, are likely not to be met. The agenda is vitally important, especially in the coming years,

[10] Jakarta hosts one of the largest World Bank offices in the world. The Poverty and Equity team in Jakarta is the largest cluster of World Bank "poverty economists" outside of Washington, DC. Funding from Australian Department of Foreign Affairs and Trade has been instrumental in supporting this team over the last decade or so.

as countries balance the twin objectives of engineering an economic recovery in the short run while taking preemptive measures to forestall adverse outcomes from ticking time bombs such as climate change—all the while keeping their fiscal frameworks intact and inequality in check. Progress is likely to be incremental, and thus it will be necessary to continue to chip away at this with all the innovative tools and approaches available.

COUNTRY CASE STUDIES

ARGENTINA

Fiscal incidence analysis, and capacity building in this area, have been part of the World Bank's engagement with Argentina since 2016, which followed on earlier pioneering work done by the CEQ Institute. The objective of the Bank's work during two presidential administrations has been to simulate the effects of policies that cushion lower-income segments of the population from budget cuts.

Argentina presents several notable examples of FIA work. It was one of three Latin American countries in which the CEQ Institute, in collaboration with regional think tanks, initially conducted FIA work. The World Bank began conducting its first CEQ assessment in 2016 but had not finished it when Argentina's fiscal crisis began in 2018. Then, the government requested the Bank's assistance to simulate the effects of policies that were sensitive in the midst of financial turmoil and macroeconomic imbalances. Under a time-sensitive context, the Bank embarked in building simulation capacities on the existing CEQ assessment piecemeal under a modular approach, according to one interviewed expert. Also, a change in presidential administration in December 2019, in the midst of the Bank's involvement, didn't stop the government from seeking the Bank's help on FIA work. This highlights how robust technical work can help the Bank collaborate with governments across the political spectrum.

Furthermore, Argentina serves as an example of countries in which the World Bank has successfully contributed to building capacity in the Ministry of Finance, which has helped inform the authorities' internal and external discussion on fiscal policy, the interviewed expert said.

For capacity building, the World Bank has conducted two series of training workshops for technical staff in the Ministry of Finance on how to use microsimulation tools: the first for the former (Macri) administration in 2019, and the second for the current (Fernandez) administration that is ongoing.

Both times, the government staff members had good technical capacity going into the trainings and were engaged during the sessions. Their level of capacity was high and the expert working there noted that the challenge was to gain the trust of the trainees and to be flexible and responsive to work in lockstep with them, as "they are in a strong position to make substantive contributions in the analysis." However, the second group of trainees had little time to work on FIA because they had multiple other responsibilities.

Separately, the CEQ Institute started in the last four years establishing Fiscal Equity Labs of researchers in universities and think tanks who are trained in FIA assessments in the largest Latin American countries: Argentina, Brazil, and Mexico. In Argentina, the Institute is partnering with the Center of Studies for Human Development (CEDH) at the Universidad de San Andres to update the country's CEQ assessment and teaching the CEQ methodology to graduate students. CEQ Institute Director Nora Lustig said the Institute invested in building the capacity of CEDH researchers, who are now able to produce the CEQ studies largely on their own, with occasional advice from the Institute to address specific hurdles.

EGYPT

World Bank work on fiscal incidence analysis in Egypt began in 2017 and blossomed into some of the most extensive capacity building and one of the training success stories globally.

The Bank, working with the CEQ Institute, conducted the country's first CEQ assessment in 2017-2018 and shared the results in early 2019 with the government statistics agency and Ministry of Finance. The ministry staff was interested in understanding which households would be most affected by changes at that time to energy subsidies and the introduction of a cash transfers program. They were also interested in using the microsimulation tool for ex-ante assessment of policy results. The ministry built a team with staff with background in STATA and microeconomics who participated in trainings and learnt how to develop FIA and use the microsimulation tool. The World Bank developed and customized the tool in conjunction with the ministry staff and simultaneously trained the team from January to June 2021. The training involved intensive weekly classes for about 15 Ministry of Finance and Ministry of Planning trainees. About 10 of the trainees started with strong skills.

Egypt is one of the World Bank's capacity building success stories, in which the best results are achieved by close collaboration with trainees during every stage of conducting an FIA assessment, interviewed experts agreed. Since the World Bank developed the tool with the ministry staff (who were experts in the budgeting process) and trained the team at the same time, the Bank was able to adjust the tool based on the client's needs and ensure the tool accurately captured policies. The collaboration was deeper than what the team had initially planned for. This progress reflected the ministry's commitment to understanding distributional impact of policies.

It remains to be seen whether the trainees will be able to update the FIA tool independently. The skills they learnt will be put to use when the underlying data for the microsimulation tool will need to be updated with new household survey data and changes in Egypt's fiscal policy.

A main challenge was the inability of the team to train or address concerns of the ministry staff in person. It was delivered remotely because of the pandemic, which required all parties to be willing to work together online.

There are skilled think tanks and researchers in Egypt who could carry out these types of analyses, but they will need access to the detailed data required.

INDONESIA

Fiscal incidence analyses, specifically using the CEQ methodology, have been a regular part of the Poverty team's programmatic engagement in Indonesia since 2015. The objective of this stream of work has been to enhance the use of improved data and analytics to generate knowledge and build capacity within the Government of Indonesia (GoI) so that it can design fiscal policies that are increasingly inclusive and pro-poor.

This engagement started with preparations for the World Bank's flagship report on inequality in the country*, Indonesia's Rising Divide*, for which the first iteration of CEQ analysis was carried out using data from 2012.[11] The results showed that compared with several other countries at similar levels of development, fiscal policies were accomplishing very little redistribution in Indonesia. The results of the analysis piqued the interests of policy makers. The country had just embarked on a program of fiscal reforms, some of which coincided with the recommendations of the first CEQ report: elimination of poorly targeted fuel subsidies and expansion of cash assistance going directly to the poor. Therefore, the Fiscal Policy Agency (BKF), a research and analysis wing of the Ministry of Finance, was strongly interested in continuing to work with the World Bank (WB) to update this analysis with newer rounds of data, even as the reforms were rolling out. This collaboration culminated in another joint WB-BKF report that took a comprehensive look at reforms that took place 2012-2017 and assessed the extent to which these reforms made Indonesia's fiscal policy more targeted at reducing poverty and inequality.[12] [13] The team continues to update this tool (most recently using data from 2019) and the tool has served as a useful device to generate ex ante insights on the likely adequacy of a portfolio of fiscal stimulus programs that the government introduced in 2020 to mitigate the pandemic's impact on households.

Capacity building has been a key feature of this engagement throughout. This has been delivered in several formats: multi-day comprehensive workshops that combined lectures with hands-on experiences, weekly topical seminars extended over a long period of time, BKF staff secondments

[11] Jellema, J., M. Wai-Poi and R. Afkar (2017). "The Distributional Impact of Fiscal Policy in Indonesia". Commitment to Equity (CEQ) Working Paper Series 40. Tulane University Department of Economics.
[12] Tiwari, S, H. Amir, I. Setiawan, A. Moechtar, A. Rahmawati, F. Adeho-Darko (2021). "Revisiting the Impact of Government Spending and Taxes on Poverty and Inequality in Indonesia". Joint World Bank-BKF Publication.
[13] Several other flagship World Bank publications that came out around the same time prominently amplified the findings of this report. The most notable ones were the Public Expenditure Review, a Social Assistance Flagship and several rounds of the Indonesia Economic Quarterlies.

to the World Bank, and so on. Sustainability has always been at the forefront of all capacity building efforts and over the years, the efforts have produced some successes. Higher-level policy makers are aware of the distributional aspects of any fiscal policy changes under consideration (such as further expansion of cash assistance to the poor and an increase in the tobacco excise tax) and demand analysis that looks at these issues. Technical staff are able to independently dive into household survey data, pull out relevant material, conduct an analysis, and from that, produce materials such as policy memos, presentations to parliament, and inputs for speeches. However, it has been a challenge for these trained staff members to implement the full CEQ methodology, from start to finish, without World Bank assistance. Of everyone trained over the years, there are probably only one or two staffers who were able to do that independently.

A combination of factors is responsible for this mixed success. First, the CEQ methodology is complex and requires a high level of proficiency not only with STATA, but also with the manipulation of large household survey data. Second, most technical staff at the BKF are drawn from the macroeconomic pool and find both hurdles difficult. Considerable efforts have been devoted to bolstering basic STATA skills. Third, within the various BKF divisions and across the Ministry of Finance more broadly, trained staff can be rotated to a division where their CEQ skills are not used, and the new staff members that replace them require new training.

The takeaway is that while the World Bank's engagement has strengthened demand for distributional analysis of fiscal policy from the highest levels of Indonesia's government, building full internal capacity to carry out the analysis has remained a challenge. In response, the country team has considered two strategies. The more advanced one obviates the need to work with STATA on complex data manipulation, by switching to use of fiscal microsimulation tools. These tools enable policy makers to interact with the models to carry out forward-looking counterfactual policy scenarios using user-friendly interfaces that are based on Excel or R-Shiny without having to get into the nitty-gritty of the modeling. While this approach has its advantages, one lingering drawback is that it would still require an entity such as the World Bank to "refresh" the model every couple of years to keep it updated. The second strategy is to determine whether independent think tanks in Indonesia with strong capacity for this type of analysis, such as SMERU, can take on this task. This idea has not been thoroughly explored but is not without precedent: poverty maps that the World Bank produces in many other countries are produced by SMERU in Indonesia.

MOROCCO

Work on fiscal incidence analysis began in 2019 in Morocco, which is noteworthy for being the most actively engaged country in this work. The 2019 CEQ assessment was suggested and funded by the Agence Français de Développement (AFD) and the European Union, and the CEQ Institute and AFD provided the fiscal experts. Moroccan government counterparts came from the Ministry of Economy and Finance (MEF) and the National Observatory for Human Development

(ONDH), which collects and analyzes survey data. These counterparts took over the production of the assessment, with some technical guidance from the consultants. In some ways, this was a consequence of the fact that Morocco would not share the survey data needed for the analysis with outside parties. The consultants provided guidance about what the programs should look like, and the counterparts wrote and ran the code themselves. When the counterparts encountered issues, they sent the consultants their output and the consultants made suggestions to fix the issue. The consultants also discussed how to interpret results (in Morocco and elsewhere) and how to simulate policy changes.

The fiscal experts spent two weeks in February 2019 training a handful of staff from MEF and ONDH. All three factors necessary for capacity building to succeed were present in this case: existing capacity, enthusiastic and engaged local counterparts, and a local champion who could understand and promote the long-term utility of FIA at the policy level, an interviewed expert said.

Its initial success notwithstanding, Morocco faces a few challenges with sustaining FIA going forward. First, after MEF and ONDH were satisfied in 2019 that they had a finished product, there was very little follow-up afterward and no public planning for the next round of FIA. This presents the risk that the built capacity in FIA will atrophy because it is not practiced. Some technical skills required in FIA assessments are so specific that anyone not doing the exercises on a regular basis would quickly start forgetting the techniques. Second, STATA isn't a free software and Morocco would need to pay to use it. Third, while the Moroccan trainees have the capacity to conduct this kind of analysis, like in other countries, their exceptional level of skills creates overwhelming demands on their time, and therefore, they are busy juggling many other priorities, an interviewed expert said.

SOUTH AFRICA

South Africa was one of the earliest countries where the World Bank conducted fiscal incidence analysis and capacity building, and it also provides an example of a successful model of inclusive engagement during the assessment process.

In 2013, the World Bank began collaborating with the CEQ Institute to conduct FIA assessments, with the objective of expanding the Institute's work in Latin America to the rest of the world. South Africa was one of five countries where the joint Bank/Institute work started. The Bank funded South Africa's first CEQ assessment, conducted by a local university professor in 2015. The Agence Français de Développement (AFD) funded an update in 2020, conducted by the CEQ Institute. Both times, the National Treasury helped produce the assessment, with more ministries becoming involved in round 2. The 2020 assessment's objective was to explore options for the replacement of COVID-19 emergency relief grants.

The 2020 assessment also was also notable because the lead CEQ Institute consultant, a South African national, significantly expanded engagement during the process. The assessment team conducted workshops to solicit feedback on the initial data run from officials belonging to different units of the National Treasury (education, health, water and electricity, and taxes), plus the Housing Ministry, the Department of Women, and civil society groups. This strengthened the results of the analysis and fostered broader ownership of it. In the end, the National Treasury, which already used administrative data in its budget process, adopted FIA assessments as a useful framework to think about poverty and inequality more coherently. This inclusive process was later replicated in East Timor.

The World Bank began training governments in how to conduct the FIA assessments starting in 2015, with South Africa and Indonesia the first two countries. In South Africa, the university professor who conducted the 2015 assessment for the Bank also provided two days of high-level training about FIA for 30-40 people from various units of the National Treasury. After the 2020 assessment, the United Nations University World Institute for Development Economics Research (UNU-WIDER) funded technical training of three staff members from the National Treasury over two weeks in June 2021. The training was conducted by Southern African Labour and Development Research Unit (SALDRU), an academic think tank housed in the University of Cape Town.

The National Treasury officials who requested the 2021 training wanted their employees to be able to independently run the model, which wasn't realistic, interviewed fiscal experts said.

The trainees were too busy to undertake the full training required for this goal, which would have been a few months long. Also, the trainees lacked basic skills in STATA programming. That said, the three trainees were very engaged, and in the end, they conceptually understood what was going on and could think critically about the assessment results. For example, they suggested a change in STATA that the World Bank later implemented, an interviewed expert said.

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