

TERMS OF REFERENCE

“NATIONAL CONSULTANT TO SUPPORT INTERNATIONAL CONSULTANT ON
INCORPORATING NATIONAL TRANSFER ACCOUNTS INTO MACROECONOMIC MODEL,
POPULATION AND ECONOMIC POLICY SCENARIO SIMULATION, AND CAPACITY BUILDING
OF GOVERNMENT INSTITUTIONS”

TERMS OF REFERENCE (to be completed by Hiring Office)	
Hiring Office:	UNFPA TAJIKISTAN
Purpose of consultancy:	<p>I. Introduction</p> <p>The outbreak of Covid-19 pandemic in Tajikistan has amplified its multi-faceted vulnerabilities and precariousness to shocks. Beyond its immediate public health impact, the protracted nature of this pandemic is drastically slowing down the economy, jobs are being lost, and the state faces a tight fiscal space. Tajikistan did not go for a complete lockdown but closed its borders and airport and briefly stopped mass gatherings. However, even these partial measures have significantly impacted this low-income and socio-economically fragile country. According to the latest estimate, Tajikistan's economy is likely to shrink by 2 percent in 2020.¹ It will be a major setback considering that the economy has recorded a growth rate of around 7 percent in the last five years. Due to economic slowdown and shortfall in revenues, fiscal gap will further widen to 7.7 percent of GDP.² Many Tajik workers are engaged in the informal economy and subsistence agriculture. Personal remittances from Tajik migrants which are an important source of household income has already seen a 20 percent decline in the first quarter of 2020.</p> <p>UNFPA joint UN effort on macroeconomic response to Covid-19 within Integrated Socioeconomic Response Framework (ISEF) for the period 2020-2021. As a part of the effort UNFPA will provide technical assistance to the Government of Tajikistan on analysing the variation in the economic lifecycle and the intergenerational economic systems, macroeconomic effects of population changes, and improving policy related to pensions, health care, education, and fertility. In this regard, national transfer accounts (NTA) and CGE model will be used. NTA are widely used which constitute a complete, systematic, and coherent accounting of economic flows from one age group or generation to another. Given the importance of spending on education and health, an analysis using CGE model with incorporated NTA model will be important in policies, medium-term expenditure framework and medium-term budgetary framework under status quo and alternative scenarios.</p> <p>As a part of continuous capacity building and knowledge management effort UNFPA Country Office in Tajikistan is initiate to develop CGE model and incorporate into it the first National Transfers Account model for further analysis.</p> <p>UNFPA Tajikistan is looking for a National Consultant to support International Consultant on developing CGE model and incorporating NTA model into it, conducting analysis and training on model development, use, update, scenarios simulations and developing policy recommendations. National Consultant will also provide support to International Consultant on knowledge sharing to beneficiaries and will provide a comprehensive range of serviced for the purposes of this assignment.</p>

¹ <https://www.imf.org/~media/Files/Publications/CR/2020/English/1TJKEA2020001.ashx>

² Ibid

<p>Scope of work:</p> <p>(Description of services, activities, or outputs)</p>	<h2>II. Duties and Responsibilities of Consultancy</h2> <p>A. <u>Support International Consultant and national team in preparation of the National Transfer Accounts (NTA) Report and be responsible on developing report with national NTA team in Russian and evaluate the impact of population change on the sustainability of public finances</u></p> <ul style="list-style-type: none"> • Support International Consultant and NTA team in compiling the first version of the NTA: analysing the variation in the economic lifecycle and the intergenerational economic systems, macroeconomic effects of population aging, and improving policy related to pensions, health care, education, and fertility. In this regard, national transfer accounts (NTA) are widely used which constitute a complete, systematic, and coherent accounting of economic flows from one age group or generation to another. Given the importance of spending on education and health, an analysis of NTA will be important in policies and medium-term expenditure framework. • Support International Consultant on preparation of NTA Report and Policy Brief and be responsible for development of Report in Russian: at the high-level meeting in close collaboration with the national consultant and NTA team (representative of Institute of economy and Demography, MEDT, Ministry of Labor, Migration, and Employment of Population (MLMEP) and Labor Research Institute (LRI) under MLMEP. <p>B. <u>Support International Consultant to enhance the capacity of the below mentioned public institutions in using the econometric and modeling techniques</u></p> <ul style="list-style-type: none"> • Support International Consultant on econometric and modeling techniques training under EViews (from beginners to intermediate and intermediate up to advanced) for representative of Institute of economy and Demography (IED), MEDT, Ministry of Labor, Migration, and Employment of Population (MLMEP) and Labor Research Institute (LRI) under MLMEP • Support International Consultant on Develop curriculum based on available free online resources provided by IHS Markit (EViews) with special emphasis on following five areas of econometric analysis, forecasting and modeling: <ul style="list-style-type: none"> ○ <u>Basic EViews techniques:</u> data analysis and graphing, estimate equations by regression, forecasting form equations, models building, including various scenarios (training program designed in particular for beginners). ○ <u>Stationarity and structural breaks:</u> analyze issues related to (non)stationarity of macroeconomic time series, then determine the appropriate modeling methodology, for example cointegration with error correction, and use it under EViews (designed for intermediate up to advanced): ○ <u>Building and solving simulation (CGE) models in EViews.</u> Conduct policy analysis within a general equilibrium framework, i.e. to process a SAM, specify and the calibrate the model, and run simulations. ○ <u>Deliver a facility under EViews for modeling COVID-19 economic policy measures</u> in combating the socio-economic impacts of the pandemic (designed for economic policy makers or academics). This activity is more elaborated under objective 4. ○ Support trained staff on their analysis based on their annual and five-year research plan to ensure <u>using econometric and mathematical modeling techniques on demographic and socio-economic analysis.</u>
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- **Support International Consultant on training program implementation:** 7 days to be scheduled for each area of econometric analysis, forecasting and modeling.

C. Support International Consultant on building a CGE model for addressing key structural population and economic policy issues

- **Support International Consultant on selecting the type of general equilibrium model** depending on the tasks envisaged for its use (static vs. dynamic recursive model or dynamic stochastic general equilibrium model).
- **Support International Consultant on data compilation:** for CGE modeling in Tajikistan, the following data sources will be utilized to create database for the model:
 - input-output table,
 - national accounts by institutional sectors and sub-sectors,
 - aggregated social accounting matrix (SAM) and National Transfer Accounts (NTA),
 - compilation of household data (incomes, transfers, consumption, savings, taxes) by group classification, and
 - foreign trade and balance of payments.

These data-sources to be used to compile a disaggregated social accounting matrix which is the main data input into the model. The compilation of the data and the problems encountered in the process to be solved by econometric and statistical methods.

- **Support International Consultant on elaborating the model structure:** Develop a model structure reflecting the requirements set on the model type. Propose the level of disaggregation of five main accounts (factors of production, Institutions or agents, commodities, industries and accumulation) in the SAM.
- **Support International Consultant on calibration, solution and validation of the model:** having made the model selection and constructed a data set in the form of a SAM, the next step is to solve the model by finding parameters and elasticity values to feed its equations. This activity consists of computing of SAM-based parameters, elasticities, and exogenous variables.
- **Support International Consultant on Population, Fiscal and Economic Policy simulations:** description of simulations, building scenarios. Specify model closures. Introduction in dynamic simulations in case the dynamic GE models will be selected.
- **Support International Consultant Develop a CGE Model** based on the SAM and NTA models with a running interface in MS Excel that allows users to update and run the model without paying significant attention to the Eviews coding behind.
- **Support International Consultant on conducting training on SAM** compilation based on Input-Output Tables and its upgrading/adapting to the current economic structure
- **Support International Consultant** on conducting training on employing, updating, and scenario simulations using **CGE Model**
- **Support International Consultant on proposing a set of scenarios** that will be useful and applicable for a quickly changing economic environment.
- **Support International Consultant on considering the possibility of incorporation of the NTA model into production and trade models** currently employed at MEDT.

D. Support International Consultant on the assessment of economic shocks, including Covid-19 impacts, but not limited to, on population by age group and sectors of the economy based on GE and NTA models

- **Support International Consultant on the assessment the variation in the economic lifecycle** and the intergenerational economic systems.

	<ul style="list-style-type: none"> • Support International Consultant on assessment of macroeconomic effects of change on population structure and population change. • Support International Consultant on improving policy related to pensions, health care, education, and fertility. • Support International Consultant on preparation of the set of recommendations regarding the importance of spending on education and health, and medium-term expenditure framework.
Duration and working schedule:	The duration of the contract: February 10, 2021 – December 31, 2021
Place where services are to be delivered:	Home-based and premises of beneficiaries in Dushanbe, Tajikistan
Delivery dates and how work will be delivered (e.g. electronic, hard copy etc.):	<p>The estimated working day per this assignment is 190 working days.</p> <p>First deliverables:</p> <ul style="list-style-type: none"> • <u>by the 10th of April 2021:</u> First Draft and final NTA Report and Policy Brief elaborated. Establish a powerful tool for academic and policy-oriented analysis of societies where the age and composition of population matter. To constitute the framework for simulating the role of the demographic structure of taxes and public transfers in the General Equilibrium modeling. <p><u>Inputs in terms of allocated working days:</u> 35.</p> <p>Second deliverables:</p> <ul style="list-style-type: none"> • <u>by the 20th of March 2021:</u> Training program curriculum developed based on the training needs assessment, proposal made on the type of the CGE model, including its general characteristics, review the work done so far on the Social Accounting Matrix (SAM), assess the methodological approaches used in data compilation, identifying data gaps. <p><u>Inputs in terms of allocated working days:</u> 40.</p> <p>Third deliverables:</p> <ul style="list-style-type: none"> • <u>by the 20th of May 2021:</u> The training program delivered according to the approved curriculum and related implementation plan (supportive training documents elaborated), the SAM built for CGE modelling purposes, proven progress made in the CGE model construction (calibration, solution and validation of the model). <p><u>Inputs in terms of allocated working days:</u> 40.</p> <p>Fourth deliverables:</p> <ul style="list-style-type: none"> • <u>by the 20th of July 2021:</u> The CGE model elaborated, description of building scenarios and policy simulations. The mechanics of General Equilibrium model explained, including intertemporal model links. Training program delivered according to the implementation plan. <p><u>Inputs in terms of allocated working days:</u> 40.</p> <p>Fifth deliverables:</p> <ul style="list-style-type: none"> • <u>by the 30th of September 2021:</u> The CGE model User's Guide produced. This document should demonstrate in more detail how the social accounting matrix was assembled, model specification, illustrative policy simulations using various model closures, etc. Training program delivered in compliance with the implementation plan. • <u>by the 31th of October 2021:</u> Assessment of Covid-19 impacts on population and sectors of the economy based on CGE (special

	<p>model scenario built for this purpose). Training program implemented. Prepare a Report and Policy Briefs (draft and final). Training program implemented.</p> <ul style="list-style-type: none"> • <u>by the 20th of December 2021</u>: Present all deliverables at the high-level meeting. Comments incorporated to the produced documents, including the CGE and model and SAM. Training program delivered according to the implementation plan. <p><u>Inputs in terms of allocated working days: 35.</u></p>
Monitoring and progress control, including reporting requirements, periodicity format and deadline:	<p>Consultant's performance will be evaluated based on deliverables indicated in section above and monthly report on progress made</p> <p>The overall assignment report, final reports for each deliverables and policy briefs in Russian will be submitted for the attention of UNFPA CO, MEDT, IED, MLMEP, LRI of MLMEP.</p>
Supervisory arrangements:	The national consultant will work under overall supervision of the International Consultant and UNFPA CO Programme Analyst on Population and Development.
Expected travel:	Travel is not is expected
Required expertise, qualifications and competencies, including language requirements:	<p>VII. Competencies</p> <ul style="list-style-type: none"> • Excellent analytical and research skills. • Good technical writing skills • Experience on building macroeconomic models for medium-term expenditure framework (MTEF) purposes in developing countries, including the corresponding database compiling. <p>VIII. Required Skills and Experience</p> <p>Education:</p> <ul style="list-style-type: none"> • PhD or Candidate of Science (advanced degree) in economy, math, demography, sociology and/or another related field. <p>Experience:</p> <ul style="list-style-type: none"> • At least 7 years of specific professional experience in conducting analysis based on macroeconomic modelling and analysis, and System of National Accounts (SNA). • Familiarity with econometric modelling and mathematical modelling techniques. • Familiarity with macroeconomic modelling techniques. • Working experiences with government institutions in Tajikistan. • Knowledge of Tajikistan's socioeconomic development is must. • Familiarity with mathematical and statistical software and experience of their employing on micro- and macro modelling exercises <p>Languages:</p> <ul style="list-style-type: none"> • Be fluent in English, Russian and Tajik with strong presenting and writing skills.
Inputs / services to be provided by UNFPA or implementing partner (e.g. support services, office space, equipment), if applicable:	UNFPA CO will provide necessary support services to the International Expert at all stages of the activity.
Other relevant information or special conditions, if any:	n/a