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CONTRACEPTIVE SECURITY INDEX 2012

A Decade of Monitoring Progress and Measuring Success

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Abstract
Without a reliable supply of contraceptives, family planning programs cannot provide quality services to clients. Critical to this is contraceptive security (CS)-where every person is able to choose, obtain, and use quality contraceptives. The Contraceptive Security Index measures countries' level of CS through a set of 17 indicators covering five strategic areas for over 60 countries. With new data collected in 2012, this represents a decade of scores since 2003. This decade corresponds to significant efforts by global donors to improve CS throughout the world.

Results show global progress toward CS, with the highest component scores in supply chain, but most progress in finance. Notably, countries with the lowest scores in 2003 made the most progress, particularly in sub-Saharan Africa. Despite these achievements, challenges remain. The index can be used to advocate for CS, set priorities, improve resource allocation, and monitor progress toward achieving a secure supply of quality contraceptives.

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A primary goal of reproductive health and family planning programs is to ensure that people can choose, obtain, and use a wide range of high-quality, affordable contraceptive methods and condoms for STI/HIV prevention. Referred to as *contraceptive security*, this goal requires sustainable strategies that will ensure and maintain access to and availability of supplies.

As global demand for family planning continues to rise, contraceptive security (CS) has become more challenging to achieve. Adequate financing for reproductive health (RH) and family planning programs is not keeping pace with demand; donor and national resources are more constrained than ever. Despite investments in service delivery and logistics systems, these systems remain inadequate in many countries. At the same time, increased demand—coupled with the impact of the HIV and AIDS pandemic, health sector reforms, limited national and international funding, and the brain drain—leaves countries unable to meet all their populations' RH needs.

It remains critical that stakeholders and program managers focus attention on long-term CS. Programs cannot meet their clients' RH and family planning needs without the reliable availability of high-quality contraceptive supplies and services. Attaining the poverty reduction and health goals adopted by many countries will be slowed unless improvements are made in CS. Ensuring contraceptive supply and service availability to clients requires a multi-sectorial approach. The public and private sectors must work together to ensure an enabling policy environment, appropriate forecasting and procurement of commodities, efficient supply chains, well-trained providers, effective service delivery systems, an accepting social environment, and adequate financing. To plan effective interventions to reach this goal, policymakers, program managers, and international donor agencies need to know if and how their programs are progressing toward CS.

This wall chart presents a set of indicators that can be used to measure a country's level of CS and to monitor global progress toward reaching this goal over time. The indicators are aggregated to establish a composite index. The *Contraceptive Security Index* was first calculated and presented in 2003 and again in 2006 and 2009; the *Contraceptive Security Index 2012* presents the latest update of these data, representing a full decade of monitoring progress and measuring success.

RESULTS

A total of 67 countries are represented in the 2012 index; 48 countries have scores for all four indices, to date.

Table 1 shows the raw data for the 17 indicators, grouped into the five components that were used to construct the *CS Index*: supply chain, finance, health and social environment, access, and utilization. This represents the most current data available. However, where new values were not available in 2012, raw scores from the 2009 index are included in this index as the most current data available. Data from 2003 and 2006 were not carried forward to this version.

Table 2 shows the weighted scores by component and total. Figure 1 shows the total weighted scores for the 67 countries included in the index. The range of possible scores in the weighted *CS Index* is 0 to 100, although actual scores in 2012 range from 39.1 to 70.8. In 2003, the range was 28.1 to 68.1; in 2006, the range was 35.5 to 73.2; and in 2009, the range was 37.4 to 74.1. The lowest score in 2012 represents a 39 percent increase over the lowest score in 2003. (see figure 2).

While total scores from the highest-performing countries remained relatively flat, scores from the lowest-performing countries increased dramatically over the past decade; average scores across sub-Saharan African countries increased 13 percent from 2003 to 2012.

Using a paired t-test, the 2012 total scores represent a statistically significant increase from the 2003 scores for the 48 countries scored in both indices, which indicates overall improvement. Figure 3 compares total index scores averaged by region. The observed increases in total index score for countries overlapping in the 2003 and 2012 indices are significant only in sub-Saharan Africa. For the overlapping countries, the global averages for the components show a significant improvement in supply chain, finance, health and social environment, and access from 2003 to 2012 (see figure 4). In many cases, the component scores by region also showed

improvement (excluding Eastern Europe and Central Asia, as there were too few overlapping countries for comparison between 2003 and 2012), although these improvements were only significant in the following cases:

Supply Chain: Latin America & the Caribbean and sub-Saharan Africa

Finance: Asia & the Pacific and Middle East & North Africa

Health and Social Environment: Asia & the Pacific, Latin America & the Caribbean, and sub-Saharan Africa

Access: Middle East & North Africa and sub-Saharan Africa

Utilization: None.

In every *CS Index* to date, the highest average component scores were in supply chain management and the lowest in finance; however, the most progress was made in the finance component over the past decade (i.e., average finance scores across the 48 countries increased 11 percent since 2003). Component scores for an individual country can be compared within a year (maximum weighted score of 20 for each component), enabling users to identify components that need attention and further assessment. Countries can score similarly overall but have strengths or weaknesses in different components. This highlights the need for the indicators to be reviewed within the broader context of a country, including aspects not captured in the *CS Index* because of data limitations. Finally, it is important to note that movement in rank up or down by a few places at the country level may not represent significant differences or changes in the level of contraceptive security.

The overlapping 48 countries scored in the *CS Index* for 2003 and 2012 were divided into three clusters of countries: top, middle, and bottom scorers. Each cluster has an equal number of countries based on countries' ranking in each year by total index scores (e.g., the top cluster includes the 16 top-ranked countries in each year and so on). As shown in figure 5, in 2003, the majority of the Asia & the Pacific and Latin America & the Caribbean countries included in this analysis were classified in the top cluster, while sub-Saharan Africa countries comprised the entire bottom cluster. By 2012, sub-Saharan African countries showed the most progress in total scores, as many countries moved out of the bottom cluster and into the middle cluster. Ultimately, the results show that the lowest-scoring countries had the most potential; in fact, their scores improved more than the other two clusters.

Table 1. Contraceptive Security Index Indicators, Raw Data

	SUPPLY CHAIN					FINANCE			HEALTH & SOCIAL ENVIRONMENT			ACCESS			UTILIZATION		
	Storage and Distribution	LMIS	Forecasting	Procurement	Contraceptive Policy	Gov. Health Expenditure	Per Capita GNI, PPP	Poverty Level	Governance	Women's Education	Adult HIV Prevalence	Access to FP Methods	Public Sector Targeting	Spread of Access to FP Methods	Method Mix	Unmet Need for FP	CPR
	max=30	max=12	max=8	max=8	max=4	max=35	max=$20,000	max=100	max=30	max=100	max=50	max=4	max=10	max=1	max=1	max=50	max=100
ASIA & THE PACIFIC																	
Bangladesh	25.7	12.0	8.0	8.0	2.0	9.4	1,810	32	9.8	45	<0.1	2.5	1.5	0.06	0.48	16.8	52
Cambodia					2.8	14.7	2,080	30	9.9	36	0.5	2.1	1.4	0.05	0.70	16.9	35
India	23.0	9.4	6.9	7.4	2.6	8.4	3,400	30	13.1	56	0.3	2.1	1.0	0.06	0.72	20.5	47
Indonesia	22.5	12.0	4.0	8.0	2.5	7.8	4,200	13	12.1	74	0.2	2.3	3.0	0.05	0.46	13.1	57
Nepal	23.7	12.0	8.0	8.0	2.1	7.9	1,210	25	9.6	41	0.4	2.6	1.1	0.02	0.18	27.5	43
Pakistan	24.2	7.7	6.8	6.9	2.7	5.1	2,790	22	8.2	29	0.1	1.7	0.9	0.09	0.27	25.2	19
Philippines	7.1	6.9	6.9	5.0	1.4	7.5	3,980	27	11.6	86	<0.1	1.1	1.2	0.08	0.35	22.0	34
Vietnam					2.8	7.8	3,070	15	11.7	64	0.4	2.9		0.02		4.3	60
EASTERN EUROPE & CENTRAL ASIA																	
Albania	18.1	12.0	8.0	7.5		10.0	8,520	12	14.0	73	0.1		1.5		0.27	12.9	10
Armenia	15.2	7.4	1.7	4.7	1.4	8.5	5,660	36	13.2	94	0.1	1.2	0.8	0.29	0.49	13.5	26
Azerbaijan	0.0	0.0	0.0	0.0	1.7	4.2	9,270	16	10.1	100	0.1	1.6	0.6	0.05	0.57	15.4	13
Georgia	20.0	9.3	2.2	5.0	2.4	9.4	4,990	25	14.6	88	0.1	1.9	1.2	0.08	0.32	21.3	
Kyrgyzstan					1.1	18.5	2,070	34	9.8	85	0.3	1.9		0.08		1.0	46
Tajikistan					3.2	6.1	2,140	47	8.4	78	0.2	2.5		0.05		23.7	32
Turkey					3.0	18.6	15,530	18	14.7	77	<0.1	2.3		0.02	0.19	6.0	46
Ukraine	10.5	6.9	0.6	2.0	2.1	9.4	6,620	3	11.6	94	1.1	2.1	0.6	0.06	0.46	10.1	48
Uzbekistan					2.2	8.5	3,110	28	7.1	100	0.1	2.3		0.05		8.0	59
LATIN AMERICA & THE CARIBBEAN																	
Bolivia	21.8	12.0	4.6	2.0	1.7	16.7	4,640	60	11.7	80	0.2	2.4	1.1	0.01	0.13	20.1	34
Brazil					2.8	16.1	11,000	21	15.9	100	0.6	2.0		0.05		6.0	77
Colombia	30.0	10.0	4.0	7.3	3.1	27.9	9,060	37	13.0	99	0.5	2.9	1.1	0.02	0.58	8.1	73
Dominican Republic	23.7	5.5	7.4	4.7		15.5	9,030	34	12.6	82	0.9		1.7		0.59	11.1	70
El Salvador	18.8	11.4	8.0	5.4	2.7	17.4	6,550	38	14.4	65	0.8	2.3	1.7	0.01	0.45	5.4	66
Guatemala	22.7	9.0	6.3	5.9	2.4	21.1	4,650	51	11.4	55	0.8	2.1	1.0	0.01	0.35	20.8	44
Guyana	16.5	12.0	8.0	7.4		14.9	3,450		12.8	100	1.2		1.2		0.30	28.5	40
Haiti	12.3	6.0	7.4	4.4		4.5	1,180	65	8.1		1.9		0.7		0.28	37.3	24
Honduras	14.3	5.4	6.9	3.0	2.5	14.0	3,770	60	11.4	72	0.8	2.4	1.1	0.02	0.21	16.8	56
Jamaica					3.6	7.1	7,310	10	14.6	93	1.7	2.6		0.06	0.18	7.2	68
Mexico					2.8	12.1	14,400	51	13.8	93	0.3	2.7		0.03		12.0	66
Nicaragua	21.3	12.0	8.0	7.0	2.1	26.1	2,790	46	11.0	72	0.2	2.3	1.5	0.03	0.19	10.7	69
Paraguay	17.0	9.4	4.0	8.0	2.1	17.8	5,080	35	11.0	68	0.3	2.2	2.6	0.02	0.02	4.7	70
Peru	17.0	7.4	6.9	7.4	2.3	15.4	8,930	31	13.6	89	0.4	1.9	1.3	0.06	0.16	6.1	51
MIDDLE EAST & NORTH AFRICA																	
Egypt	28.3	10.0	5.7	5.7	2.8	7.0	6,060	17	11.6	77	<0.1	2.2	1.2	0.04	0.50	11.6	58
Jordan					2.6	20.9	5,800	13	14.5	90	0.2	2.3	1.5	0.04	0.39	13.4	42
Morocco					3.3	6.8	4,600	9	13.1	51	0.1	2.5		0.05		11.0	55
Yemen	12.0	4.9	6.3	5.4	1.8	4.3	2,500	35	7.7	30	0.2	1.6		0.09		50.0	19
SUB-SAHARAN AFRICA																	
Benin					2.5	15.5	1,590	39	13.3	26	1.2	1.3	0.3	0.20	0.19	27.3	6
Botswana	16.8	5.0	5.0	3.0		17.0	13,700	15	19.0	84	24.8				0.70		51
Burkina Faso	16.9	6.0	6.2	4.8	2.5	30.3	1,250	47	13.4	17	1.2	2.1		0.08	0.22		15
Cameroon	22.8	7.4	2.9	5.4		8.5	2,270	40	9.7	38	5.3				0.64		14
Chad	14.0	6.9	6.3	7.3	2.9	3.3	1,220	55	6.7	14	3.4	1.4		0.13	0.00	20.7	
Congo, Dem. Rep.	11.0	6.3	1.7	4.7	1.4	25.8	320	71	5.1	26	1.4	1.5	0.5	0.11	0.63	26.9	5
Congo, Rep. of					2.1	5.3	3,190	50	8.9	40	3.4	1.7	0.5	0.07	0.71	19.5	20
Côte d'Ivoire	12.8	6.9	6.3	5.4	3.3	5.4	1,810	43	7.7	19	3.4	2.1		0.05	0.42	29.0	8
Ethiopia	17.0	4.4	6.9	2.7	2.5	13.5	1,040	39	9.3	30	2.1	1.7	0.6	0.01	0.67	26.3	27
Gambia	21.8	7.4	6.9	5.0	2.6	11.3	1,300	48	11.8	49	2	2.0		0.09			
Ghana	17.8	12.0	7.2	5.5	2.5	17.2	1,620	28	15.6	54	1.8	2.0	0.9	0.07	0.04	35.7	17
Guinea	16.5	10.0	5.1	5.0	2.2	1.8	1,020	53	7.4	26	1.3	1.7	0.3	0.04	0.16	21.9	4
Kenya	12.2	10.0	8.0	5.4	2.3	7.0	1,640	46	11.0	56	6.3	2.0	0.6	0.06	0.41	25.6	39
Lesotho	17.0	8.0	1.1	2.7	1.9	8.7	1,970	57	14.2	45	23.6	2.3	0.5	0.04	0.16	23.3	46
Liberia	17.0	7.0	6.3	7.4	2.6	11.1	340	64	10.5	27	1.5	1.2	0.3	0.11	0.03	35.7	10
Madagascar	20.2	12.0	8.0	8.0	2.4	16.7	960	69	10.5	31	0.2	2.5	0.8	0.02	0.56	19.0	28
Malawi	17.7	4.9	2.9	3.4	1.6	14.2	860	52	13.4	28	11	1.9	0.9	0.04	0.51	26.2	42
Mali	12.3	11.4	7.4	5.4		18.2	1,030	47	12.4	30	1		0.4		0.34	27.6	7
Mozambique	13.7	3.4	6.9	5.4	2.7	12.2	930	55	13.5	21	11.5	1.9		0.06			11
Namibia	18.0	9.4	3.7	4.0		12.1	6,420	38	16.8	71	13.1		0.5		0.26	20.7	54
Niger	12.8	10.0	6.9	4.7		33.3	720	60	10.9	9	0.8		0.3		0.56	16.1	5
Nigeria	24.5	12.0	2.3	5.4	1.9	4.4	2,240	55	8.0	27	3.6	1.2	0.2	0.16	0.30	20.2	9
Rwanda	25.2	10.5	7.4	6.7	3.4	20.1	1,150	45	10.5	26	2.9	2.9	1.0	0.01	0.44	20.8	45
Senegal	25.3	12.0	8.0	8.0	2.8	11.6	1,910	51	12.4	27	0.9	1.9	0.4	0.07	0.32	30.9	12
Sierra Leone					2.1	4.1	830	70	11.0	28	1.6	1.5	0.2	0.12	0.26	28.4	6
South Africa					3.1	10.3	10,360	23	16.4	97	17.8	2.3		0.07		15.0	60
Swaziland					1.5	10.1	5,600	69	11.8	50	25.9	2.3	0.9	0.05	0.21	13.0	63
Tanzania	21.5	9.4	6.3	6.4		13.8	1,440	33	13.0		5.6		0.7		0.18	25.3	26
Togo	22.6	9.3	7.4	7.5		10.5	890	62	9.7	28	3.2					31.0	13
Uganda	22.3	4.3	6.3	7.4	2.5	11.2	1,250	25	11.4	25	6.5	1.8	0.5	0.05	0.35	38.0	26
Zambia	23.0	12.0	6.9	7.4	2.4	14.4	1,380	59	12.9	44	13.5	2.2	0.6	0.37	0.10	26.6	27
Zimbabwe	23.3	9.4	8.0	8.0	3.1			72	5.5	39	14.3	2.4	1.0	0.04	0.59	14.6	57

Table 2. Weighted Component Scores

	Supply Chain (20 points)	Finance (20 points)	Health & Social Environment (20 points)	Access (20 points)	Utilization (20 points)	Total 2012 (max=100 points)
ASIA & THE PACIFIC						
Bangladesh	17.4	7.0	11.8	11.4	11.4	59.0
Cambodia	14.6	8.1	11.2	10.7	8.7	53.4
India	15.9	7.4	13.3	10.4	8.9	56.0
Indonesia	15.5	8.7	14.3	12.2	12.3	63.0
Nepal	17.2	6.9	11.5	11.5	11.4	58.5
Pakistan	15.3	7.1	10.4	9.4	9.4	51.7
Philippines	10.6	7.7	15.0	8.7	10.3	52.3
Vietnam	17.1	8.2	13.5	12.6	13.8	65.2
Regional Average	15.5	7.6	12.6	10.9	10.8	57.4
EASTERN EUROPE & CENTRAL ASIA						
Albania	16.6	10.6	14.6	9.2	10.5	61.5
Armenia	9.1	7.8	15.8	7.3	10.0	50.0
Azerbaijan	1.7	9.5	15.6	9.4	8.4	44.6
Georgia	11.7	8.5	15.8	10.1	11.5	57.6
Kyrgyzstan	9.6	8.6	14.5	10.5	12.8	56.0
Tajikistan	14.2	5.4	13.7	11.0	9.3	53.6
Turkey	13.7	14.2	15.1	11.0	14.3	68.2
Ukraine	7.1	10.5	15.4	10.2	12.1	55.2
Uzbekistan	10.8	7.5	14.9	11.3	12.6	57.1
Regional Average	10.5	9.2	15.0	10.0	11.3	56.0
LATIN AMERICA & THE CARIBBEAN						
Bolivia	11.9	7.4	14.6	11.3	12.1	57.3
Brazil	14.1	12.0	16.8	10.8	15.9	69.5
Colombia	16.1	12.5	16.1	12.0	13.2	70.0
Dominican Republic	13.9	10.3	14.8	12.1	12.6	63.7
El Salvador	15.7	9.7	14.1	11.6	14.0	65.1
Guatemala	14.5	8.8	12.8	10.8	11.1	58.0
Guyana	15.7	8.5	16.0	9.8	10.2	60.2
Haiti	11.4	3.6	12.2	10.2	8.1	45.5
Honduras	11.2	6.6	13.9	11.2	13.4	56.3
Jamaica	17.6	9.8	15.9	11.7	15.7	70.8
Mexico	13.5	10.4	15.9	11.8	14.5	66.0
Nicaragua	16.4	9.5	13.9	11.4	15.2	66.4
Paraguay	13.5	9.4	13.6	11.9	17.2	65.6
Peru	14.2	10.5	15.6	10.3	14.8	65.4
Regional Average	14.3	9.2	14.7	11.2	13.4	62.8
MIDDLE EAST & NORTH AFRICA						
Egypt	15.6	8.9	14.4	10.9	12.3	62.1
Jordan	11.9	11.7	15.9	11.3	11.8	62.5
Morocco	18.9	8.9	13.0	11.5	13.1	65.5
Yemen	10.8	6.0	10.3	9.0	6.7	42.9
Regional Average	14.3	8.9	13.4	10.7	11.0	58.2
SUB-SAHARAN AFRICA						
Benin	16.3	7.5	11.2	7.8	8.8	51.7
Botswana	11.0	13.5	13.2	10.3	11.8	59.7
Burkina Faso	12.3	9.7	10.6	9.9	8.6	51.1
Cameroon	11.9	6.4	10.7	8.8	6.1	43.9
Chad	13.8	4.0	8.6	8.5	11.5	46.5
Congo, Dem. Rep.	8.2	6.9	9.3	8.7	5.9	39.1
Congo, Rep. of	10.5	5.4	10.9	9.4	7.3	43.4
Côte d'Ivoire	13.1	5.4	9.2	9.9	7.2	44.8
Ethiopia	11.0	7.0	10.5	9.8	7.2	45.4
Gambia	13.9	6.0	12.3	9.8	8.7	50.7
Ghana	15.3	8.6	13.5	10.2	9.4	57.0
Guinea	12.8	3.8	9.9	9.4	9.6	45.5
Kenya	13.9	5.5	12.0	9.9	9.8	51.1
Lesotho	8.8	5.2	9.7	10.6	12.2	46.5
Liberia	14.0	4.6	10.6	8.2	9.1	46.5
Madagascar	17.1	5.6	11.0	11.2	8.9	53.9
Malawi	8.6	6.2	10.0	10.2	9.3	44.3
Mali	14.1	7.3	11.3	9.5	7.9	50.1
Mozambique	11.7	5.7	9.5	9.4	6.7	43.0
Namibia	12.1	8.6	13.4	11.2	12.4	57.7
Niger	13.1	9.3	9.6	9.2	7.8	48.9
Nigeria	13.0	4.6	9.8	7.7	9.2	44.3
Rwanda	17.3	7.9	10.4	12.1	10.6	58.3
Senegal	18.2	6.1	11.1	9.7	7.9	53.0
Sierra Leone	14.7	3.1	10.8	8.5	8.2	45.3
South Africa	7.6	10.5	14.4	10.4	14.2	57.2
Swaziland	5.6	5.9	9.2	10.8	14.4	45.8
Tanzania	14.8	7.5	10.7	9.3	10.5	52.9
Togo	15.8	4.9	10.3	8.9	7.9	47.8
Uganda	13.7	7.6	10.0	9.6	7.7	48.6
Zambia	16.6	5.9	10.7	8.3	10.9	52.4
Zimbabwe	17.3	2.4	8.6	11.1	11.3	50.6
Regional Average	13.1	6.5	10.7	9.6	9.3	49.3
Overall Average	13.3	7.7	12.5	10.2	10.7	54.5

Figure 1. Total Weighted Scores: 67 Countries

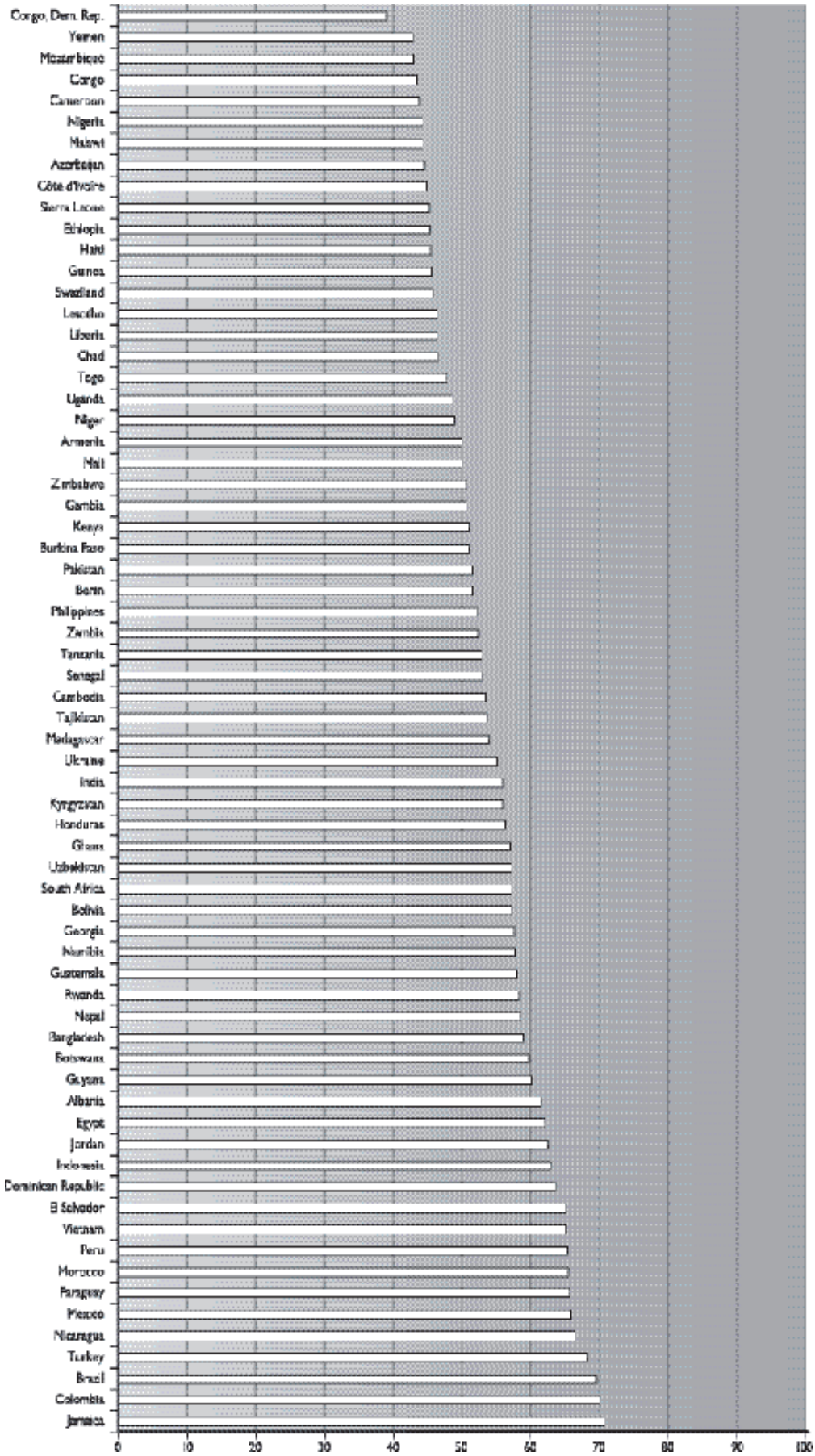


Figure 2. Highest and Lowest Total Scores per Year

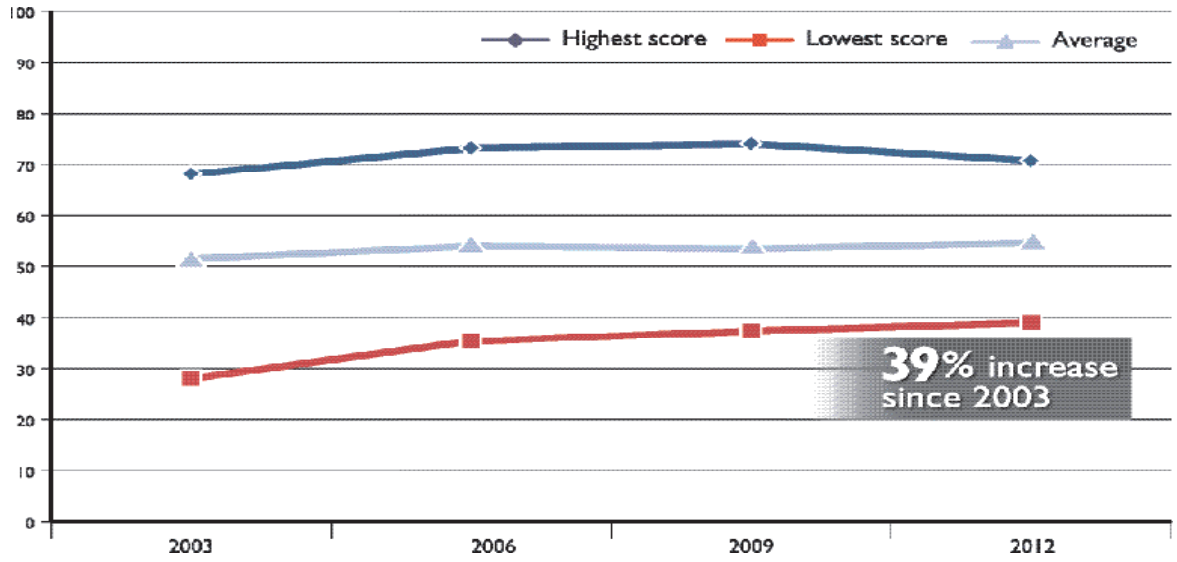


Figure 3. Total Scores Averaged by Region

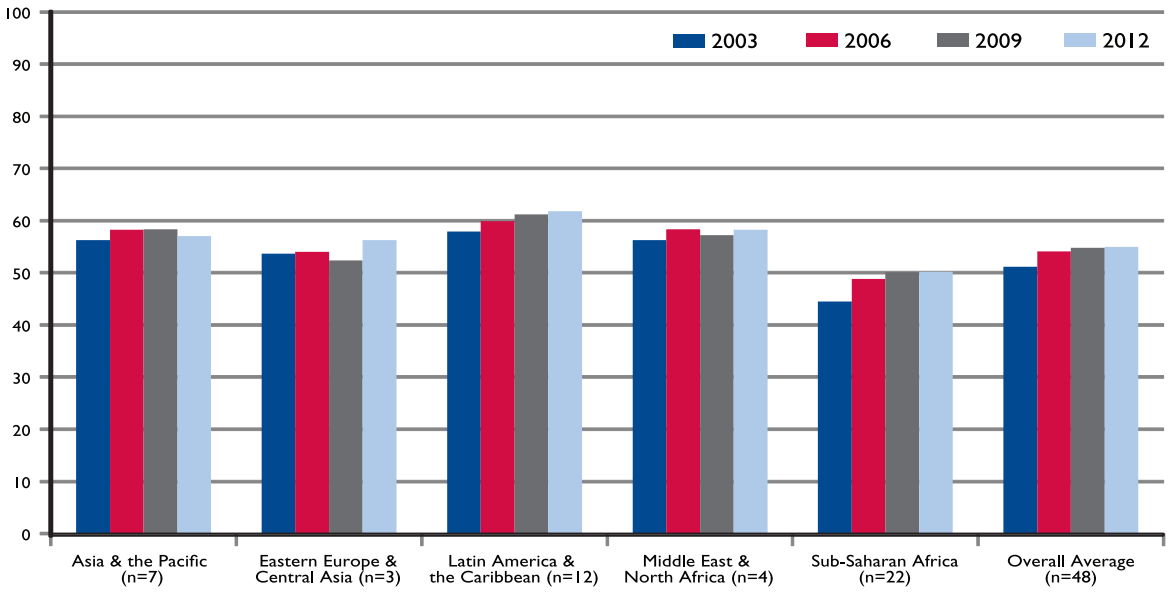


Figure 4. Global Average Scores by Component

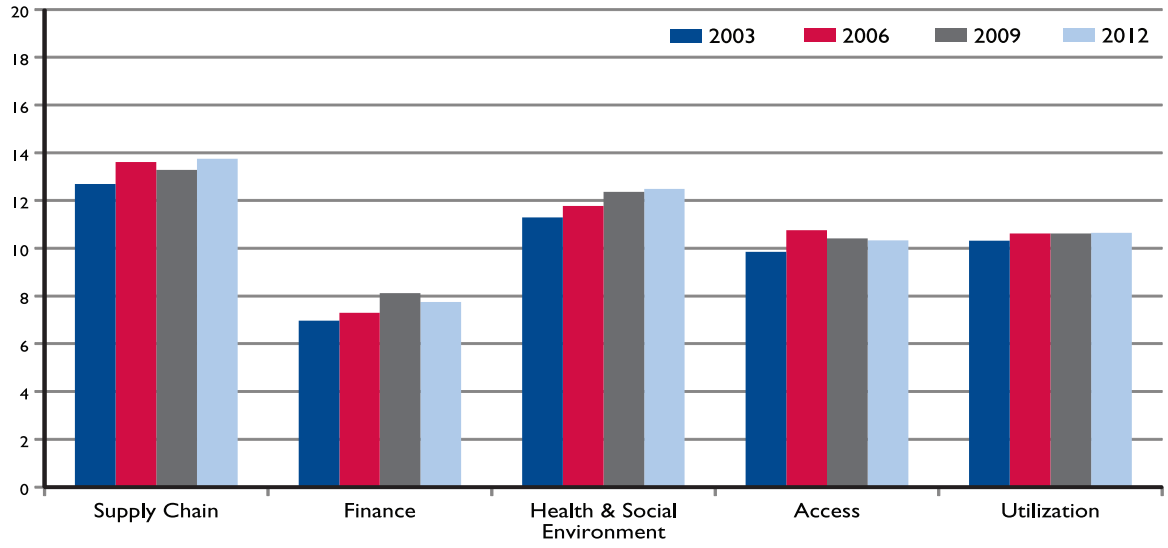
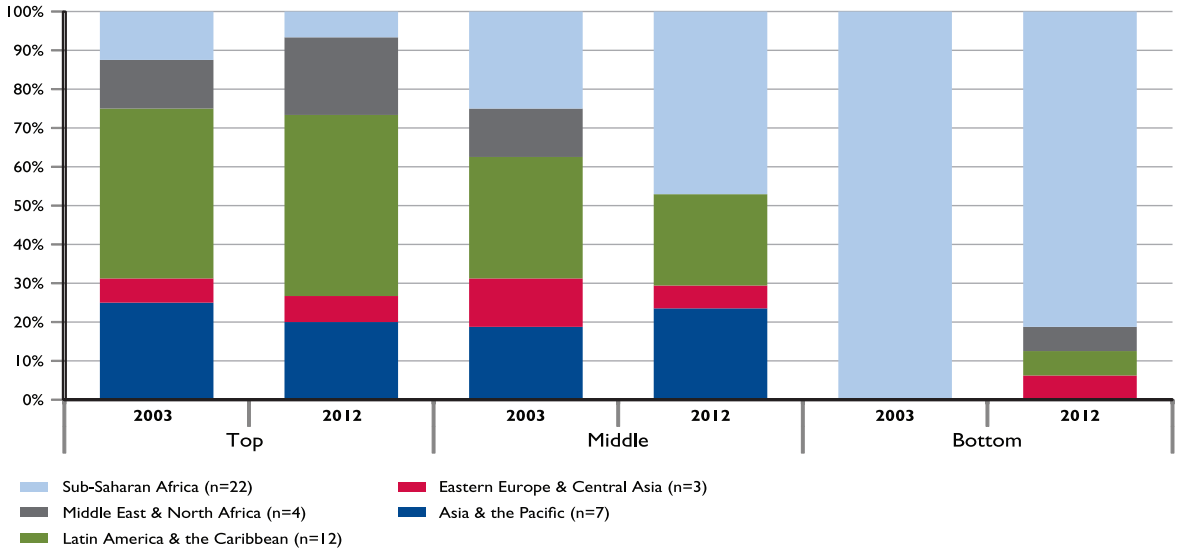


Figure 5. Percentage of Countries in Each Cluster by Region for 2003 and 2012



BACKGROUND

The *CS Index 2012* updates the findings from the 2003, 2006, and 2009 versions. The framework at the core of the *Strategic Pathway to Reproductive Health Commodity Security* (SPARHCS) was used as a conceptual guide in developing the *CS Index*. It defines the program and program environment components that are required to achieve RH commodity security, whether for contraceptives or for other RH commodities (see figure 6).

The *CS Index* and other efforts that promote and advance contraceptive security have drawn much needed attention to these issues and have led to a global movement around contraceptive security.

USES

The *Contraceptive Security Index* is a powerful tool for raising awareness about CS and the interrelationships between program components, different sectors, and program outcomes. At the national and international levels, the index can be used to set priorities; and to plan and advocate for supportive policies and other interventions that promote progress toward CS. At the country level, it can help identify areas of relative strength and weakness to help stakeholders target their resources more effectively and appropriately. However, because the *CS Index* presents a broad picture of CS in a country, in-depth assessments of specific components are required to identify issues that need to be addressed in national CS strategic plans.

The *CS Index* is also a useful guide for helping global donors and lenders determine the countries most in need of assistance and to determine what kind of assistance they need. The index can help country governments, donors, and lenders improve resource allocation by giving them a way to track where countries are on a continuum of CS.

With repeated measures taken over time, the index can provide a measure of progress toward the goal of CS. By drawing attention to the importance of CS, this tool can help donors and governments focus on meeting the growing contraceptive needs into the future.

METHODOLOGY

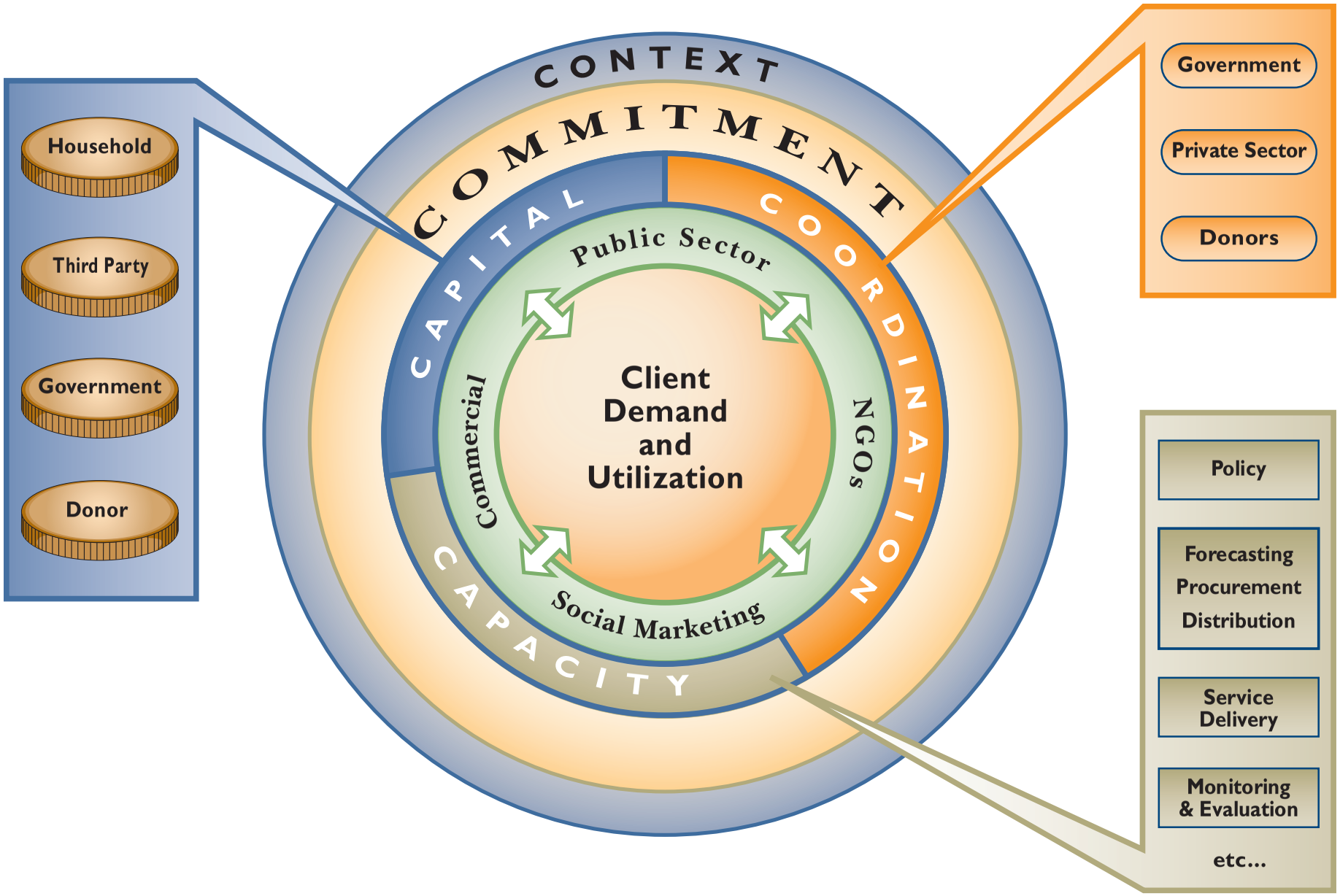
The original *CS Index* was developed in 2003 by a team of CS experts from USAID, DELIVER project, the POLICY Project of Futures Group, and Commercial Market Strategies (CMS). Using the same methodology as the 2003 index, the *CS Index* was updated in 2006, in 2009, and again, with this version, in 2012. Using the latest version of all reference documents, the same indicators and data sources were maintained for the 2012 index. In limited cases, to maintain the maximum number of countries in the index, alternate data sources were used for the most current indicator values. (Refer to notes by indicator below.) If new indicator values were not available since the publication of the 2009 index, the 2009 data are preserved as the most current data available. Data from 2003 and 2006 were not carried forward to this version.

The process of constructing the *CS Index* was planned to minimize data collection costs (using only secondary data), and to maximize data reliability, validity, and replicability. The selected indicators are a mix of inputs and outputs, and programmatic and macro-level issues. Together, they paint a picture of CS and promote a cross-sectorial approach to addressing CS. Although some indicators are highly correlated, each represents an important aspect of CS. The 17 indicators are arrayed across the five CS components described below; the components are aggregated to create the index. For detailed information about how missing data were filled in to calculate the index, how indicators were weighted, and other technical issues, please refer to the *Contraceptive Security Index Technical Manual* (USAID | DELIVER PROJECT 2009).

Methodological Considerations

This index represents a country's CS situation at this point in time, although the actual data were collected over a period of years. It is unavoidable that indicators will be updated for different countries at different intervals. Ideally, to use the results to monitor progress toward the goal of CS over time, the index will be updated periodically (i.e., every three years).

Figure 6. SPARHCS Framework for Reproductive Health Commodity Security



Comparisons can be drawn, over time, between the 2003 and 2006 findings at the aggregate level (i.e., by region, component, and total score), as presented in the *Results* section. However, because of a change in the data collection methodology for some of the supply chain indicators (see the *Methodology, Definitions, Component I: Supply Chain* section), comparisons across time between 2003 and 2006 at the country level, and at the individual supply chain indicator level, are not advisable. Nonetheless, the index's applicability for the other purposes mentioned above remains valid. After 2006, no changes were made to the data collection methodology; therefore, comparisons of data at the country level from 2006 into the future can be considered.

Definitions

Component I: Supply Chain—Each of the five indicators of logistics management represents a key function in the supply chain for contraceptive supplies. An effecti- supply chain ensures the continuous supply of sufficient quantities of high-quality contraceptives needed to achieve security. More effective management of supplies is associated with better prospects for contraceptive security.

When the *CS Index 2003* was calculated, the largest database available with the first four indicators listed below was from the application of the Family Planning Logistics Management (FPLM) project's *Composite Indicators for Contraceptive Logistics Management* (JSI/FPLM and EVALUATION Project 1999).[1] This tool was updated and improved under the DELIVER project and it became the *Logistics System Assessment Tool* (USAID | DELIVER PROJECT 2009),[2] which is the source of the updated data for the first four indicators for the *CS Index 2006, 2009 and 2012*. The two tools are comparable because the LSAT was directly derived from the Composite Indicators; however, the maximum possible score for each indicator changed in the new tool. Due to the change in the data collection tool and methodology, comparisons over time between the *CS Index 2003 and 2006* at the country level are discouraged. From 2006 forward, country-level comparisons are possible.

- **Storage and distribution**—Assesses storage capacity and conditions, standards for maintaining product quality, inventory control, stockouts, how system losses are tracked, and distribution and transportation systems.
- **Logistics management information system (LMIS)**—Assesses reporting systems, validation of data, information management, and use in decisionmaking.
- **Forecasting**—Assesses how forecasts of consumption are prepared, updated, validated, and incorporated into cost analysis and budgetary planning.
- **Procurement**—Assesses how forecasts are used to determine short-term procurement plans and the degree to which the correct amounts of contraceptives are obtained in an appropriate time frame.

The fifth supply-related indicator is drawn from the results of the Family Planning Effort (FPE) Survey (Ross and Smith 2010).[3]

- **Contraceptive policy**—Under some circumstances, locally manufactured contraceptives can provide an affordable and sustainable option for clients. In many countries, it will be more effective to have policies and regulations that facilitate open markets and the importation of competitively priced, high-quality products. This indicator measures the extent to which import laws and legal regulations facilitate the importation of contraceptive supplies that are not manufactured locally, or the extent to which contraceptives are manufactured within the country.

Component II: Finance—Sustainable and adequate financing for the procurement of contraceptives, service delivery, and other program components from international donors and lenders, national or local governments, households, and third parties is critical for ensuring contraceptive security. Without a commitment of financing, program quality and access will suffer and CS will not be sustainable. Data are not widely or readily available to obtain an adequate country-level picture of contraceptive financing by donors/lenders, third parties (e.g., insurers, employers), or the private sector. Three indicators are used to capture the prospects for government and household financing

of family planning services and contraceptives in a country. The World Bank's *World Development Indicators 2011* (WDI) are the primary data source for these indicators.

- **Government health expenditures as a percentage of total government spending**—A national government's commitment to public health, specifically to reproductive health and family planning, is critical for CS. The poorest segments of a population depend on free or subsidized health services, often provided by the government for essential preventive and curative health services. This indicator is a measure of political commitment to public health spending as a proxy for government commitment to family planning programs. Greater commitment to health spending means more potential resources for family planning programs as part of overall government health programs. This indicator is derived from two indicators in the WDI: public expenditures on health as a percentage of the gross domestic product (GDP), divided by total government expenditures as a percentage of GDP:

  (Gov Exp on Health/GDP) ÷ (Total Gov Exp/GDP) = (Gov Exp on Health/Total Gov Exp)

  For countries where WDI values were not available for these two indicators, values for government health expenditure as a percentage of total government spending were supplemented from the World Health Organization's *Global Health Expenditure Database*.

- **Per capita gross national income (GNI)**—A greater ability to pay for contraceptives at the household level is associated with better prospects for CS. To allow for a better comparison across countries, this indicator represents the average consumer's potential ability to pay for family planning services and contraceptives expressed in purchasing power parity (PPP), which corrects for the differences in the market price of goods in each country.

- **Poverty level**—While per capita income measures the average consumer's ability to pay, there are always inequalities in the distribution of income. High poverty rates can threaten CS if provisions are not made to ensure access to services and commodities for the poor. Higher poverty rates can indicate a greater reliance of the population on the public sector, adding stress to already overburdened systems. Because higher poverty rates are associated with lower household incomes and poorer access to health care, higher poverty rates are also associated with poorer prospects for contraceptive security. This indicator is expressed as the percentage of the national population living below the nationally defined poverty line. For countries where WDI values were not available for this indicator, values for the poverty level were supplemented from the United Nations' online database (United Nations Statistics Division 2012).

Component III: Health and Social Environment—The health and social environment component comprises three indicators; this component is included because it is widely recognized that other factors in the broader health and social environment can affect prospects for contraceptive security at both the country and individual levels, as described below.

- **Governance**—A healthier political environment improves prospects for contraceptive security. An accountable, stable, effective, and transparent government is more likely to be committed to the health and well-being of its population and to use its resources appropriately for the public good. International donors are also more likely to provide financial and material support to such a government. The private sector is more likely to invest in creating new or expanding existing markets for contraceptives. This indicator is a composite measure that includes six dimensions of governance: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. It is derived from the World Bank's *The Worldwide Governance Indicators, 2011 Update* (Kaufmann, Kraay, and Mastruzzi 2012).

- **Women's education**—Women's educational attainment is one of the best predictors of contraceptive use. Women who are educated beyond primary school are more likely to use a contraceptive method. In addition, in countries where women's status is good, educated women are more likely to advocate for the protection of family planning programs. This indicator is expressed as the percentage of females enrolled in secondary school, which is defined as the ratio of the number of students enrolled in secondary school to the population in the applicable age group (gross enrollment ratio). Secondary school enrollment rates were obtained from the Population Reference Bureau's online DataFinder database 2012.

- **Adult HIV prevalence**—It is increasingly recognized that a higher burden of HIV in a population can erode prospects for contraceptive security. HIV and AIDS contribute to higher levels of poverty and the pandemic has put new, competing demands on health financing. This indicator is expressed as the percentage of adults aged 15–49[4] who were infected with the HIV virus at the end of 2010. Adult HIV prevalence rates were obtained from the UNAIDS *Report on the Global HIV/AIDS Epidemic 2011*.

Component IV: Access—The three access indicators measure aspects of availability and access to modern methods of contraception—the degree to which clients can choose and obtain their method of choice. Family planning and reproductive health programs should strive to offer a variety of methods to meet the needs of all clients.

- **Access to modern family planning methods**—Ready and easy access by clients to a wide range of contraceptive methods is associated with better prospects for contraceptive security. When family planning services are widely available, it is very difficult to reverse progress in access and availability of these services and supplies. This indicator from the FPE Survey measures the percentage of a country's population that has ready and easy access to male and female sterilization, pills, injectables, condoms, spermicides, and IUDs (Ross and Smith 2010).[5]

- **Public sector targeting**—Public sector family planning programs that offer heavily subsidized (and sometimes free) services and commodities are designed to meet the needs of the poor and near-poor segments of a population. This public sector funding is limited in virtually every country. The degree to which the poorest people benefit from these subsidized services, while wealthier clients who can afford to pay for services and commodities have and use other options, reflects on the long-term CS in a country. This indicator measures the proportion of a country's contraceptives distributed through public sector channels that go to poor and near-poor family planning clients. Poor and near-poor are clients who are in the lowest 40 percent of the population as defined by a standard of living index (SLI). Data from the Demographic and Health Surveys (DHS) and Reproductive Health Surveys (RHS) are used both to compute the SLI and the distribution of public sector family planning users across SLI categories.[6]

- **Spread of access to modern family planning methods**—Access to a wide range of family planning methods represents a choice for clients. Access to a range of methods can also mean that if one method becomes unavailable, other methods are available to clients in the interim. This concept of choice is key to contraceptive security, regardless of what methods clients choose (reflected in *Component V: Utilization*). This indicator is related to the access indicator above and it uses the same data from the FPE Survey. It measures whether clients have ready and easy access to a broad range of at least three contraceptive methods by selecting the highest-scored method, minus the third-highest scored method, divided by the sum of access scores for all methods (Ross and Smith 2010).

Component V: Utilization—This component comprises three indicators that measure clients' behavior in terms of contraceptive use within the country program context.

- **Method mix**—While the access indicators (see *Component IV: Access*) measure the extent to which consumers have ready and easy access to methods, this indicator measures the degree to which consumers use a range of methods. The broader the range of methods used, the better the prospects for contraceptive security, because it demonstrates that women have a choice and they are choosing from a range of methods. This indicator was measured as the difference in prevalence rates between the most prevalent modern method in a country and the third-most prevalent method, divided by the total modern method prevalence. A higher value indicates a higher concentration of use on a limited number of methods, which is interpreted as being not conducive to contraceptive security. This indicator was derived from the most recently available DHS or RHS dataset for each country.

- **Unmet need for family planning**—Unmet need is indicative of barriers to accessing and using family planning. The higher the percentage of women with unmet need for contraception, the poorer the prospects for contraceptive security, because unmet need represents clients who express a need to use family planning but cannot or do not. This indicator measures the percentage of women who express a desire to space or limit their next pregnancy, or who would have preferred to avoid or delay their current pregnancy, but are not using a contraceptive method[7]. This indicator was derived from the most recently available DHS or RHS dataset for each country; in several countries, unmet need data from other population-based surveys were used.

- **Contraceptive prevalence rate (CPR)**—This indicator is the most obvious outcome of contraceptive security—women actually using contraception. Higher contraceptive use is indicative of better access and availability of contraceptives for the population. Increased contraceptive use will also encourage the improved availability in both the public and private sectors through political pressures and market forces. This indicator measures the percentage of married women of reproductive age currently using a modern method of family planning. These data are from the Population Reference Bureau's *2012 World Population Data Sheet*; in several countries, CPR values from other population-based surveys were used.

[1] Staff from the Family Planning Logistics Management (FPLM) project (the predecessor project to DELIVER) and Ministry of Health counterparts scored the *Composite Indicators for Contraceptive Logistics Management* through a participatory focus group discussion held in each country in 1999–2000.

[2] Staff from the John Snow Inc./DELIVER (2006), or the USAID | DELIVER PROJECT (2009 and 2012), and Ministry of Health counterparts scored these indicators in 2006, 2009, and 2012 for public sector contraceptive logistics systems, based on expert opinion in each country.

[3] The FPE Survey is conducted periodically around the world by administering a questionnaire to expert respondents from each country. As the FPE is only updated about every five years, the most current scores completed in 2009 are used for the *CS Index 2012*.

[4] HIV prevalence among adults of reproductive age (15–49) is used as the indicator for the *CS Index* because this population is most likely to use contraceptives and avail themselves of services from family planning programs, making it the most relevant population for contraceptive security. They are also the most widely available data.

[5] This indicator uses the mean access score for these contraceptive methods.

[6] DHSs are generally conducted with oversight from a USAID centrally funded project. In some countries, RHSs, similar to a DHS but overseen by the Centers for Disease Control and Prevention, have been used where a recent DHS dataset was not available. In some instances, data from other population-based surveys were used.

[7] Unmet need for family planning, a calculated indicator, uses a combination of responses to various questions. It should be noted that the methodology used to calculate unmet need varies slightly between survey types. Additionally, the USAID-funded MEASURE/DHS Project altered their calculation of unmet need in 2011–12 (see www.measuredhs.com for more details). Unmet need values from a DHS included in the *CS Index 2012* use the revised calculation.

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The USAID Contraceptive Security Team works to advance and support planning and implementation for contraceptive security in countries. The team provides technical assistance to USAID missions, country partners, donors, and international partners. The team can be contacted c/o Mark Rilling or Alan Bornbusch, Commodities Security and Logistics Division, Office of Population and Reproductive Health, Bureau for Global Health, mrilling@usaid.gov or abornbusch@usaid.gov.

The Reproductive Health Supplies Coalition is a coalition of donors, multilateral organizations, private foundations, nongovernmental organizations, low- and middle-income country governments, and others dedicated to improving global health and the quality of life by ensuring access to high-quality reproductive health (RH) supplies. The coalition works to synthesize and share information, knowledge, and experience; improve coordination and harmonization of programs; and develop new tools and approaches to address the challenges of inadequate and unreliable financing for RH supplies, inefficiencies in supply systems; and inequities in access to RH supplies. More information can be found at www.rhsupplies.org.

The USAID | DELIVER PROJECT, Task Order 4, is funded by the U.S. Agency for International Development (USAID), Office of Population and Reproductive Health, Bureau for Global Health. The project improves essential health commodity supply chains by strengthening logistics management information systems, streamlining distribution systems, identifying financial resources for procurement and supply chain operation, and enhancing forecasting and procurement planning. The project encourages policymakers and donors to support logistics as a critical factor in the overall success of their health care mandates. For more information about commodity security and other project activities, please visit deliver.jsi.com.

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