

Innovation Surveys in Developing Countries

INTERNATIONAL TRAINING WORKSHOP

“R&D and Innovation Statistics”

National Research University “Higher School of Economics”
23rd-24th May 2011, Moscow

Luciana Marins, UIS

www.uis.unesco.org

Outline

- 1. Introduction to the UIS**
- 2. The UIS S&T Programme**
- 3. The UIS innovation statistics strategy**
- 4. Innovation surveys in developing countries**
- 5. The UIS pilot innovation data collection**

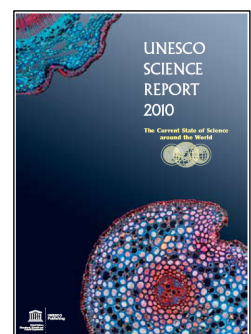
1. Introduction to the UIS

- Formerly UNESCO Division of Statistics, Paris;
- 2001: University of Montreal, QC, Canada;
- UIS Director - Mr. Hendrik van der Pol.
- UN data repository for:
 - Education;
 - *Science and Technology*;
 - Culture;
 - Communication.

3

2. The UIS S&T Programme

1. S&T survey operation & data guardianship;
2. Training in S&T statistics: workshops & other training activities;
3. Standard setting & methodological developments;
4. Analysis & publications.
 - Official S&T data source for UN reports & WB indicators



4

3. The UIS innovation statistics strategy

- **Innovation statistics (2010):**
- **Medium-term objective;**
- **Developing countries recently carrying out innovation surveys;**
- **Information on the business sector in developing countries that R&D statistics will not supply;**
- **UIS: natural coordinating role as UN lead agency on S&T statistics.**

3. The UIS innovation statistics strategy

- **Inventory;**
- **Pilot data collection → regular data collection every two years;**
- **Online worldwide database;**
- **Analysis & publications;**
- **Capacity building & training activities;**
- **Methodological developments & survey help;**
- **Partnership with international/regional organisations (ASEAN, AU/NEPAD, Eurostat, OECD, RICYT, IDB...).**

4. Innovation surveys in developing countries

▪ Inventory:

- Innovation surveys in developing countries: *questionnaires, methodological notes, publications;*
- Input for data collection;
- Creation of a database;
- Dissemination;
- Work in progress;
- Africa, Asia, LAC, *Europe (non-Eurostat)*.*

7

4. Innovation surveys in developing countries

- **Africa:**
 - 12 countries
 - 17 surveys
- **Asia:**
 - 11 countries
 - 24 surveys
- **LAC:**
 - 15 countries
 - 46 surveys



Total:

- 38 countries
- 87 surveys

***Europe (non-Eurostat):**

- Russia, Ukraine,
Macedonia, Belarus

8

4. Innovation surveys in developing countries

Region	Number of countries	Number of surveys developed	Number of surveys analysed
Africa	12 (32%)	17 (20%)	13 (21%)
Asia	11 (29%)	24 (27%)	14 (22%)
LAC	15 (39%)	46 (53%)	36 (57%)
Total	38 (100%)	87 (100%)	63 (100%)

9

4. Innovation surveys in developing countries: Africa

Africa	Number of surveys developed	Number of surveys analysed	Methodological base
1. Burkina Faso	1	1	OM/CIS
2. Egypt	1	1	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	3	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 African countries	17	13	-

* The first (unofficial) survey is included

10

4. Innovation surveys in developing countries: Africa

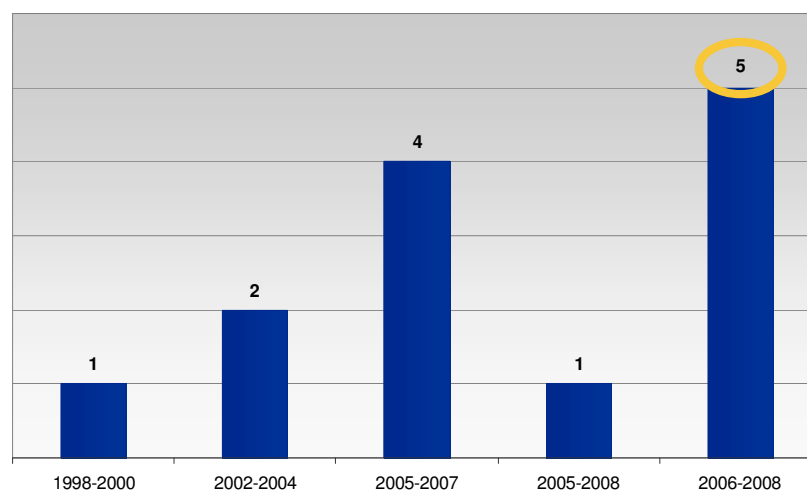
Country	Year of the survey	Reference period	Size (cut-off point)	Industries covered	Sample size	Response rate
1. Burkina Faso	2009	2006-08			159	37,00%
2. Egypt	2009	2006-08	Emp1	Manuf / serv / IT	>1000	
3. Ethiopia	2008	2005-07			433	82,00%
4. Ghana	2008	2006-08	Emp5	Manuf / serv / HEI / gov	200	37,00%
5. Lesotho	2009	2006-08	Emp1	Manuf / serv	146	40,50%
6. Mozambique	2009	2006-08	Emp10		1.080	9,00%
7. Nigeria	2009	2005-07		Manuf	1.000	68,00%
8. South Africa	2001	1998-00	Emp10	Manuf / serv / min	7.039	8,77%
	2005	2002-04	Turn		2.627	37,28%
	2008	2005-07			4.000	
9. Tanzania	2009	2005/06-07/08	Emp26		616	
10. Tunisia	2005	2002-04	Emp10	Manuf / serv / min	739	79,30%
	2008	2005-07				

11

4. Innovation surveys in developing countries: Africa

Reference Period

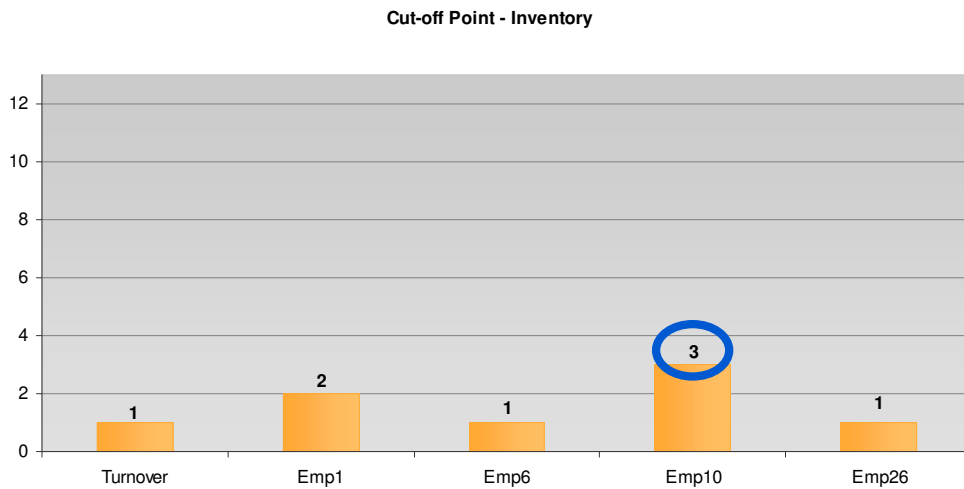
Reference Period - Inventory



12

4. Innovation surveys in developing countries: Africa

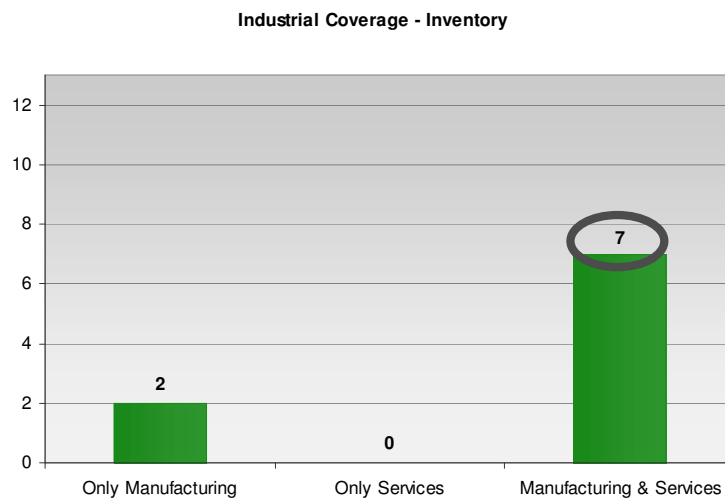
▪ Cut-off point



13

4. Innovation surveys in developing countries: Africa

▪ Industrial coverage



14

4. Innovation surveys in developing countries: Asia

Asia	Number of surveys developed	Number of surveys analysed	Methodological base
1. Abu Dhabi*	1	1	OM/CIS
2. China	1	1	OM/CIS
3. India	1	0	OM/CIS
4. Indonesia	1	1	OM/CIS
5. Israel	1	1	OM/CIS
6. Korea	6	1	OM/CIS
7. Malaysia	5	4	OM/CIS
8. Philippines	1	1	OM/CIS
9. Singapore	2	0	OM/CIS
10. Sri Lanka	1	1	OM/CIS
11. Thailand	4	3	OM/CIS
11 Asian countries	24	14	-

15

4. Innovation surveys in developing countries: Asia

Country	Year of the survey	Observation period	Size (cut-off point)	Industries covered	Sample size	Response rate
1. Abu Dhabi	2009	2006-08	Emp10	Manuf / serv / com & trade / constr / transp / fin serv	433	93.00%
2. China	2007	2004-06	Turn*	Manuf / min / elec, gas & water	75,521	89.00%
3. Indonesia	2009	2005-08	Emp20	Manuf	1,300	
4. Israel	2010	2006-08	Emp10	Manuf / elec / water supply & constr / wholesale & retail trade / accomm serv & rest / transp, storage & comm / banking, insurance & other fin inst / business activ	2,670	
5. Korea	2005	2002-04		Manuf		
6. Malaysia	1994	1990-94		Manuf	815	50.60%
	1999	1997-99	Turn		33.97%	
	2001	2000-01	Emp1		4,000	18.73%
	2004	2002-04	Emp5		12.12%	
7. Philippines	2010	2009-10		Manuf / serv		
8. Sri Lanka	2009	2005-09		Manuf / agric & plant / constr / fishing / educ / trans & storage / min & quarrying / elec, gas & water supply / ICT / health & social works / sewage & refuse disp	1,869	20.00%
9. Thailand	1999	1999	Turn	Manuf	2,166	47.00%
	2001	2000		Manuf / serv	6,082	36.90%
	2003	2003			6,031	42.80%

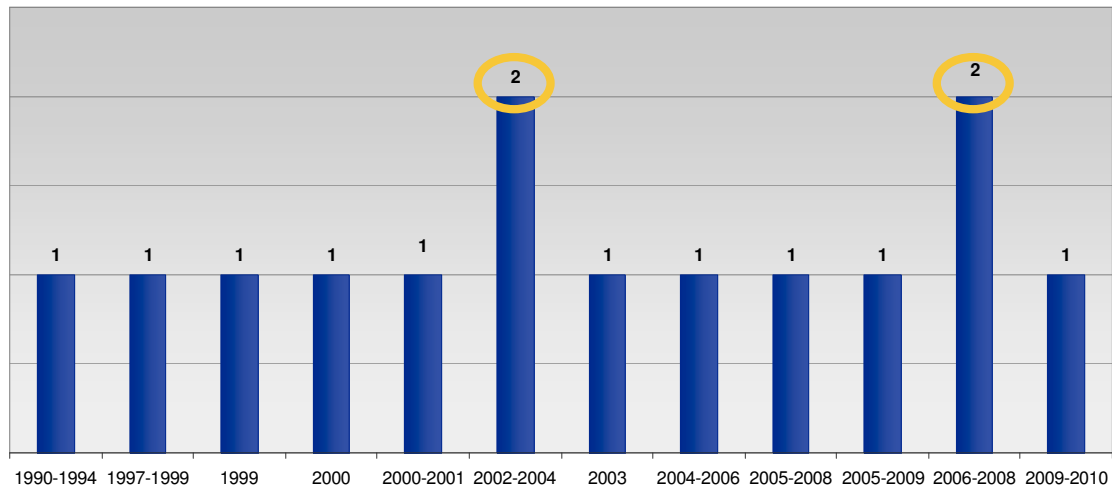
*The number of employees is also considered

16

4. Innovation surveys in developing countries: Asia

Reference Period

Reference Period - Inventory

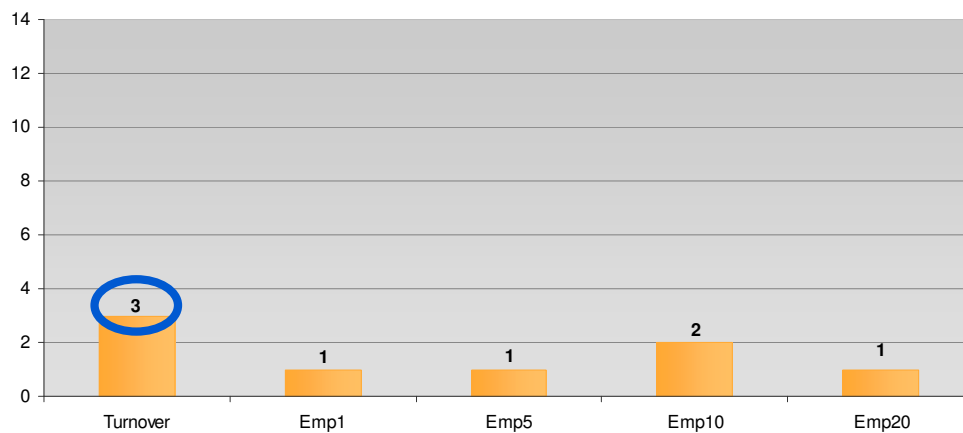


17

4. Innovation surveys in developing countries: Asia

Cut-off point

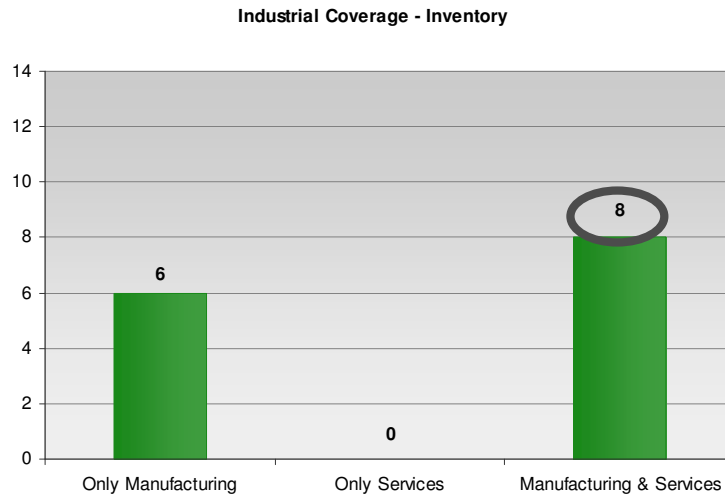
Cut-off Point - Inventory



18

4. Innovation surveys in developing countries: Asia

Industrial coverage



19

4. Innovation surveys in developing countries: LAC

LAC	Number of surveys developed	Number of surveys analysed	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. Ecuador	1	0	?
9. Mexico	5	4	OM/CIS
10. Panama	2	2	?
11. Paraguay	1	1	BM
12. Peru	2	2	?
13. Trinidad and Tobago	4	0	OM/BM
14. Uruguay*	3	3	BM
15. Venezuela	2	1	OM
15 LAC countries	46	36	-

* The survey on agricultural innovation is not included

20

4. Innovation surveys in developing countries: LAC

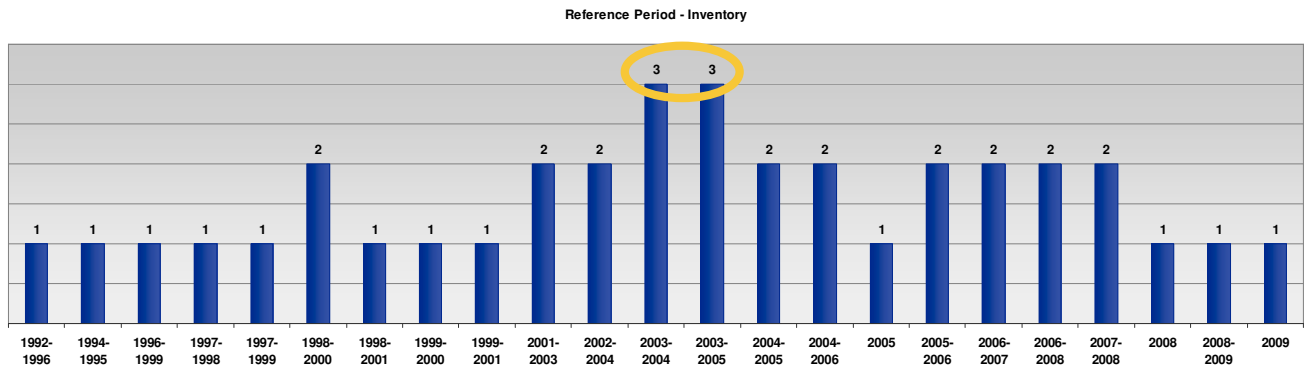
Country	Year of the survey	Reference period	Size (cut-off point)	Industries covered	Sample size	Response rate
1. Argentina	1996	1992-96		Manuf	2,333	65.71%
	2001	1998-01			2,229	75.73%
	2004	2002-04			2,133	76.28%
	2005	2005			2,175	77.00%
2. Brazil	2000	1998-00	Emp10	Manuf	11,044	93.50%
	2003	2001-03		Manuf	11,337	93.50%
	2005	2003-05		Manuf / serv / ICT / R&D	14,334	93.63%
	2008	2006-08		Manuf / serv / ICT / R&D	16,371	96.71%
3. Chile	1995	1994-95	Emp10	Manuf	541	99.00%
	1998	1997-98		Manuf	521	95.00%
	2001	1999-01		Manuf / serv / min / energy gen & dist	896	95.00%
	2005	2003-04	Manuf / serv / min / ene gen & dist / fishing / agric / constr / transp & communic / fin / real state / public adm / defense / teaching / health & social serv / other community activ	2,877	95.00%	
	2007	2005-06	Turn	Manuf / serv / min / ene gen & dist / fishing / agric / constr / transp & communic / fin / real state / public adm / defense / teaching / health & social serv / other community activ	3,545	
	2009	2007-08				

21

Country	Year of the survey	Reference period	Size (cut-off point)	Industries covered	Sample size	Response rate
4. Colombia	2005	2003-04	Emp1	Manuf	6,670	92.53%
	2006	2004-05	Emp20	Serv		
	2007	2005-06	Emp10	Manuf	6,957	87.39%
	2009	2007-08				
5. Costa Rica	2007	2006-07	Emp6	Manuf / ener / telecom	566	66.00%
	2008	2008		Manuf / ener / telecom	630	79.00%
	2009	2009		Manuf / ener / telecom		
6. Cuba	2006	2003-05				
7. Dominican Republic	2005	2003-05				
8. Mexico	2001	1999-00	Emp50	Manuf / serv	1,610	
	2006	2004-05			3,124	86.68%
	2008	2006-07				
	2010	2008-09				
9. Panama	1999	1996-99	Emp1		280	
	2008	2006-08				
10. Paraguay	2007	2004-06			601	
11. Peru	1999	1997-99				
	2004	2002-04			7,290	67.38%
12. Uruguay	2000	1998-00	Emp5	Manuf	762	92.00%
	2003	2001-03		Manuf	828	98.31%
	2006	2004-06		Manuf / serv	1,794	97.16%
13. Venezuela	2004	2003-04			2,256	75.10%

4. Innovation surveys in developing countries: LAC

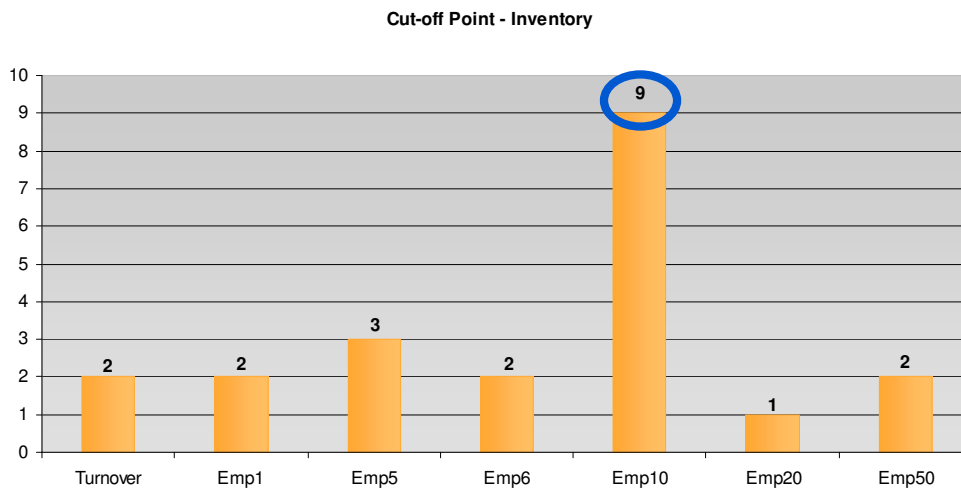
Reference Period



23

4. Innovation surveys in developing countries: LAC

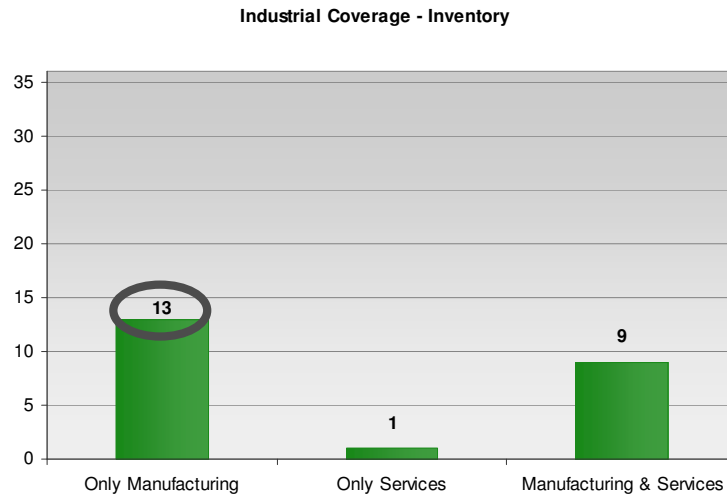
Cut-off point



24

4. Innovation surveys in developing countries: LAC

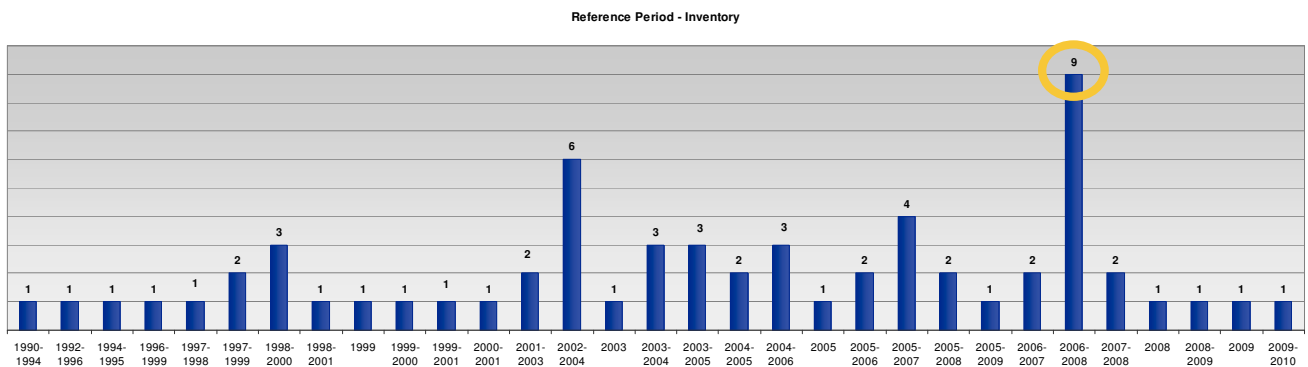
Industrial coverage



25

4. Innovation surveys in developing countries: Overall

Reference Period



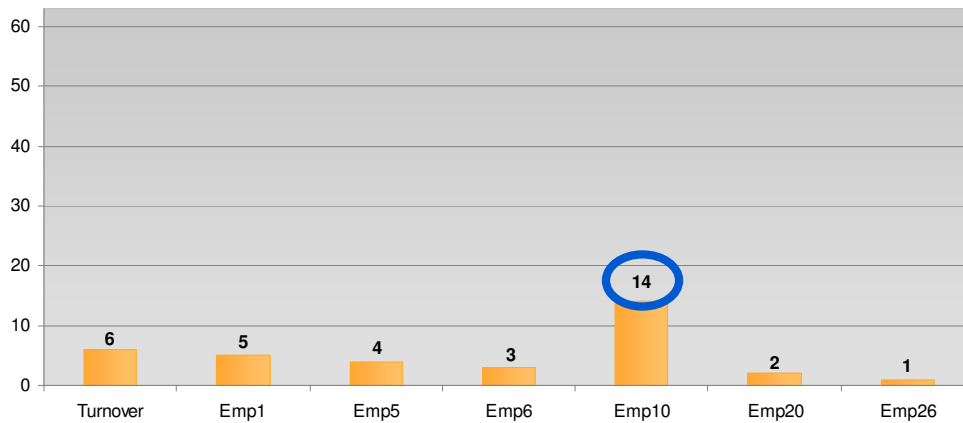
- **Africa:** Burkina Faso, Egypt, Ghana, Lesotho, Mozambique;
- **Asia:** Abu Dhabi, Israel;
- **LAC:** Brazil, Panama.

26

4. Innovation surveys in developing countries: Overall

▪ Cut-off point

Cut-off Point - Inventory

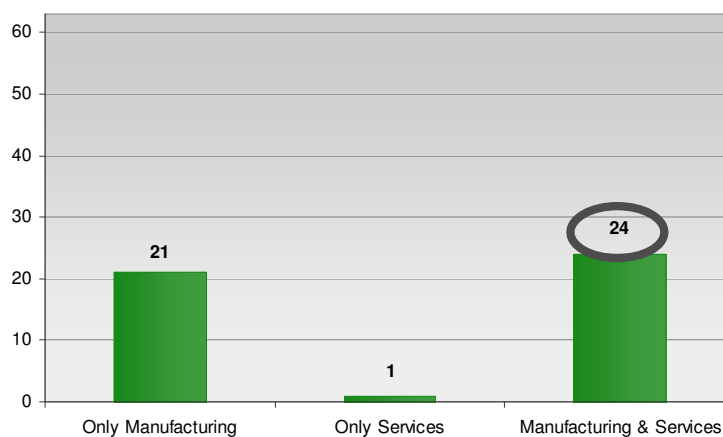


- **Africa:** Mozambique, South Africa, Tunisia;
- **Asia:** Abu Dhabi, Israel;
- **LAC:** Brazil, Chile, Colombia.

4. Innovation surveys in developing countries: Overall

▪ Industrial coverage

Industrial Coverage - Inventory



4. Innovation surveys in developing countries: Overall

- **Ref Per (2006-2008) x Cut-off (Emp10)**
 - **Africa:** Mozambique;
 - **Asia:** Abu Dhabi, Israel;
 - **LAC:** Brazil.

- **Ref Per (2006-2008) x Cut-off (Emp10) x Ind Cov (Manuf&Serv)**
 - **Asia:** Abu Dhabi, Israel;
 - **LAC:** Brazil.

- **Ref Per (3-years) x Cut-off (Emp10) x Ind Cov (Manuf&Serv)**
 - **Africa:** South Africa, Tunisia;
 - **Asia:** Abu Dhabi, Israel;
 - **LAC:** Brazil, Chile.

29

4. Innovation surveys in developing countries: Overall

- **Most frequent questions:**

Question	Frequency
Basic information	63 (100%)
Product innovation	63 (100%)
Process innovation	63 (100%)
Engagement in innovation activ	61 (97%)
Expenditure on innovation activ	58 (92%)
Funding	58 (92%)
Hampering factors	57 (90%)
Sources of information	56 (89%)
Co-operation	55 (88%)
Organisational innovation	49 (78%)
Marketing innovation	45 (71%)
Effects of innovation	39 (62%)
IPR	38 (60%)
Objectives of innovation	32 (51%)

30

4. Innovation surveys in developing countries

- **Inventory - next steps:**
 - Reorganise the regions;
 - Get the missing information;
 - **Add new countries - EECA;**
 - Disseminate the database;
 - Updating.

5. The UIS pilot innovation data collection

- **Launch:** June, 2011;
- **Sample:** 15 developing countries;
- **Observation period:** most recent innovation survey for which data are available;
- **Topics:**
 - Basic methodology (metadata)
 - Product innovation
 - Process innovation
 - Innovation activities and expenditures
 - Funding
 - Sources of information
 - Co-operation
 - Hampering factors
 - Organisational innovation
 - Marketing innovation

Thank you!

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

I.marins@uis.unesco.org