

# **TWINNING CONTRACT**

**JO/13/ENP/ST/23**

## **Strengthening the capabilities of the Department of Statistics in Jordan**



## **MISSION REPORT**

**on**

### **Activity 1.16: Informal sector - II**

Mission carried out by  
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16-20 November 2014

Version: Final



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## List of Abbreviations

CPI	Consumer Price Index
DoS	Department of Statistics of Jordan
ESA/10	European System of National Account 2010
ISTAT	Italian National Institute of Statistics
IPI	Investment Price Index
LIM	Labour Input Method
NOE	Non observed economy
PPI	Producer Price Index
SNA08	United Nation System of National Account 2008
ToR	Terms of Reference
WPI	Wholesale Price Index

## 1. General comments

This was the second Activity devoted to “Informal sector” within Component 1: National Account. On the basis of the recommendations provided during the first Activity (n. 1.8), the purpose of this activity consists in preparing the estimate for the informal economy and to introduce the DoS staff to the most recent updates regarding accounting for hidden economy in the ESA10/SNA08.

In order to provide to the Jordan colleagues an exhaustive guide for the estimation of non-observed economy, this report includes both the main aspects analysed in the first mission and the topics discussed in the present one.

The consultants would like to express their thanks to all officials and individuals met for the kind support and valuable information received during the stay in Jordan which highly facilitated their work.

This views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, DoS or Istat.

## 2. Assessment and results

The main activities carried out were:

1. Definition of the exhaustiveness criterion of GDP as stated by European Commission.
2. Introduction on the general definition of the component of NOE: Statistical underground, informal sector, economic underground, illegal (see annex 3).
3. Focus on Eurostat tabular approach to classify the different components of NOE:
  - N1 Producer should have registered;
  - N2 Illegal producer that falls to register;
  - N3 Producer not obliged to register;
  - N4 Registered legal person not included in statistics;
  - N5 Registered entrepreneur not included in statistics;
  - N6 Miss-reporting by the producer;
  - N7 Statistical deficiencies in the data.
4. The illegal sector has not be treated because it has not be included in the targets of the action.
5. General overview of the methods used to calculate the NOE:
  - 5.1 direct methods;
  - 5.2 indirect methods (not based on model, model based).Furthermore a description of methods used by the National Statistical Institutes has been provided (see Annex 4).
6. Detailed description of the “Labour Input method (LIM)” and analysis of the data sources available to implement the LIM in Jordan.
7. Analysis of the estimation of the non-observed economy.
8. Implementation method and practical instructions by activity sector

Regarding the application of LIM to Jordan (item 6) the following specific item have been analysed in detail.

### Unregistered labour input

During the mission a classification of labor input useful to the estimation of the informal and underground sectors has been proposed. This classification consists of the following items:

*A* = Unique jobs, registered

*B* = Multiple jobs, registered

*C* = Informal jobs

*D* = jobs of resident, unregistered

*E* = Foreigner jobs, non-resident (and unregistered)

*F* = Multiple jobs, unregistered

Summing up all these components it is possible to obtain an exhaustive quantification of labour input.

As second step, an analysis to link each item of the classification with the corresponding available data source has been performed. The result is shown in table 1.

**Table 1. Link between the input of labour classification and the corresponding available data source**

INPUT OF LABOUR CLASSIFICATION		SURVEY ON ENTERPRISE	LABOUR FORCE SURVEY
A -REGISTERED -UNIQUE JOB	RESIDENT	A11 - YES	A21 - YES
	NON RESIDENT(1)	A12 - YES	A22 –YES(2)
B- REGISTERED MULTIPLE JOBS	RESIDENT	B11 - YES	B21- YES
	NON RESIDENT(1)	B12 - YES	B22 –YES(2)
C- INFORMAL		C1 - ABSENT	C2 - YES
D- RESIDENT UNREGISTERED		D1 -ABSENT	D2 - YES
E - UNREGISTERED FOREIGNERS		E1 - ABSENT	E2 - ABSENT
F- UNREGISTERED MULTIPLE JOBS	RESIDENT	F11 - ABSENT	F21 - YES
	NON RESIDENT	F12 - ABSENT	F22 - ABSENT

(1) The residence is not referred to the national account definition, but it refers to the nationality. (2) Unpublished data

The input of labour method is based on the comparison between the data collected through the labour force survey and those derived by the survey on enterprise, where the former provides exhaustive figures of the phenomenon and the latter the regular component of the input of labour.

In order to perform a consistent comparison, the input of labour must be quantified in terms of “Job Positions”.

From Table 1 we can derive an estimate of the regular position Job (RJB residents and non-residents), from the survey on enterprise using the following sum:

$$RJP = A11 + A12 + B11 + B12 \quad [1]$$

From labour force survey the following more exhaustive quantification of the input of labour can be obtained:

$$LFS = A21 + A22 + B21 + B22 + C2 + D2 + F21 \quad [2]$$

By subtracting the [2] from the [1] we have:

$$IRR_1 = C2 + D2 + F21 \quad [3]$$

$IRR_1$  is the sum of the input of labor informal (C2) plus the input of labor “unregistered (not regular) resident” (D2 + F21).

To achieve a comprehensive quantification of the input of labor is necessary to integrate the [2] with an estimate of the labor input and the non-resident non-registered (E2 + F22). Currently in Jordan the problem of unregistered non-resident is a very sensitive because of the strong presence of refugees from neighboring countries.

During the mission a preliminary estimate of non-resident non-registered was made.

The starting point is the estimation of the non-resident (not Jordan) registered workers (A22 + B22), that is about 126,000 people.

Furthermore, based on the labor force survey, the rate of the active population (70.5%) and the employment rate (41%) of non Jordan were calculated.

Considering a prudential hypothesis, it was assumed that the lower limit of non-Jordanians living in Jordan is 1 million people. By applying the rate of the active population and the employment rate to the target population, a preliminary estimate of the non Jordan working in Jordan (NJWJ) was made. In formal terms

$$NJWJ = 1,000,000 * 0.705 * 0.41 = 307,500$$

NJWJ is equal to A22+B22+E2+F22. By subtracting from NJWJ the amount of non Jordan regular workers (A22+B22, 126,000 people), we obtain 181,200 people that is the estimate of non Jordan non regular workers (E2 + F22). Adding this figure to LFS data an exhaustive estimate of employed people is performed.

In order to get a exhaustive estimate of GDP is necessary to multiply a value added per capita to the number of informal and non-regular workers: C2, D2, E2, F21 and F22. The per capita values are derived from business surveys. That choice must be made on the basis of enterprise size classes and industries more similar to those in which they work irregular workers

### **Correction for the underreporting of turnover and the over reporting of intermediate costs**

The assumption is that enterprise net income should grant self-employed remuneration not lower than the wage of an employee working in the same industry with similar skills and working time.

If self-employed workers earn less than employees, it is assumed that they prefer to change their employment status, from self-employed to employed.

When profit and losses data declared by enterprises are not consistent with the above hypothesis, it is then assumed that self-employed were reluctant to state their receipts or over-reported intermediate costs; the above enterprises are then identified as under-reporting enterprises and, as consequence, undergo revaluation (see slide “NOE\_A2”).

The method is designed to be applied only to the small firms: the physical person, the simple society and the limited liability company. This is due to the fact that the method is based on the comparison between the revenue of the employee and of the employer and only for the former kind of enterprise it is possible to define the role of the entrepreneur<sup>1</sup>.

In order to take in account the business life cycle of the enterprises, the method should be differentiated according to the years of activity of the firms, e.g. in the following way:

- a) up to 1 year of activity the method is not applied;
- b) from 1 to 2 years of activity the method is applied at 50%;
- c) more than 2 years of activity the method is fully applied.

This limitation is due to the fact that the method does not require the existence of a firm with negative gross profit. Given that this event may occur in the early years of a firm, the previous corrections have been applied.

### **Implementation method and practical instructions**

In this mission we focused on giving practical instructions, in order to implement the LIM method.

First of all, we started from a real point of view, using real Jordanian data on a sector of activity. In particular we realized an Excel file (see the example in annex 5) for the construction sector, using real data, developing a model to calculate the hidden economy. The variables in this model were:

- Trade\_name
- Main\_active
- Number of employer
- Operation surplus/self employer

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<sup>1</sup> It is impossible to identify the role of the entrepreneur in the unincorporated society. The limited liability company is included because it is a special form of unincorporated society very similar, from the governance point of view, to physical person and simple society.

- Wages and salaries/employees  
Comparison among "Operation surplus/self employer and Wages  
and salaries/employees"
- Underdeclared
- Difference between wages and salaries and profits
- Revaluation
- Value added revaluated
- Output revaluated
- Value added revaluated per capita

Compiling this information for each firm and estimate irregular workers (see annex 6) for the same sector we was able to calculate hidden economy. We did this exercise for construction sector and according to Jordanian colleagues we checked other sector that they sent us by e-mail.

### **3. Conclusions and recommendations**

On the basis of the training delivered during the mission and taking into account the methodologies adopted by DoS, we propose the implementation of the following procedures:

1. an exhaustive estimation of the input of labour;
2. the estimation of the value added, intermediate consumption and output generated by the informal and by the irregular (not registered) workers;
3. implementation of a procedure to correct for the underreporting.



## Annex 1. Terms of Reference

<p style="text-align: center;"><b>Terms of Reference</b></p> <p style="text-align: center;"><b>EU Twinning Project JO/13/ENP/ST/23</b></p> <p style="text-align: center;"><b>16-20 November 2014</b></p>
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**Component 1: National Accounts****Activity 1.16: Informal sector - II****0. Mandatory results and benchmarks for the component**

- The national accounts system in Jordan updated to SNA 2008 (Apr 2015)
- The national accounts system in Jordan will cover the informal sector (Apr 2015)
- Assessment report on current situation (Jan 2014)
- Review of the GDP methodology (Apr 2014)
- Plan for how to change base year in the fixed price calculations (Jan 2015)
- Plan for how to improve the current accounts (Jan 2015)
- Present and discuss the concept of different types of agricultural accounts (Jan 2015)
- Data sources, compilation methods, and balancing in relation to supply and use tables reviewed and updated towards SNA08 principles (Apr 2015)
- Provide recommendations on how to update input-output tables (Apr 2015)
- Update the methodology for calculation the informal sector (Apr 2015)

**1. Purpose of the activity**

- Based on the recommendations provided during activity 1.8, to prepare estimates for the informal sector
- To introduce the DoS staff to the most recent updates regarding accounting for the hidden economy / informal sector in the ESA10/SNA08

**2. Expected output of the activity**

- Estimates for the informal sector prepared
- Estimates prepared in a format compatible with the Supply and Use Table for 2010
- DoS staff introduced to the Italian and in general European experiences in measuring the hidden economy / informal sector

### **3. Participants**

#### DoS:

Mr Moawiah Alzghoul Director of National Accounts Directorate, and component leader

#### Annual national accounts

Amal Abu Afeefeh - Head of the Annual Accounts Division

Khairallah Almarzoug

Farhan Mohammad

Loay Alrawashdeh

Ali Zaitoun

Ayman Nasir

#### Input-output division

Murad Bani-Hamad

Murad Omari

#### Quarterly accounts division

Walid Battah - Head of the Quarterly Accounts Division

Jaber Alfazza

Walaa Gharram

#### MS experts

Mr. Stefano Pisani, Head of the office, Italian Tax Revenue Agency.

Mr. Alessandro Faramondi, Head of Unit, ISTAT

## Programme for the mission

Time		Place	Event	Purpose / detail
Sunday, morning	08.30 – 10.00	Hotel /DoS	Meeting with RTA	To discuss the programme of the week.
Sunday, morning	10.00 – 12.00	DoS	Meeting with BC Component Leader and BC Experts	Discussions of the week's programme  Presentations by DoS on the current situation regarding the estimates for the informal / hidden economy.  Work on estimating and validating the results for the informal sector / hidden economy.
	12.00 – 01.00		Break / Preparations / Report writing	Break / Preparations / Report writing
Sunday, afternoon	01.00 – 03.30	DoS	Meeting with BC Component Leader and BC Experts	Continued.
	03.30 – 04.00		Preparations / Report writing	Preparations / Report writing
Monday, morning	08.30 – 09.00	DoS	Preparations / Report writing	Preparations / Report writing
	09.00 – 12.00		Meeting with BC Component Leader and BC Experts	Continued.
	12.00 – 01.00		Break / Preparations / Report writing	Break / Preparations / Report writing
Monday, afternoon	01.00 – 03.30	DoS	Preparations / Report writing	Preparations / Report writing
			Meeting with BC Component Leader and BC Experts	Continued.
	03.30 – 04.00		Preparations / Report writing	Preparations / Report writing

Tuesday, morning	08.30 – 09.00	DoS	Preparations / Report writing	Preparations / Report writing
	09.00 – 12.00		Meeting with BC Component Leader and BC Experts	Continued.
	12.00 – 01.00		Break / Preparations / Report writing	Break / Preparations / Report writing
Tuesday, afternoon	01.00 – 03.30	DoS	Meeting with BC Component Leader and BC Experts	Continued.
	03.30 – 04.00		Preparations / Report writing	Preparations / Report writing
Wednesday, morning	08.30 – 09.00	DoS	Preparations / Report writing	Preparations / Report writing
	09.00 – 12.00		Meeting with BC Component Leader and BC Experts	Continued.
	12.00 – 01.00		Break / Preparations / Report writing	Break / Preparations / Report writing
Wednesday, afternoon	01.00 – 03.30	DoS	Meeting with BC Component Leader and BC Experts	Continued.
	03.30 – 04.00		Preparations / Report writing	Preparations / Report writing
Thursday, morning	08.30 – 09.00	DoS	Preparations / Report writing	Preparations / Report writing
	09.00 – 12.00		Meeting with BC Component Leader and BC Experts	Continued.
	12.00 – 01.00		Break / Preparations / Report writing	Break / Preparations / Report writing
Thursday, afternoon	01.00 – 02.30	DoS	Meeting with BC Component Leader and BC Experts	Continued.
			Ad-hoc meetings	Final clarifications with BC Experts, preparation of report and presentation for BC Project Leader

Thursday, afternoon	02.30 – 03.00	DoS	Meeting with BC Component Leader	Presentation for BC Project Leader
Thursday, afternoon	03.00 – 04.00	DoS	Debriefing with BC Project Leader	Conclusions and decisions and their consequences for the next activity and the implied work programme for BC Experts

## **Annex 2. Persons met**

### DoS:

Mr Moawiah Alzghoul Director of National Accounts Directorate, and component leader

### Annual national accounts

Amal Abu Afeefeh - Head of the Annual Accounts Division

Khairallah Almarzoug

Farhan Mohammad

Loay Alrawashdeh

Ali Zaitoun

Ayman Nasir

### Input-output division

Murad Bani-Hamad

Murad Omari

### Quarterly accounts division

Walid Battah - Head of the Quarterly Accounts Division

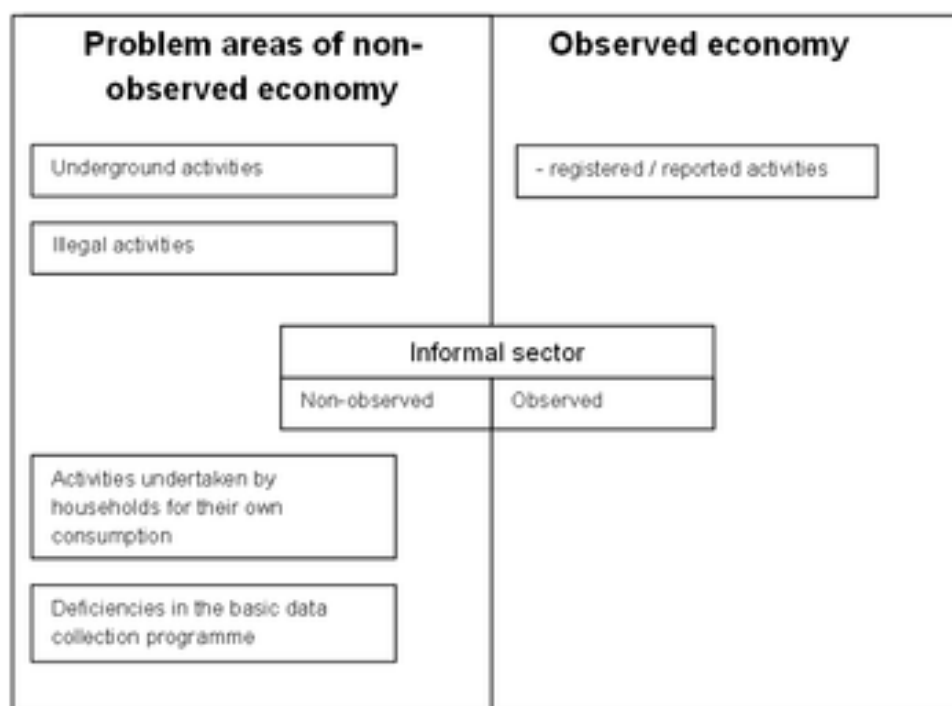
Jaber Alfazza

Walaa Gharram

### Annex 3. Delimiting the observed from non-observed economy in the 2008 SNA

**Non-observed economy (NOE)** refers to all productive activities that may not be captured in the basic data sources used for compiling national accounts. The following activities are included: underground, informal (including those undertaken by households for their own final use), illegal, and other activities omitted due to deficiencies in the basic data collection program. The term ‘non-observed economy’ encompasses all of these activities and the related statistical estimation problems.

The **informal sector** may be broadly characterized as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes for the persons concerned. These units typically operate at a low level of organization, with little or no division between labour and capital as factors of production and on a small scale. Labour relations - where they exist - are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.



## Annex 4. Methods used by statistical institute to calculate NOE

Country	National Statistical Institutes' approaches
UK	Discrepancies between independent estimates from the production and income distribution
France	1) Fiscal audit: imputation to all similar enterprises of a share of evasion equal to that one observed during fiscal inspections on not random samples of enterprises; 2) Sensitivity analysis for integrating the production of industry affected by unregistered work
Netherlands	1) Sensitivity analysis on national accounts aggregates; 2) Sample survey on the demand and supply of unregistered work; 3) Discrepancies analysis between NA estimates and fiscal data
United States	Direct survey for adjusting fiscal data with direct results of confidential statistical survey on tax payers
Austria	Adjustment for turnover underreporting: coherence between the entrepreneurs and employees remunerations (Franz method – MF)
Italy – Albania – Moldova – Brasil - ...	Labour input method or so-called Italian approach: per capita productivity values, as obtained on economic data of enterprises, are expanded to the universe of production units using FTE's estimates



## Annex 5 – Example of the information in the excel file model to obtain the estimation of the hidden economy

trade_name	main_active	wt	اجملي اعداد العمالين	تعيينات العمالين	مجموع الاستهلاك	القيمة المضافة الوسيطة	فائض التشغيل	Operation surplus/self employer	Wages and salaries/emplo yees	comparis on	Difference between wages and salaries and profits	Value added revaluated	Output revaluated	Value added revaluated per capita					
معمل طوب حواري	2693	1	1	0	1	2400	39200	33960	5240	1421	1421	1926,023175	-505,023	1	505,0231748	505,0232	5745,023175	39705	5745,023175
منجرة طاهر سري	2022	1	1	0	1	2040	11040	5328	5712	3361	3361	1926,023175	1434,977	0	-1434,976825	0	5712	11040	5712
مخيطه زيد	1810	1	1	0	1	3600	7000	2355	4645	914	914	1926,023175	-1012,02	1	1012,023175	1012,023	5657,023175	8012	5657,023175
معرض الوسيم للزجاج والمرايا	2029	1,5	2	0	2	2700	18000	8790	9210	6251	6250,5	1926,023175	4324,477	0	-4324,476825	0	9210	18000	6140
منجرة الاخوة	2892	1	2	0	2	7992	57000	43430	13570	2656	2656	1926,023175	729,9768	0	-729,9768252	0	13570	57000	6785
منجرة عودة	2022	1	2	0	2	5328	17000	8125	8875	3249	3249	1926,023175	1322,977	0	-1322,976825	0	8875	17000	4437,5
مصنع لبح الغزالي	1554	2	2	0	2	4800	38000	21460	16540	9350	9350	1926,023175	7423,977	0	-7423,976825	0	16540	38000	8270
محلات الشرف للتجارة والميكانيك	2915	1	2	0	2	4800	10000	3404	6596	1628	1628	1926,023175	-298,023	1	298,0231748	298,0232	6894,023175	10298	3447,011587
الشركة الحديثة لصناعة السيف المعدن	2893	1	2	0	2	3022	38239	9934	28305	22490	22490	1926,023175	20563,98	0	-20563,97683	0	28305	38239	14152,5
حاروشة بلعما	1533	2,667	3	0	3	6401	17336	965	16370	8916	8915,781	1926,023175	6989,758	0	-6989,757825	0	16370,046	17336	6138
حاروشة المعري	1533	1	3	0	3	6977	75000	61208	13792	4530	4530	1926,023175	2603,977	0	-2603,976825	0	13792	75000	4597,333333
منشئ محمد الشميلة للغزل والنسيج	1722	3	3	0	3	5400	15000	3612	11388	5400	5400	1926,023175	3473,977	0	-3473,976825	0	11388	15000	3796
منجرة صبيح خضير	2022	1	3	0	3	5400	16300	8898	7402	565	565	1926,023175	-1361,02	1	1361,023175	1361,023	8763,023175	17661	2921,007725
احمد جمعة كميل	2812	1	3	0	3	11322	46000	23280	22720	10289	10289	1926,023175	8362,977	0	-8362,976825	0	22720	46000	7573,333333

## Annex 6 – Regular and irregular workers (year 2010)

Employees by Economic Activity, Nationality and Sex For Year 2010 For Private Sectors							
Economic activity	عدد المشتغلين الأردنيين Jordanian Employees	Employees by عدد العاملين حسب مسح الإستخدام			عدد المشتغلين الأردنيين غير النظاميين Jordanian Employees Irregular	عدد المشتغلين غير الأردنيين غير النظاميين (غير المسجلين) Non Jordanian Employees Irregular	عدد المشتغلين الأردنيين وغير الأردنيين غير النظاميين (غير المسجلين) & Jordanian Non Jordanian Employees
		Jordanian	Non Jordanian	Total			
Agriculture	89.067	72.106	54.076	126.182	16.961	71999	88.960
Mining and quarrying	11.107	1.238	882	2.120	9.869	1174	11.043
Manufacturing	129.131	124.809	58.495	183.304	4.322	77882	82.204
Electricity, gas and water supplies	11.715	2.776	0	2.776	8.939	0	8.939
Constructions	79.607	41.380	44.956	86.336	38.227	59856	98.082
Wholesale and retail trade and repair of motor	199.559	189.500	19.213	208.713	10.059	25581	35.640
Hotels and restaurants	27.354	26.772	13.575	40.347	582	18074	18.656
Transport, storage and communications	124.191	92.610	1.343	93.953	31.581	1788	33.369
Financial intermediation	25.111	25.111	1.120	26.231	0	1491	1.491
Real estate, renting and business	50.947	39.073	3.151	42.224	11.874	4195	16.069
Public administration and	0	0	0	0	0	0	0
Education	150.144	42.287	1.268	43.555	107.857	1688	109.545
Health and social work	63.169	26.012	1.863	27.875	37.157	2480	39.637
Other community, social and	46.182	19.364	1.389	20.753	26.818	1849	28.667
Total	1.007.284	703.038	201.331	904.369	304.246	268.059	572.305