

## TERMS OF REFERENCE FOR CONSULTANTS

1. A team of individual consultants will be engaged to support the implementation of the TA. Approximately 22 person-months of international and 20 person-months of national consulting services will be engaged during the technical assistance (TA) implementation period. The total indicative person-months allocation and terms of reference are set out below.

### A. International Consultants

2. **Statisticians** (10 persons-month, intermittent). The consultants should be statisticians or economists, with at least 7 years of experience in the area of compilation of official statistics, including the System of National Accounts (SNA). The knowledge and experience of SNA practices of the former Soviet Union countries, as well as the challenges associated with the transition to the *SNA 2008*, is preferred. The consultants should demonstrate understanding of the use of statistical information for the evidence-based economic and social policy making. The specific responsibilities of the consultants will include but not be limited to the following:

- (i) closely collaborate with the ADB project team and the consultants of the KSTA *Data for Development* in identifying the current needs and gaps in the national statistical systems of the CWRD developing member countries (DMCs), and designing an appropriate assistance response;<sup>1</sup>
- (ii) provide tailored assistance to the CWRD DMCs in the challenges identified (for example, support for the construction and improvements in the constant price Supply and Use Tables and Input-Output Tables, capital formation segment of the SNA, bilateral trade matrices within the SNA, labor market indicators including the self-employed individuals, and others);
- (iii) design regional activities (e.g., those covering several countries) as appropriate and as feasible;
- (iv) provide technical guidance and train staff of participating DMCs on the needed methodologies and techniques for the improvement of SNA and the transition toward SNA 2008, and improvement of other statistical indicators; and
- (v) contribute to regional or country technical workshops to improve the statistical work and evidence-based policy making.

3. **Macroeconomist** (5 persons-month, intermittent). The consultant must be a macroeconomist specialized in forecasting with an experience of at least 5 years, using a wide array of statistical and econometric techniques with emphasis on GDP or inflation forecasting. The consultant should be familiar with near-term forecasting (NTF) or nowcasting techniques. The specific responsibilities of the consultant will include but not be limited to the following:

- (i) identify, together with the project team and the participating DMCs in this component of the KSTA, the current state of nowcasting used by these DMCs and the challenges faced in this work; document these findings in a report;
- (ii) compile the flow of conjunctural data relevant to assess the state of the economies in participating DMCs; reconstruct the flow of releases that are monitored by market participants and policy-makers;
- (iii) seek appropriate details and clarifications from the participating DMCs and summarize the findings from the review of a broad panel of economic activity indicators, that will be used for a model-based NTF analysis;

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<sup>1</sup> ADB. 2017. *Technical Assistance for Data for Development*. Manila.

- (iv) advise the participating DMCs for further development of the NTF of gross domestic product (GDP), inflation and other key macroeconomic variables, including the use of dynamic factor models;<sup>2</sup>
- (v) Provide technical guidance and train NSO staff of participating DMCs on the implementation of the appropriate NTF strategy and ensure that the model can be continuously updated as new data get released; and
- (vi) Contribute to regional or country technical workshops to discuss the NTF work.

4. **Big Data Expert** (up to 2 person-month, intermittent). The consultant should be an economist/econometrician/statistician/or data scientist with previous experience in using big data to complement conventional data sources of official statistics. In particular, the consultant should have experience and expertise in predictive data analysis for macroeconomic monitoring and nowcasting for selected macroeconomic variables. Previous experience on web-scraped and other types of big data to improve the reliability of official statistics is preferred. The specific responsibilities of the consultant will include but not be limited to the following:

- (i) review and evaluate the availability, sources, specific characteristics and the use of big data of participating DMCs and identify the big data which could be adopted for real applications, in particular macroeconomic monitoring and nowcasting of selected macroeconomic variables. This could be financial markets data, electronic payments data, mobile phones data, sensor data, satellite images data, scanner prices data, online prices data or social media data.
- (ii) acquire and/or compile innovative data that will be useful for the project;
- (iii) based on acquired innovative data sources, identify big data categories that seem particularly promising and appropriate for prediction of selected macroeconomic variables; and
- (iv) provide technical guidance and train NSO staff of participating DMCs on the processing of innovative data sources.

5. **Economists and knowledge events facilitators** (up to 5 person-months, intermittent). Various experts with at least 10 years of experience in their respective fields will be engaged on an intermittent basis to assist with the production and facilitation of knowledge products and services (KPS) based on requests formulated by CWRD DMCs under Component 1 of the TA and channeled through CWRD Resident Missions. Consultant profiles will be detailed in the individual project proposals. Their specific assignments may include the following:

- (i) assist, in cooperation with ADB staff, to the preparation of economic, sector, and thematic studies; and papers, guidelines, briefs, notes, articles; and blogs;
- (ii) contribute to policy dialogue on undertaken analyses and studies; and
- (iii) serve as resource speakers and facilitators for knowledge-sharing events, conferences, seminars, workshops, policy dialogues, and training programs.

## B. National Consultants

6. **Economists or Statisticians** (up to 8 person-months, intermittent). The consultants should be economists or statisticians, or graduate of related discipline with previous experience working in one of the following areas: compilation of official statistics; national accounts and extended national accounts; big data; labor market indicators; and others. The knowledge and experience of SNA practices of the former Soviet Union countries, as well as the challenges associated with the transition to the *SNA 2008*, is preferred. Experience in database management

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<sup>2</sup> This may include how to use the model to decompose changes in long-run evolution of selected macroeconomic variables into their underlying drivers; compare the new forecasts with simple univariate autoregressions, small vector autoregressions, and leading indicator models; and other relevant activities.

including statistical databases and applications is also preferred. The consultants should also have project management experience as they will assist the project officer in implementation of the TA. Other detailed responsibilities of the consultants will include but will not be limited to the following:

- (i) assist the ADB project team and international consultants in implementing the Components 2 and 3 of the TA;
- (ii) assist in collecting information on official statistics and big data for the analytical work under the TA;
- (iii) process survey, census, and administrative data as needed;
- (iv) assist in preparing communications and coordinating with national statistics offices;
- (v) provide technical documentation of the activities under the TA; assist in organizing TA technical meetings and/or workshops and preparing meeting and/or workshop documents; and
- (vi) perform other tasks as needed.

7. **Data analysts** (up to 6 person-months, intermittent). National consultants will be hired on an intermittent basis to assist with data gathering and analysis in support of the components 2 and 3 of the TA. The analysts will possess a master's degree in economics, statistics, econometrics, mathematics, or a related subject. The data analysts will have at least 5 years of experience in the field, and assist in performing the tasks listed below and other reasonable assignments provided by the task manager:

- (i) assist in compiling and/or acquiring innovative data sources in CWRD DMCs that will be useful for the project;
- (ii) process data and generate analytical results and organize these in tables and charts;
- (iii) draft interpretations of analytical results and explore policy implications of analytical results;
- (iv) assist the study team in other data processing requirements or literature reviews;
- (v) provide logistics and administrative support for project activities (e.g., conferences and workshops); and
- (vi) perform other tasks relevant to the study or as may be assigned.

8. **Economists and knowledge events organizers** (up to 6 person-months, intermittent). Experts with at least 5 years of experience in their respective fields will be engaged on an intermittent basis to assist with the delivery of KPSs based on requests formulated by CWRD DMCs under Component 1 of the TA and channeled through CWRD Resident Missions. Consultant profiles will be detailed in the individual project proposals. Their specific assignments may include the following:

- (i) contribute, in cooperation with ADB staff and relevant international consultants, to the preparation of economic, sector, and thematic studies; and papers, guidelines, briefs, notes, articles; and blogs;
- (ii) facilitate, as appropriate, conferences, seminars, workshops, policy dialogues, and training programs; and
- (iii) organize various knowledge-sharing events, in cooperation with ADB staff and international consultants.

### **C. Resource Persons** (up to 2 person-month, international or national, intermittent)

Resource persons will be engaged to participate as presenters, discussants or facilitators in the workshops, seminars, launch activities, and conferences, as needed. The resource persons would be economic/sector experts, macroeconomists, data experts, statisticians, or experts in other related fields covered by the TA.