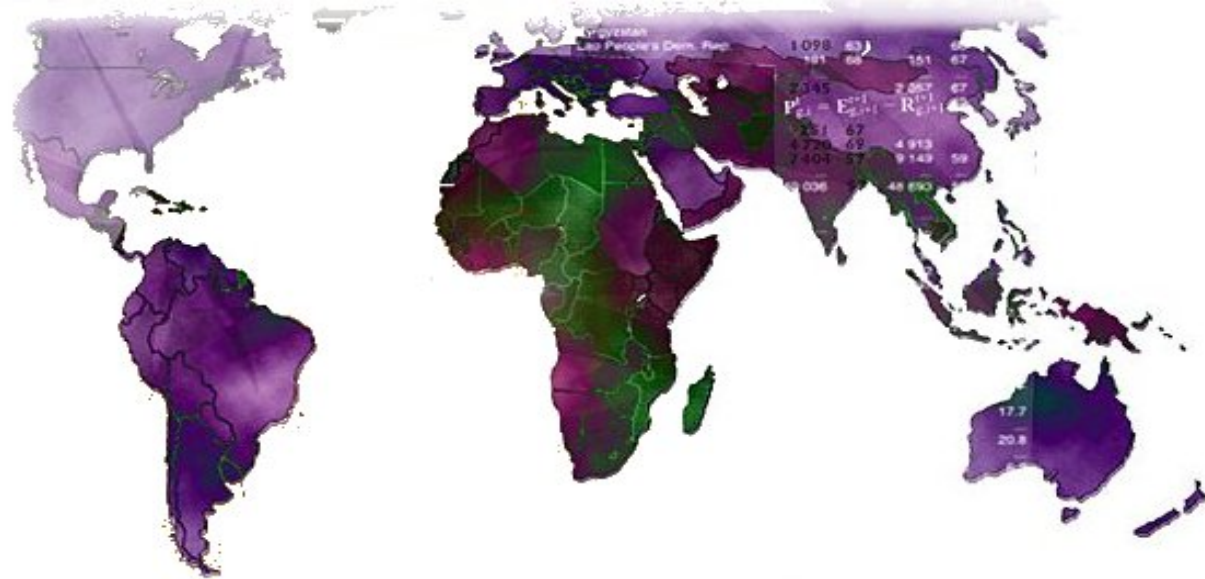




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UIS work on innovation statistics: towards a global database

*VI Science and Technology Indicators Harmonization Workshop
Asunción, Paraguay
4-5 December 2012*

- 1. UIS innovation statistics strategy**
- 2. Defining innovation**
- 3. Innovation inventory**
- 4. 2011 UIS pilot data collection**
- 5. 2012 UIS metadata collection**
- 6. 2013 UIS global data collection**

1. UIS innovation statistics strategy

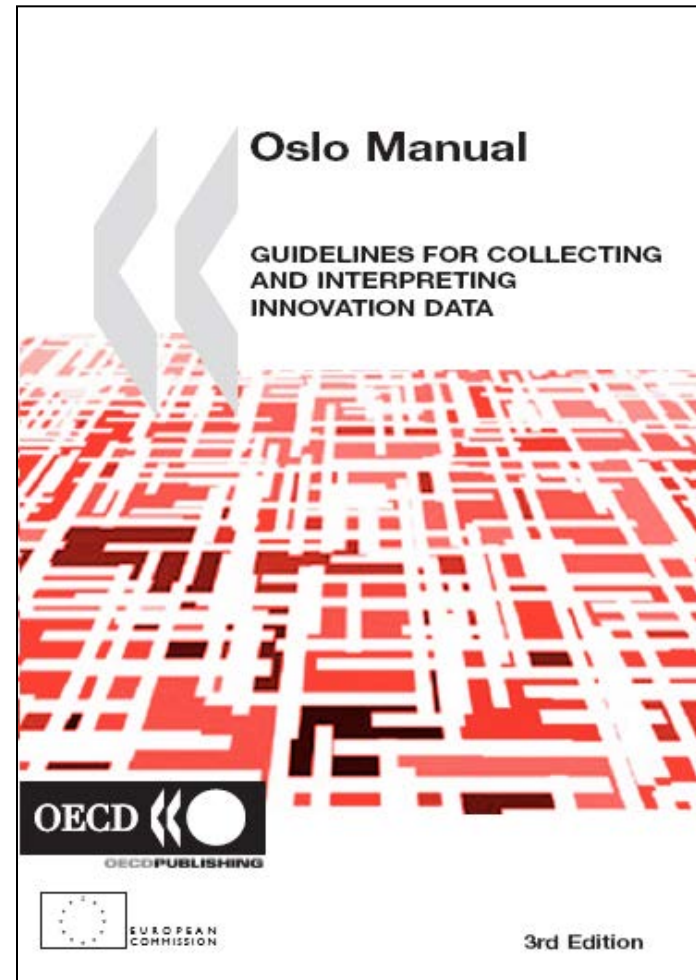
- **2010;**
- **Developing countries recently carrying out innovation surveys;**
- **Information on the business sector in developing countries that R&D statistics will not supply;**
- **Goal: to create a global database of innovation statistics.**

1. UIS innovation statistics strategy

- **Capacity building & training activities;**
- **Methodological developments & survey help;**
- **Inventory;**
- **Pilot data collection → global data collection, 2013;**
- **Metadata collection;**
- **Analysis & publication;**
- **Partnership with international/regional organizations (ASEAN, AU/NEPAD, Eurostat, OECD, RICYT...).**

2. Defining innovation

- **Innovation is the implementation of:**
 - New or significantly improved product or process;
 - New marketing or organizational method.
- Business sector.



3. Innovation inventory

- **Innovation surveys in developing and developed countries:** questionnaires, methodological notes, publications;
- **Input** for data collection;
- Creation of a **database**;
- **Dissemination**;
- Work in progress: Africa, Asia, LAC, Europe, North America, Oceania.

3. Innovation inventory



■ Africa:

- 12 countries
- 19 surveys

■ Asia:

- 18 countries
- 42 surveys

■ LAC:

- 14 countries
- 46 surveys

■ Europe:

- *26 countries
- 57 surveys

■ North America**:

- 2 countries
- 8 surveys

■ Oceania:

- 2 countries
- 7 surveys

“Total”:

- 74 countries
- 179 surveys

3. Innovation inventory: Africa

Africa	Number of surveys carried out	Number of surveys checked	Methodological base
1. Burkina Faso	1	1	OM/CIS
2. Egypt	3	2	OM/CIS
3. Ethiopia	1	1	OM
4. Ghana	1	1	OM/CIS
5. Lesotho	1	1	OM/CIS
6. Mozambique	1	1	OM/CIS
7. Nigeria	2	1	OM/CIS
8. South Africa*	4	4	OM/CIS
9. Tanzania	1	1	OM/CIS
10. Tunisia	2	2	OM/CIS
11. Uganda	1	0	OM/CIS
12. Zambia	1	0	OM/CIS
12 countries	19	15	-

**The first (unofficial) survey is included*

3. Innovation inventory: Asia

Asia	Number of surveys carried out	Number of surveys checked	Methodological base
1. Abu Dhabi*	1	1	OM/CIS
2. Azerbaijan	1	0	-
3. China	1	1	OM/CIS
4. Hong Kong*	10	1	OM
5. India	1	1	OM/CIS
6. Indonesia	2	1	OM/CIS
7. Israel	1	1	OM/CIS
8. Japan	2	0	OM/CIS
9. Kazakhstan	1	0	-
10. Kirgizstan	1	0	-
11. Korea	6	1	OM/CIS
12. Lao PDR	1	0	-
13. Malaysia	5	5	OM/CIS
14. Palestine	1	0	-
15. Philippines	1	1	OM/CIS
16. Singapore	2	0	OM/CIS
17. Sri Lanka	1	1	OM/CIS
18. Thailand	4	3	OM/CIS
18 countries	42	17	-

3. Innovation inventory: LAC

LAC	Number of surveys carried out	Number of surveys checked	Methodological base
1. Argentina	5	4	BM
2. Brazil	4	4	OM
3. Chile	6	6	OM
4. Colombia	5	4	BM
5. Costa Rica	3	3	OM/BM
6. Cuba	2	1	-
7. Dominican Republic	1	1	-
8 Mexico	5	4	OM/CIS
9. Panama	2	2	-
10. Paraguay	1	1	BM
11. Peru	2	2	-
12. Trinidad and Tobago	4	3	OM/BM
13. Uruguay*	4	3	BM
14. Venezuela	2	1	OM
14 countries	46	39	-

**The survey on agricultural innovation is not included*

4. 2011 UIS pilot data collection


- **Launch:** June, 2011;
- **Countries:** 19 countries, 12 responses:
 - Asia: CHN, IDN, ISR, MYS, PHL, LKA
 - Africa: EGY, GHA, ZAF, TZA
 - Europe: RUS
 - LAC: ARG, BRA, CHI, COL, CRI, MEX, PAN, URY
- **Observation period:** most recent innovation survey for which data are available;
- **Industrial coverage:** All, Manufacturing, Services.

4. 2011 UIS pilot data collection

■ Topics:

- Basic methodology (metadata)
- Product innovation
- Process innovation
- Innovation activities and expenditures
- Funding
- Sources of information
- Cooperation
- Hampering factors
- Organizational innovation
- Marketing innovation
- All types of innovation

Montreal, June 2011



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UIS
INNOVATION STATISTICS
PILOT QUESTIONNAIRE

COUNTRY: _____

OBSERVATION PERIOD: _____

**PILOT DATA COLLECTION OF INNOVATION STATISTICS
(June 2011)**

MOST RECENT INNOVATION DATA AVAILABLE

This pilot questionnaire is designed to collect the most recent data on innovation available at the country level, in order to commence the development of the UIS database of innovation indicators. This pilot data collection on innovation statistics is a tentative exercise towards the establishment of a regular worldwide innovation data collection activity.

Please return one completed questionnaire before **30 September 2011** to l.marins@uis.unesco.org and/or z.salmi@uis.unesco.org.

For any queries please **contact** the UIS:
 Email: l.marins@uis.unesco.org and/or m.schaaper@uis.unesco.org
 Telephone: +1 (514) 343-7753
 Fax: +1 (514) 343-6872

Please refer to the Instruction Manual for Completing the Pilot Questionnaire on Innovation Statistics before completing the questionnaire.

Only one questionnaire per country should be completed by the institution responsible for innovation statistics (e.g. Ministry of Science and Technology, National Innovation Council or a similar organisation, or the National Statistical Office).

Please do not leave any cell blank. The following codes should be used whenever figures are not available:

- a = category not applicable
- c = confidential
- m = data missing (or not available)
- n = quantity nil
- x = data included in another category (please specify where, using a comment or footnote)

Estimated or provisional data should be marked with an asterisk *.

The data reported should refer to grossed up results.

The most recent innovation survey from which data are being reported is hereafter defined as "your innovation survey".

Please send the UIS a copy of the questionnaire of your innovation survey.

4. 2011 UIS pilot data collection

- **Final results:** Only Manufacturing, online publication
 - Basic methodology (metadata)
 - Product innovation
 - Process innovation
 - Innovation activities and expenditures
 - Funding
 - Sources of information
 - Cooperation
 - Hampering factors
 - Organizational innovation
 - Marketing innovation
 - All types of innovation

Product or process innovation

4. 2011 UIS pilot data collection

▪ Online publication:

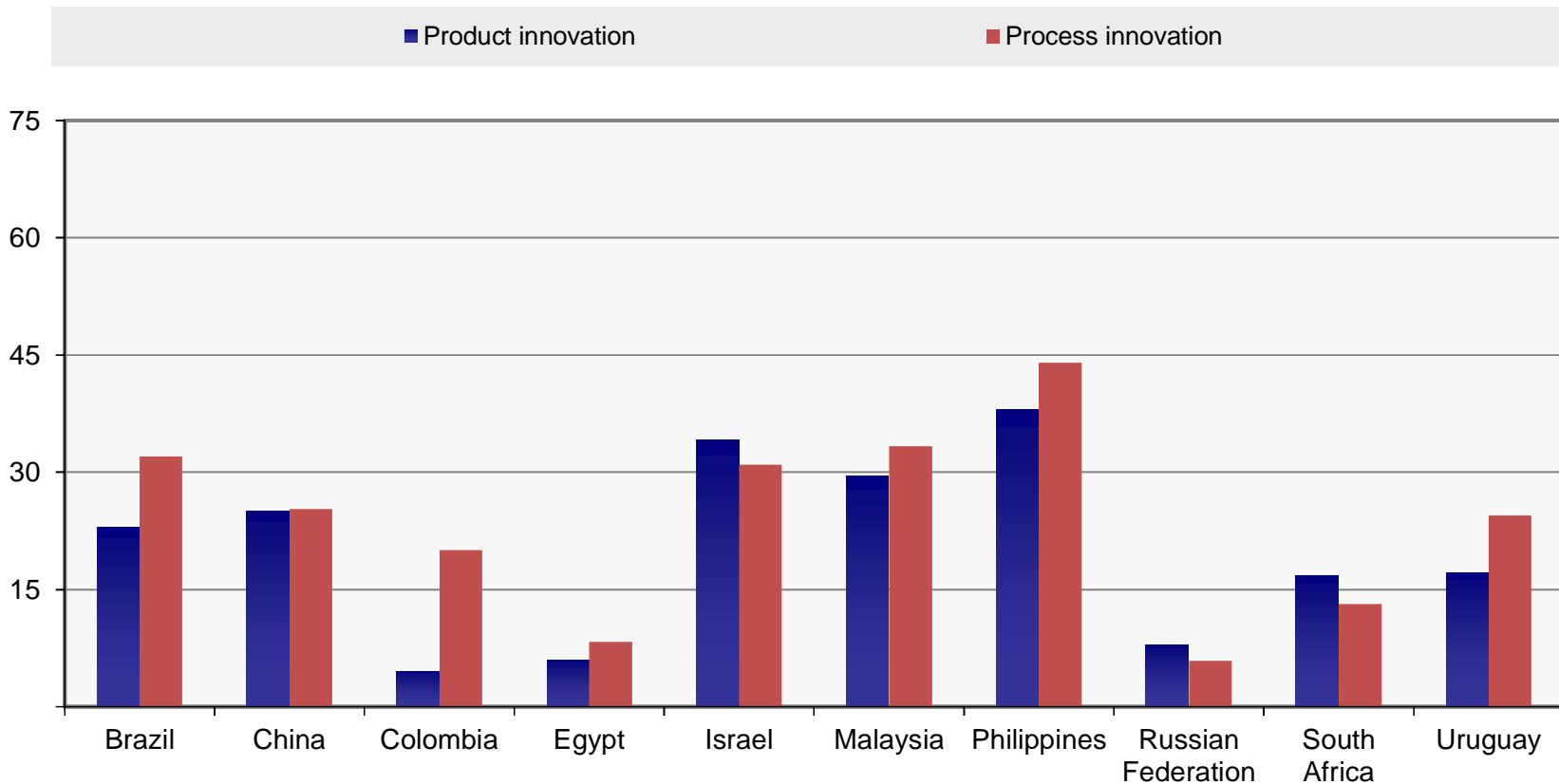
- ***Results of the 2011 UIS Pilot Data Collection of Innovation Statistics***
- Text & Graphs
- Statistical annex
- Metadata
- Country profiles
- Available at:

<http://www.uis.unesco.org/ScienceTechnology/Pages/sti-innovation-pilot-data-release.aspx>

4. 2011 UIS pilot data collection

▪ Product innovators, process innovators:

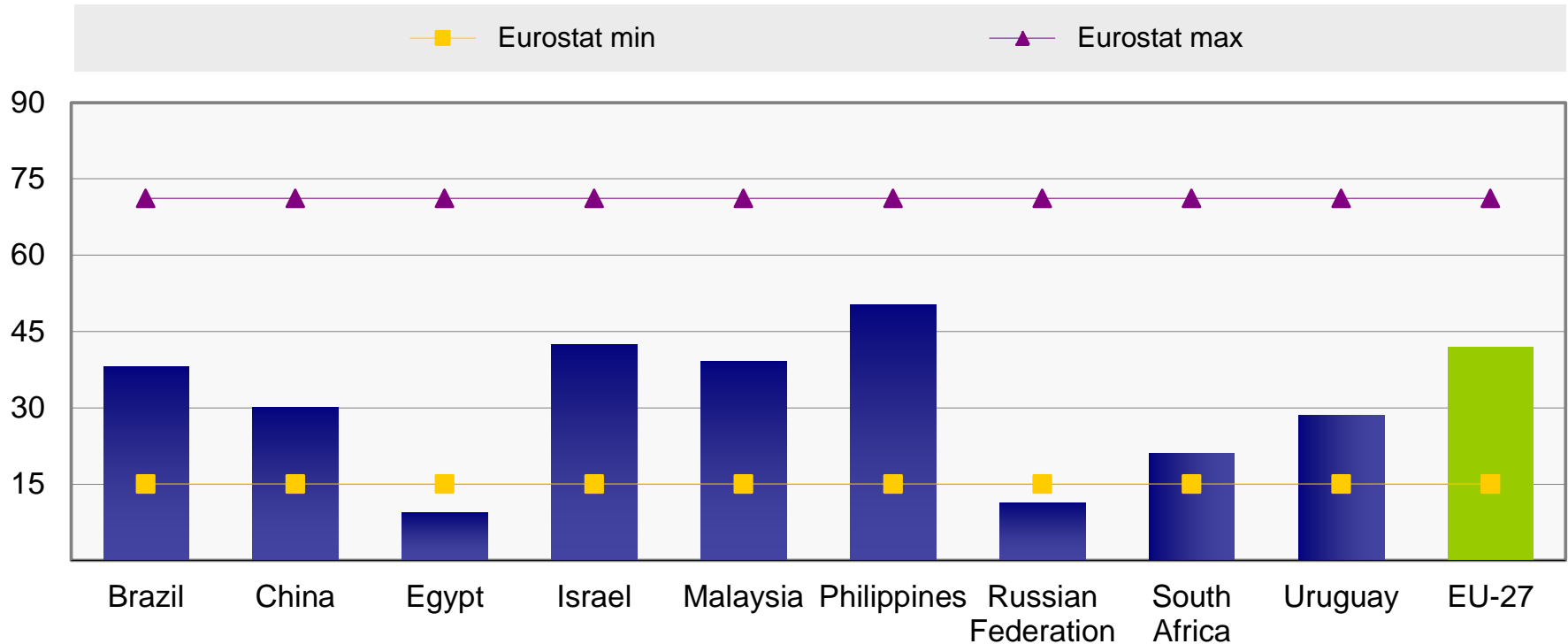
Manufacturing firms that implemented product and process innovation (as a % of all manufacturing firms)



4. 2011 UIS pilot data collection

▪ Product or process innovators:

Manufacturing firms that implemented product or process innovation (as a % of all manufacturing firms)



4. 2011 UIS pilot data collection

▪ Innovation activities:

Firms with innovation activities (as a % of innovation-active manufacturing firms)

	Innovation activity						
	Intramural R&D	Extramural R&D	Acquisition of machinery, equipment and software	Acquisition of other external knowledge	Training	Market introduction of innovations	Other preparations
Brazil	4.7	1.9	34.1	4.8	26.5	14.7	16.7
China	63.3	22.1	66.0	28.1	71.5	60.6	36.9
Colombia	26.8	8.9	85.8	7.2	19.8	26.6	n.a.
Egypt	41.3	5.5	74.3	11.0	56.9	19.3	35.8
Ghana	42.1	14.0	80.7	15.8	86.0	71.9	45.6
Indonesia	48.3	5.2	39.3	21.6	37.0	85.4	77.5
Israel	48.9	32.2	85.1	12.9	52.6	59.1	n.a.
Malaysia	42.5	15.8	64.9	29.8	50.2	32.0	n.a.
Philippines	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Russian Federation	18.9	20.0	64.0	12.7	18.3	9.6	n.a.
South Africa	54.1	22.4	71.2	24.8	69.6	42.6	47.7
Uruguay	11.1	1.2	20.3	4.4	15.1	n.a.	n.a.
EU-27	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Eurostat min	8.2	5.8	25.2	2.0	8.9	14.3	9.4
Eurostat max	81.3	54.8	98.8	53.1	96.4	48.4	88.1

4. 2011 UIS pilot data collection

▪ Sources of information:

Highly important sources of information for firms (as a % of innovation-active manufacturing firms)

	Sources of information									
	Internal	Market				Institutional		Other		
	Within your enterprise or enterprise group	Suppliers of equipment, materials, components, or software	Clients or customers	Competitors or other enterprises in your sector	Consultants, commercial labs, or private R&D institutes	Universities or other higher education institutions	Government or public research institutes	Conferences, trade fairs, exhibitions	Scientific journals and trade / technical publications	Professional and industry associations
Brazil	10.0	38.3	46.0	22.7	10.8	6.3	4.9	n.a.	n.a.	n.a.
China	49.4	21.6	59.7	29.6	17.1	8.9	24.7	26.7	12.0	14.8
Colombia	92.2	40.7	51.0	34.1	30.0	16.7	10.8	49.0	43.0	21.6
Egypt	84.4	32.5	20.0	20.0	2.9	1.9	1.0	24.8	16.2	6.7
Ghana	43.9	29.8	35.1	17.5	5.3	n.a.	3.5	14.0	7.0	14.0
Indonesia	45.5	45.0	81.0	51.0	9.0	7.0	6.0	25.0	15.0	14.0
Israel	66.3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	23.9	13.4	4.5
Malaysia	72.0	39.0	39.6	33.9	39.6	17.1	17.3	25.1	22.9	23.2
Philippines	70.0	49.5	67.0	37.9	21.2	10.1	7.1	21.7	16.7	15.7
Russian Federation	32.9	14.1	34.9	11.3	1.7	1.9	n.a.	7.4	12.0	4.1
South Africa	44.0	17.9	41.8	11.5	6.9	3.0	2.2	12.9	16.7	8.4
Uruguay	39.4	21.7	36.1	17.1	13.1	7.0	n.a.	16.5	14.1	n.a.
EU-27	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Eurostat min	22.3	11.2	13.9	6.2	0.8	0.9	0.3	5.1	3.3	1.4
Eurostat max	85.3	71.1	41.8	36.8	25.7	8.8	7.8	59.7	27.0	21.2

4. 2011 UIS pilot data collection

▪ Cooperation:

Cooperation partners of firms (as a % of innovation-active manufacturing firms)

	Cooperation partner							
	<i>Any type of co-operation partner</i>	Other enterprises within your enterprise group	Suppliers of equipment, materials, components, or software	Clients or customers	Competitors or other enterprises in your sector	Consultants, commercial labs, or private R&D institutes	Universities or other higher education institutions	Government or public research institutes
Brazil	9.7	1.1	5.0	3.5	1.0	1.9	1.9	n.a.
China	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Colombia	47.8	18.3	31.8	24.9	5.8	20.7	14.9	n.a.
Egypt	7.5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ghana	n.a.	28.1	21.1	31.6	17.5	22.8	12.3	8.8
Indonesia	n.a.	37.8	66.3	n.a.	18.4	24.5	19.4	11.2
Israel	33.4	8.3	19.6	21.3	14.4	17.3	12.6	8.2
Malaysia	n.a.	65.5	55.1	56.1	30.0	84.0	45.0	37.0
Philippines	n.a.	91.2	92.6	94.1	67.6	64.7	47.1	50.0
Russian Federation	37.3	12.6	16.9	10.9	3.9	5.1	9.1	15.6
South Africa	33.0	14.2	30.3	31.7	18.6	21.1	16.2	16.2
Uruguay	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EU-27	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Eurostat min	12.9	2.4	7.1	4.2	2.7	4.4	4.3	1.1
Eurostat max	56.2	23.0	41.5	36.0	30.8	33.9	30.8	26.3

4. 2011 UIS pilot data collection

▪ Hampering factors:

Highly important cost and economic hampering factors for firms (as a % of innovation-active manufacturing firms)

	Cost and economic factors			
	Lack of funds within your enterprise or group	Lack of finance from sources outside your enterprise	Innovation costs too high	Excessive perceived economic risks
Brazil	n.a.	17.5	21.6	17.7
China	n.a.	n.a.	n.a.	n.a.
Colombia	42.1	33.8	n.a.	n.a.
Egypt	28.6	28.6	21.8	n.a.
Ghana	47.4	28.2	38.6	n.a.
Indonesia	46.0	44.0	46.0	44.0
Israel	26.5	11.1	21.4	n.a.
Malaysia	29.3	40.3	41.3	33.8
Philippines	19.1	10.2	20.9	n.a.
Russian Federation	39.8	n.a.	27.8	16.3
South Africa	38.0	23.5	33.5	n.a.
Uruguay	n.a.	24.8	n.a.	15.0
EU-27	n.a.	n.a.	n.a.	n.a.
Eurostat min	11.0	4.4	9.6	n.a.
Eurostat max	42.1	36.6	44.0	n.a.

4. 2011 UIS pilot data collection

▪ Hampering factors:

Highly important knowledge hampering factors for firms (as a % of innovation-active manufacturing firms)

	Knowledge factors			
	Lack of qualified personnel	Lack of information on technology	Lack of information on markets	Difficulty in finding co-operation partners for innovation
Brazil	16.2	5.9	4.4	7.1
China	28.0	n.a.	n.a.	n.a.
Colombia	41.5	42.3	41.3	31.2
Egypt	29.4	36.1	37.0	27.7
Ghana	14.1	7.0	8.8	17.5
Indonesia	29.0	29.0	23.0	36.0
Israel	16.0	5.5	4.5	6.3
Malaysia	28.7	25.6	22.9	22.6
Philippines	11.7	8.2	10.0	5.6
Russian Federation	5.3	1.8	2.9	1.6
South Africa	23.0	11.9	11.7	13.1
Uruguay	32.4	7.3	11.3	16.4
EU-27	n.a.	n.a.	n.a.	n.a.
Eurostat min	8.1	2.0	1.6	2.5
Eurostat max	26.6	35.0	36.4	23.4

4. 2011 UIS pilot data collection

▪ Hampering factors:

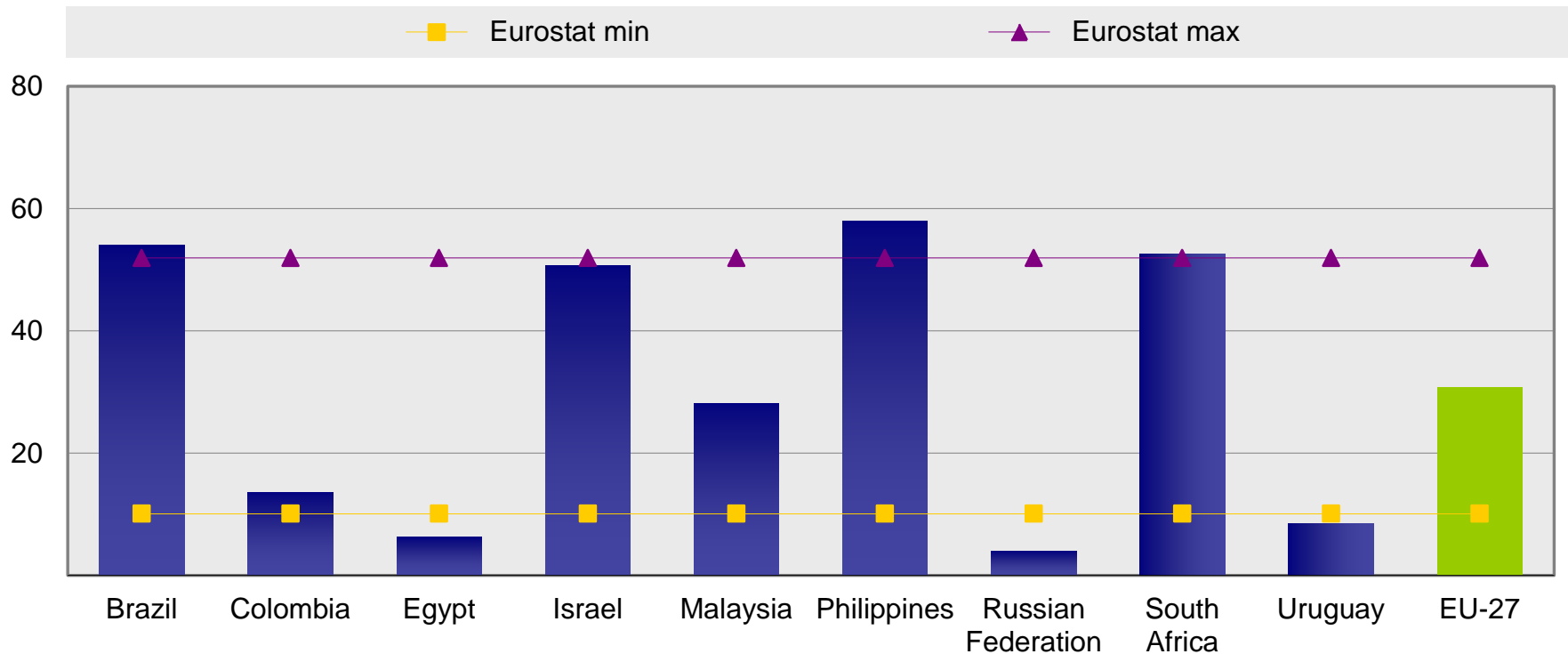
Highly important market hampering factors for firms (as a % of innovation-active manufacturing firms)

	Market factors		
	Market dominated by established enterprises	Uncertain demand for innovative goods or services	Innovation is easy to imitate
Brazil	n.a.	n.a.	n.a.
China	n.a.	n.a.	12.3
Colombia	n.a.	44.5	34.7
Egypt	26.1	29.4	n.a.
Ghana	19.3	12.3	n.a.
Indonesia	37.0	31.0	n.a.
Israel	10.7	6.2	n.a.
Malaysia	30.7	21.5	n.a.
Philippines	14.7	9.9	n.a.
Russia Federation	n.a.	9.1	n.a.
South Africa	17.5	15.5	n.a.
Uruguay	n.a.	n.a.	n.a.
EU-27	n.a.	n.a.	n.a.
Eurostat min	5.3	4.5	n.a.
Eurostat max	26.0	24.3	n.a.

4. 2011 UIS pilot data collection

▪ Organizational innovators:

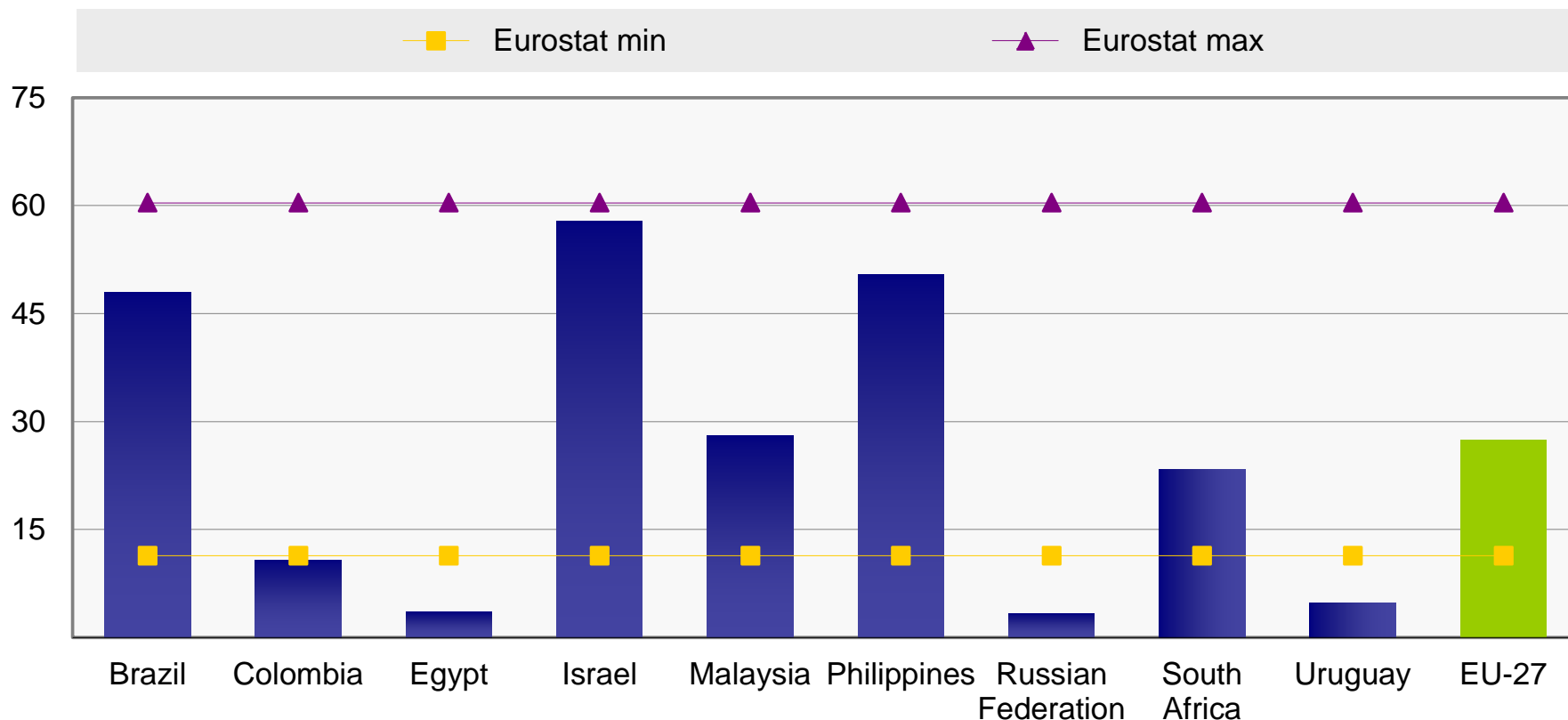
Manufacturing firms that implemented organizational innovation (as a % of all manufacturing firms)



4. 2011 UIS pilot data collection

▪ Marketing innovators:

Manufacturing firms that implemented marketing innovation (as a % of all manufacturing firms)



5. 2012 UIS metadata collection

- **Launch:** September, 2012;
- **Countries:** all countries with official innovation surveys;
- Methodological procedures of the national innovation surveys;
- Key contact person(s) for innovation statistics.

6. 2013 global data collection

- **Launch:** June, 2013;
- **Countries:** all countries with official innovation surveys;
- **Observation period:** most recent innovation survey for which data are available;
- **Industrial coverage:** mostly manufacturing;
- **Topics:** same as pilot publication.

Thank you!

<http://www.uis.unesco.org>

Luciana Marins

l.marins@unesco.org