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Statistics Department

MONTENEGRO

TECHNICAL ASSISTANCE REPORT ON THE NATIONAL ACCOUNTS STATISTICS MISSION
(September 10–17, 2014)

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ACRONYMS

CPI	Consumer price index
IMF	International Monetary Fund
MONSTAT	Statistical Office of Montenegro
PPI	Producer price index
QNA	Quarterly national accounts
SUT	Supply and use table
VA	Value added

EXECUTIVE SUMMARY

In response to a request from the authorities, a follow-up national accounts statistics mission visited Podgorica during September 10–17, 2014 to assist the Statistical Office of Montenegro (MONSTAT) in compiling annual and quarterly national accounts (QNA). This current mission is part of the IMF Statistics Department's project for developing capacity to compile real sector statistics in Eastern Europe, funded by the government of Japan. The mission worked with the authorities on compiling the annual GDP for 2013. It provided assistance in reconciling the estimates by production and by expenditure approach at current and at constant prices.

Annually, MONSTAT compiles and disseminates GDP by expenditure and by production at current and at constant prices. The expenditure aggregates at current prices are derived with sound techniques, using the commodity flow approach. Current price aggregates are compiled at a sufficiently detailed level. The volume measures are derived by deflation at the most detailed level using appropriate price indexes. The quality of the annual GDP expenditure aggregates in both current and constant prices is good.

Annual GDP production estimates at current prices are compiled from the annual national accounts survey supplemented with administrative data (financial statements of enterprises, tax data, and government budget data). The accuracy of the production side aggregates at current prices is good. The estimates are adjusted for exhaustiveness and then reconciled with the expenditure aggregates. The statistical difference between GDP by production and GDP by expenditure is less than 1 percent.

However, the volume measures of GDP by production approach are derived by extrapolation with single indicators (except for agriculture where the double indicator method is used). The accuracy of the indicators used is not satisfactory. The reconciliation of the production and expenditure estimates of GDP at constant prices revealed many data weaknesses in the GDP by production approach. MONSTAT needs to improve the availability and the accuracy of its price and business statistics (agriculture, forestry, construction, trade, transportation, other services), which are the main inputs for compiling GDP volume measures by production approach.

MONSTAT has developed a compilation system for quarterly GDP by expenditure approach using the same sources and methods as the annual ones. At present, current and constant price (previous year) estimates for 2010–13 are available. The accuracy of these experimental estimates is good. However, the staff needs more experience for real time compilation and more training on compiling chain-linked volume measures. Time series for 2010–14 of quarterly GDP at current and at constant prices will be released in March 2015.

The mission was informed that MONSTAT has started a pilot project (funded by the European Union National Instrument for Pre-Accession program) on developing supply and

use tables (SUT). The project plans for data collection in November 2014 and for compilation of experimental SUT by July 2015. It is the mission's view that (1) the quality of these SUT is questionable due to the short deadline; (2) the timing of this project could have been delayed to give more time for real time compilation of QNA; and (3) MONSTAT should reprioritize the implementation of different donor projects and focus on developing a sound QNA compilation system.

Staff resources for compiling economic statistics are extremely limited. The accession to the EU will require additional resources for developing new areas of economic statistics (SUT, sequence of accounts, financial accounts). The sustainability of the current national accounts compilation system is at risk unless additional resources are allocated to the national accounts and the business statistics divisions. The mission discussed the resource issues with the senior management of MONSTAT.

The mission and the national accounts staff updated the action plan for compiling quarterly GDP. According to the plan, it is expected that quarterly GDP time series for 2010–14 will be disseminated in March 2015. The mission and the national accounts staff agreed on the way forward.

PROJECT FRAMEWORK SUMMARY (ACTION PLAN)

PROJECT OBJECTIVES: DEVELOPING QUARTERLY NATIONAL ACCOUNTS.

Objective	Verifiable Indicators	Completion Date	Assumptions
Compilation of quarterly GDP estimates in accordance with the *2008 System of National Accounts*.	Quarterly GDP at current and constant prices is compiled.	March 2015	

PROJECT OUTPUTS: QUARTERLY GDP AT CURRENT AND AT CONSTANT PRICES

Priority	Outputs	Verifiable Indicators	Completion Date	Assumptions/ Implementation Status
High	Compile quarterly expenditure GDP aggregates at current prices, applying the annual statistical techniques.	GDP expenditure aggregates at current prices for 2010–14.	February 2015	
High	Compile expenditure GDP volume measures at previous year's prices.	Quarterly GDP at previous year's prices.	February 2015	.
High	Compile chain-linked volume measures using the annual overlap technique.	Chain-linked volume measures with 2010 reference year.	March 2015	TA is needed.
High	Prepare a short methodological note for press release and disseminate time series of quarterly GDP for 2010–14 in March 2015.	Time series of quarterly expenditure GDP at current and constant prices disseminated with methodological note.	March 2015	

I. INTRODUCTION

1. At the request of the senior management of the Statistical Office of Montenegro (MONSTAT), a national accounts mission visited Podgorica during January 20–30, 2014 to provide assistance in establishing a system for compiling quarterly national accounts (QNA). The mission worked closely with the staff from the national accounts division. The mission's main findings and recommendations are presented in the sections below.

II. ANNUAL GDP FOR 2013

2. Annual estimates of GDP by expenditure are compiled using good quality source data and sound methods. Household consumption expenditures is estimated with the commodity flow approach (implemented since 2007) using data from the Household Budget Survey, customs data, industrial production statistics, and agricultural and other surveys. The datasets are integrated by product at a four-digit level of the Classification of Individual Consumption by Purpose (COICOP). The national accounts staff is well trained and experienced in deriving estimates with the commodity flow approach.

3. Imports data are split by use (final consumption, intermediate consumption and gross fixed capital formation (GFCF). The estimates are further adjusted to purchaser prices by adding taxes (value-added tax (VAT), duties, and excises), trade and transportation margins. Final consumption expenditure of households is compiled using the supply/use framework. The data are adjusted for purchases of residents abroad (plus) and purchases of non-residents in Montenegro (minus). Estimates of government consumption are derived from the database of the Ministry of Finance. These data are available by economic and functional classifications, by central government, local government and extra budgetary funds.

4. Data on gross fixed capital formation is also derived with the commodity flow approach. These data are reconciled with the production side estimates for construction. Imports and exports of goods and services are available from the balance of payments data compiled by the Central Bank of Montenegro.

5. Volume measures are derived at previous year's prices using appropriate price deflators. Private household consumption is deflated with the consumer price indices (CPI) at four-digit level of COICOP. The EU producer price index (PPI) for non-EU market is used to derive an overall deflator for GFCF. Imports and exports of goods are deflated by the imports and exports price indices compiled by MONSTAT. For imports of services, an implicit deflator is derived (overall CPI of the EU and other major exporters). For export of services, an implicit deflator for travel is derived. Other services are deflated using price indices for domestic services.

6. MONSTAT has developed a sound compilation system for annual GDP estimates by activity at current prices. Establishment data are cross checked against financial statements data. A set of validation procedures are established to detect and to eliminate technical errors.

Estimates for output, intermediate consumption, and value added at current prices are compiled at the most detailed level possible. The output for financial intermediation services indirectly measured (FISIM) are calculated from monetary statistics data of the Central Bank of Montenegro, following the *2008 System of National Accounts* methodology. The FISIM estimate is allocated by institutional sectors and by economic activities. Taxes and subsidies data are available from the database of the Ministry of Finance.

7. The mission worked with MONSTAT in reconciling the annual GDP for 2013 at current prices by activity and by expenditure approach. Both estimates are with good quality, and the statistical difference is less than 1 percent.

8. Annual volume measures of GDP by economic activities (on two-digit level of the Statistical Classification of Economic Activities in the European Community, or NACE) for 2013 are derived using mostly the single indicator method (the double indicator method is used only in agriculture). The volume measures for all non-agricultural activities are derived by extrapolation with volume indicators. In most cases, the quality of these volume indicators is not satisfactory. For example, for construction, there are a number of indicators already published by the MONSTAT business statistics division; however, these indicators are not consistent (Attachment I). It is the mission's view that the accuracy of these data is not routinely assessed and that data are not being edited and validated for non-response, sample error, or exhaustiveness by the business statistics divisions.

9. For agriculture, a double indicator method is applied—quantity revaluation for output and deflation of intermediate consumption. Volume measures of non-deductable VAT are derived by extrapolation with the volume index of domestic household consumption (excluding the imputed rent). For custom duties, the volume index of imports of goods is used. For excises, an implicit price index is derived form the CPI for the excise goods.

10. The accuracy of the volume measures of GDP by activity is undermined by the quality of the indicators used for extrapolation (i.e., the volume indices form the business statistics). Therefore, in reconciling the GDP at constant prices, the volume measures of GDP by production are adjusted to the volume measures of the GDP by expenditure.

11. *The mission has the following recommendations for the annual GDP estimates:*

- Improve the accuracy of the business statistics indicators to be used for national accounts purposes (construction, industry, transportation, trade, hotels, and restaurants).
- Improve the accuracy of the data on agricultural output and prices.
- Expand the coverage of the PPI to include agriculture, construction and other services (transportation, communication) which will be used as deflators.

III. QUARTERLY GDP

12. The June 2014 mission assisted MONSTAT in compiling quarterly GDP by expenditure components for 2010 to Q1:2014 using the same sources and methods as in the annual ones. A detailed description of the step-by-step procedures was drafted and is available to MONSTAT staff. Spreadsheets with detailed data compilation were developed during the mission. The compilation of volume measures was done too, although some additional training to the staff will be needed on chain linking using the annual overlap technique.

13. The compilation of quarterly GDP by production approach will require the developing of good source data. Currently, quarterly output data are not being collected by MONSTAT business statistics units. The short-term statistics units usually collect data on physical indicators. The only price indices available for output are the producer price indices for mining, manufacturing and electricity. No production side data are available for agriculture. A survey on agricultural production has been launched in the second quarter of 2013; however, the quality of the data is not satisfactory. The accuracy of the agricultural prices collected by MONSTAT is in dire need of improvement. In the future, the quality of the quarterly GDP to a great extend will depend on the progress made in collecting short-term statistics needed for the national accounts.

14. Currently, there are no data on inventories quarterly. MONSTAT has started collecting quarterly data on production account aggregates (including inventories) from the non-financial sector enterprises. However, the accuracy of the data needs to be improved.

15. *For the quarterly GDP, the mission has the following recommendations:*

- *Develop high quality short-term statistics which will be the main input for quarterly national accounts—output price indices (construction, transportation, communication, and tourism), agricultural output, agricultural production price index.*
- *Prioritize and streamline the current short-term statistics surveys, to make sure that staff has sufficient time to carry out the current tasks.*
- *Continue the compilation process for GDP by expenditure for all quarters of 2014.*
- *Prepare a note with sources and methods which will be published when the dissemination is done (March 2015).*

16. The mission and MONSTAT agreed on the follow-up actions (Attachment II). Technical assistance will be needed to (i) assess the accuracy of the quarterly expenditure GDP estimates; (ii) compile chain-linked volume measures of GDP by expenditure; and (iii) develop quarterly GDP estimates by production approach.

Attachment I. Construction Activity Indicators from Business Statistics

1. Value indexes

Value index of construction materials used: 90.5 percent (published by MONSTAT)
Value index of construction activity: 101.9 percent (published by MONSTAT)
Implicit index of wage bill (average wage index*employment index): 119.4 percent value added (VA)

2. Volume indexes

Square meters of finished flats: 90.1 percent (published by MONSTAT)
Employment index: 101.2 percent (published by MONSTAT)
Index of effective hours: 131.5 percent (published by MONSTAT)
Volume index of imports of construction materials: 108.7 percent

3. Price indexes

Index of average net wage: 116.5 percent (published by MONSTAT)
PPI for construction material: 99.9 percent (published by MONSTAT)
UVI imports construction materials: 98.5 percent

Data issues if these indicators are used in national accounts:

	2012	2013	Index
	Constant Prices		
Extrapolation effective hours:		**124,544**	**131.5**
Deflator of VA:			***61.4***
Extrapolation employment index		**95,878**	**101.2**
Deflator of VA:			***79.8***
Extrapolation of square meters index		**85,334**	**90.1**
Deflator of VA:			***89.7***

If VA is extrapolated by the index of effective hours, the growth rate is 31.5 percent, and the deflator is 61.4 percent. If extrapolated with the employment index, the growth rate is 1.2 percent and the deflator is 79.8 percent. If extrapolated with square meters, the growth rate is –9.9 percent and the deflators is 89.7 percent. None of these indicators have been adjusted for exhaustiveness, sample errors, or non-response.

Attachment II. Action Plan for Quarterly GDP

- Benchmark the quarterly GDP for 2013 (Q1–Q4) with the final annual GDP for 2013 for current and constant prices (October 2014)
- Compile estimates for Q2:2014 at current prices (October 2014)
- Compile estimates for Q1 and Q2: 2014 at constant prices of 2013 (October 2014)
- Compile GDP for Q3: 2014 at current and at constant prices in real time
- Assess the time schedule and the data weaknesses (December 2014)
- Derive chain-linked volume measures for 2010 to Q3:2014 time series available (February 2015)
- Compile real time estimates for Q4:2014 and prepare time series of 2010–14 for dissemination (March 2015)
- Draft a short methodological note about the sources and methods and disseminate the note together with the data (March 2015)
- Discontinue the indirect method after Q4:2015; align the production aggregates with the expenditure GDP; publish data by activity as aggregates only