# BRIDGING NOTE | DIALOGUES TO MODELLING:
## HOW-TO GUIDES FOR THE SDG PUSH: AN INTEGRATED APPROACH TO ACCELERATE THE SDGS

## Overview

**This document provides a How-To Guide for the transition from Dialogues to Modelling.**

How to move from one phase to the next is important to ensure that (1) each step is informed by the findings and guidance of the previous step and (2) the steps in the process are not produced in silos. In order to ensure coherence and follow a systematic approach, it is as important to think about the transitions between phases as it is about the phase itself.

## STEP 1 —MODELLING

### WHAT IS MODELLING?

Modelling is essential for analysing development strategies at the national and sub-national levels. In the SDG push framework, modelling will consist of designing an analytical tool to (i) conduct a prospective analysis of SDG accelerators, (ii) find the optimal policy options considering trade-offs, and (iii) present a prioritization of options.

### WHO WILL CONDUCT THE MODELLING?

The modelling approach is participatory and democratic. It will be led by an Economic Modelling Expert with the rest of the SDG Push core national team and the national stakeholders identifying what the scenarios will be.

### MODELLING FOR DEVELOPMENT PLANNING

There are different models one can apply to analyse the effects of specific policy interventions. One example is integrated assessment modelling that helps decision makers understand complex socio-economic and environmental problems. Its main strength lies in the ability to calculate the consequences of different assumptions and to interrelate may factors simultaneously. One example where such modelling approach is used is the application of International Futures (IF) model to explore the long-term impacts of COVID on prospects for reaching the SDGs and of potential for extensive efforts to overcome pandemic damage and accelerate goal attainment. IF model can be applied to specific region or country. Recently, IF model was applied to estimate the pathways to universal electricity access and the costs associated with specific interventions.
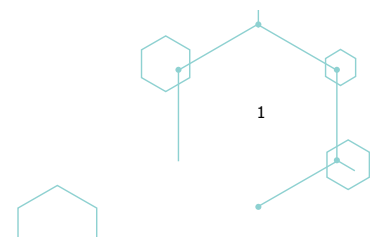
Computable general equilibrium models can be used to build a case for policy intervention and assist policymakers to understand the extent to which some sectors of the economy might be affected by change. Its main advantage is its flexibility that focuses on the structure and detail of agent-specific behavior and allows to capture detailed economic relationships and connections that would be otherwise be missed in other type of models. This complexity allows the models to be applied to a wide range of 'what if' questions.

For example, in developing contexts an applied CGE-based modelling framework called MAMS (Maquette for MDG Simulations) has been developed by the World Bank in 2004 to analyze policy options aimed at achieving Millennium Development Goals (MDGs) by 2015, with Ethiopia as the pilot country. Since its inception, MAMS has been implemented in more than 40 countries with strong involvement of UN Department of Economic and Social Affairs. In developed countries like Australia, ORANI model (a CGE model) and its extensions have been widely implemented by the government for practical policy analysis.

Computable general equilibrium models can be completed by the survey-based microsimulation models for distributional and poverty analysis. Microsimulations are based on household survey data, and they have been implemented to analyze the effects of policy reforms such as tax-benefit system, changes in market regulation or other targeted policies. For example, in the MAMS framework a microsimulation module is developed to analyze the effect of MDGs scenarios on poverty and inequality. Furthermore, the World Bank's Global Income Distribution Dynamic (GIDD) model combines a microsimulation model and a CGE model (LINKAGE or its successor ENVISAGE) of world economy. The GIDD model covers survey data for 132 countries representing nearly more than 90% of world population[1].

Apart from general equilibrium models, evaluation of a policy can also be assessed via partial equilibrium models that allow us to predict changes in key economic variables of interest, including prices, the volume of trade, revenue, and measures of economic efficiency. Their main advantage is that they can be applied at a very disaggregated level. One such example is the SEAS model which is designed to carry out distributional analyses of consumers' subsidies and simulations of subsidies reforms. The model estimates the impact of subsidies reforms on household welfare, poverty and inequality and the government budget with or without compensatory cash transfers and can be applied not only to energy subsidies, but also to food and water subsidies.

**WHICH MODEL WILL BE APPLIED TO THE SDG PUSH?**

To model the SDG Push, we assume the accelerators will not only have sectoral but also general equilibrium effects. Partial equilibrium models can be applied to some of the interventions but the accelerators that we expect to have impact across multiple SDGs will have general equilibrium or macro effects.

We do not specify a model but provided guidance on how to extend some of the standard general equilibrium models such as the computable-general equilibrium models to analysing SDG pathways. Other macro micro models can also be applied but may need to be extended to allow for the outcomes in the SDGs.

**WHAT IS REQUIRED AS OUTPUTS FROM THE DIALOGUES FOR INPUTS INTO THE MODELLING?**

The Economic Modelling Expert should be involved in the Dialogue listening in to the pain points and various voices. This will be important to contextualize the SDG Push accelerators that will come out of the Dialogue.

The following key information will be important for the modelling:

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[1] Dixon, P. B., & Jorgenson, D. (Eds.). (2012). Handbook of computable general equilibrium modeling (Vol. 1). Newnes.
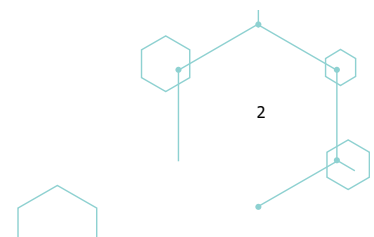
- From the Dialogue: Potential SDG accelerators which represent opportunities for progress toward the SDGs. The accelerators will help conduct the analysis of growth scenarios and/or policy options.
- From the Scoping and Dialogue: Test potential synergies or interconnections between accelerators.
- From the Costing exercise: the cost of implementing the SDG Push accelerators.
- From the SDG Financing: The information on the potential schemes for financing the required investments in the SDG Push will be critical for the modeling. This will allow the constraint of financing the acceleration of the SDGs to be factored into the modeling process. However, the modelling exercise can also analyze potential financing options. Use of potential schemes for financing the required investments under SDG push scenario.

**WHAT RESOURCES ARE AVAILABLE IN THE SDG TOOLBOX TO GUIDE MODELLING?**

- [Framework on the Application of Macro-Micro Economic Models to SDG Acceleration](#)
- [A Brief on Participatory Modelling](#)

**WHAT ARE THE OUTPUTS FROM THE MODELLING?**

The main output from modelling will be a set of evidence-based policy measures that could effectively catalyse the achievement of the SDGs. These policy interventions can then serve as inputs for the development of pragmatic investments plan at country level.

**WHAT IS THE TIMELINE FOR COMPLETING THE MODELLING?**

Depending on data availability and the number of accelerators to be assessed, the modelling can be carried out over a period of two to four weeks.
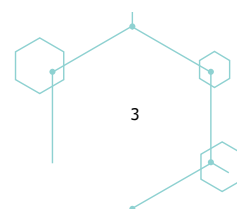
## ANNEX:

**Professional profile of the Modelling Expert**

**Functional Competencies**:

- **Professionalism**- In-depth understanding of economic theories, principles, and application; demonstrated technical knowledge and proven research and analytical skills on issues related to regional integration, macroeconomic convergence, financial and monetary integration, social protection, sectoral policies as well as international development economics; ability to interpret and apply results of econometric techniques and modeling (including CGE) to analysis of economic prospects and policies.

- **Teamwork**- Good interpersonal skills; ability to establish and maintain effective working relations with people of different national and cultural backgrounds.

- **Communication**- Good interpersonal skills; excellent drafting ability and communication skills, ability to present complex concepts in a concise and accurate manner, ability to prepare written reports and papers that are clear, concise, and meaningful.

- **Planning and Organizing -** ability to prioritize, plan and organize own work and ability to integrate work into the work of the unit; ability to monitor and adjust plan and priorities as necessary and to work according to deadline

**Education:**

- Advanced University Degree in economics, development economics or social sciences with an emphasis on macroeconomics, Macroeconomic modelling, and Computation of CGE models.

**Experience:**

- At least 10 years' experience in economic modelling, policy analysis in development contexts (required);

- Related work experience in at least one of the pilot countries (required);

- Extensive experience in modelling and policy analysis using simulation tools and quantitative analysis methods with internationally recognized Academic Intuitions or Research Think Tanks (required);

- Expertise in designing, constructing and application of dynamic CGE modeling (required);

- Knowledge of the SDGs and their application at the national level (required);

- Experience working across developing regions (desirable);

- Professional experience with a UN agency (desirable).

**Language**:

- Fluency in English (required);

- Knowledge of another UN language or local language (desired).