



WHO / UNICEF

**Joint Monitoring Programme
for Water Supply and Sanitation**

Coverage Estimates

Improved Drinking Water

Updated in July 2008

Brazil

Survey

DHS		1986	
Water		Urban	Rural
Água Encanada (Cozinha)	(Pipe in house)	78.0	24.0
Água encanada (Quintal)	(Pipe in courtyard)	11.0	7.0
Poco	(Well)	5.0	22.0
Torneira pública	(Public tap)	2.0	1.0
Acude	(Dam)	0.0	7.0
Rio ou Riacho	(River or Stream)	0.0	9.0
Olho d'Água/Mina/Cacimba	(Spring/Purifier?)	2.0	24.0
Outro	(Other)	2.0	6.0
Total		100.0	100.0
Total Well/Spring		7.0	46.0
		↓	↓
50% of all wells estimated protected		3.5	23.0
(Excl. Well)		89.0	31.0
Total access to improved drinking water source (Incl. Well)		96.0	54.0
Access to improved drinking water sources		93%	54%
Estimated % House connections, after deduction of piped wells from Census 91 ratio		85%	9%

DHS		1996	
Water		Urban	Rural
Rede geral em casa	(Pipe in house)	81.0	20.7
Rede geral no terreno	(Pipe in courtyard)	3.3	4.2
Poco no terreno	(Well in courtyard)	6.0	40.2
Poco for a do terreno	(Well outside courtyard)	4.3	26.5
Engarrafada	(Bottled water)	4.1	0.1
Outro	(Other)	1.3	8.1
Total		100.0	99.8
Total Well		10.3	66.7
		↓	↓
50% of all wells estimated protected		5.2	33.4
Well, incl bottled)		88.4	25.0
Total access to improved drinking water source (Incl. Well, incl. bottled)		98.7	91.7
Access to improved drinking water sources		94%	58%
Estimated % House connections, after deduction of piped wells from Census 91 ratio		83%	9%

Pesquisa Nacional Sobre Demografia e Saúde, 1996. BEMFAM, IBGE, Ministério da Saúde, DHS, USAID, UNFPA, UNICEF. March 1997.

Pesquisa Nacional Sobre Saúde Materno-Infantil e Planejamento Familiar, Brasil - 1986. Sociedade Civil Bem-Estar Familiar no Brasil (BEMAF), Pesquisas Demográficas e de Saúde, Instituto Para Desenvolvimento de Recursos (IRD). DHS. December 1987.

* In absence of any information on proportion of wells that is protected it is assumed in this model that 50% of all wells are protected and therefore provide improved drinking water.

Urban and Rural Water - BRAZIL

			Estimate		
WHS			FORM-6/WHO		
2003			1999		
WATER	Urban	Rural	Water	Urban	Rural
Piped water through house connection or yard	94.2	39.5	Population served with household connection	112516	6242
Public standpipe	1.3	4.4	Population without household connection but with reasonable access to a public water point	8300	19176
Protected tube well or bore hole	1.6	31.9	Total population served	120816	25418
Protected dug well or protected spring	1.5	4.5	Total population unserved	3323	6323
Rainwater (into tank or cistern)	0.3	4.3			
Unprotected dug well or spring	0.5	7.5	Total population	124139	31741
Water taken directly from pond-water or stream	0.2	5.9			
Tanker-truck, vendor	0.5	2.1			
TOTAL	100.0	100.0			
Ratio of protected /all wells and springs	0.86	0.83			
Access to improved drinking water sources	99%	85%	Access to improved drinking water sources	97%	80%
% House connections	94%	39%	% House connections	91%	20%
Source: World Health Survey, WHO, 2003.			Global Water Supply and Sanitation Assessment 2000. Water Supply and Sanitation Sector Questionnaire - 1999. (Form6-sent to WHO).		

Censuses

Census		1991	
WATER	Urban	Rural	
General system with indoor plumbing	79.5	7.1	
General system with piped water without indoor plumbing	7.2	2.8	
Well or spring with indoor plumbing	3.9	22.6	
Other source with indoor plumbing	0.7	1.8	
Well or spring without indoor plumbing	3.9	35.1	
Other form without indoor plumbing	4.1	29.9	
Other/missing	0.7	0.8	
TOTAL	100.0	100.1	
Ratio of piped wells among all "piped in house"	0.05	0.71	
Estimated 50% of protected wells and springs	2.0	17.6	
Access to improved drinking water sources	93%	52%	
% House connections	87%	10%	

Census		2000			
Water	Urban	%	Rural	%	
Canalizada em pelo menos um comodo Piped into the house	114559080	83.6%	3873864	12.4%	
canalizada so na propriedade ou terreno Piped into the yard	7543719	5.5%	1706285	5.4%	
Well/Spring Canalizada em pelo menos um comodo Well/Spring piped into the house	6709484	4.9%	8231131	26.3%	
Well/Spring Canalizada so na propriedade ou terreno Well/Spring Piped into the yard	848717	0.6%	1467186	4.7%	
Well/Spring not piped	2841306	2.1%	7976659	25.4%	
Other	4513379	3.3%	8100083	25.8%	
Total	Total	137015685	100%	31355208	100%
Ratio of piped wells among all "piped in house"		0.06		0.64	
Ratio of wells among "not improved"		0.39		0.50	
Estimated 50% of protected wells and springs	1420653	1.0%	3988329.5	12.7%	
Access to improved drinking water sources		96%		61%	
% House connections		89%		18%	

Censo Demográfico 2000 - resultados de universo

Source: Brazil census 1991 (10% micro dataset from IPUMS).

Survey

PNAD - 1990		
Water		Urban
Rede geral	(Pipe in house) (Pipe in courtyard)	83.0 8.0
Poco ou nascente	(Well or	6.0
Outro	(Other)	3.0
Total		100.0
Total Well		6.0
50% of all wells estimated protected		3.0
Total access to improved drinking water source (Excl. Well)		91.0
Total access to improved drinking water source (Incl. Well)		97.0
Access to improved drinking water sources		94%
% House connections		86%

IBGE, CD-ROM, Brazil

PNAD - 1992		
Water		Urban
Rede geral	(Pipe in house) (Pipe in courtyard)	83.0 6.0
Poco ou nascente	(Well or	7.0
Outro	(Other)	4.0
Total		100.0
Total Well		7.0
50% of all wells estimated protected		3.5
Total access to improved drinking water source (Excl. Well)		89.0
Total access to improved drinking water source (Incl. Well)		96.0
Access to improved drinking water sources		93%
% House connections		85%

IBGE, CD-ROM, Brazil

PNAD - 1993		
Water		Urban
Rede geral	(Pipe in house) (Pipe in courtyard)	84.0 6.0
Poco ou nascente	(Well or	7.0
Outro	(Other)	3.0
Total		100.0
Total Well		7.0
50% of all wells estimated protected		3.5
Total access to improved drinking water source (Excl. Well)		90.0
Total access to improved drinking water source (Incl. Well)		97.0
Access to improved drinking water sources		94%
% House connections		86%

IBGE, CD-ROM, Brazil

PNAD - 1995		
Water		Urban
Rede geral	(Pipe in house) (Pipe in courtyard)	86.0 5.0
Poco ou nascente	(Well or	7.0
Outro	(Other)	3.0
Total		101.0
Total Well		7.0
50% of all wells estimated protected		3.5
Total access to improved drinking water source (Excl. Well)		91.0
Total access to improved drinking water source (Incl. Well)		98.0
Access to improved drinking water sources		95%
% House connections		86%

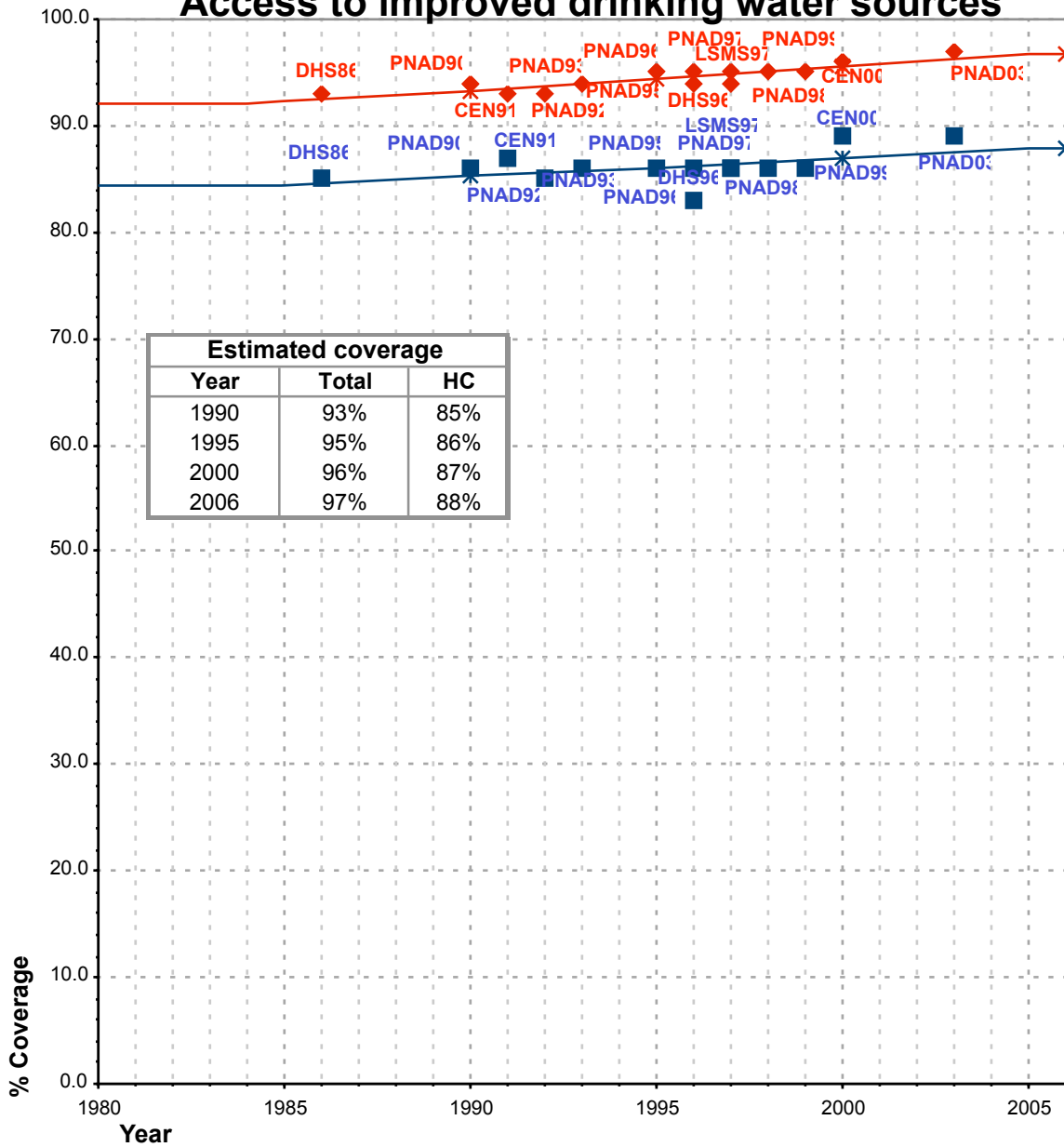
IBGE, CD-ROM, Brazil

Survey

PNAD		2003	
WATER	Urban	Rural	
Com canalização interna, Rede general	88.8	19.6	
Com canalização interna, outro	5.2	35.3	
Sem canalização interna, rede general	2.6	6.1	
Outro	3.4	39.0	
Sem declaração	0.0	0.0	
TOTAL	100.0	100.0	
Estimation of wells among "others", based on CEN00	1.3	19.5	
50% of all wells estimated	0.7	9.8	
Access to improved drinking water sources	97%	71%	
% House connections	89%	20%	

Brazil			DRINKING WATER							
			URBAN				RURAL			
			HC		Total		HC		Total	
Source	Code	Year	Used for estimates	Not used for estimates	Used for estimates	Not used for estimates	Used for estimates	Not used for estimates	Used for estimates	Not used for estimates
The International Drinking Water Supply and Sanitation Decade. Review of National Baseline Data (as at December 1980). WHO 1984	WHO80	1980		80.0		80.0				51.0
The International Drinking Water Supply and Sanitation Decade. Review of National Progress (as at December 1983). WHO 1986	WHO83	1983		83.0		86.0				53.0
The International Drinking Water Supply and Sanitation Decade. Review of Mid-Decade Progress (as at December 1985). WHO 1987.	WHO85	1985		86.0						
Sociedade Civil Bem-Estar Familiar no Brasil (BEMAF), Pesquisas Demograficas e de Saude, Instituto Para Desenvolvimento de Recursos (IRD). DHS. December 1987.	DHS86	1986	85.0		93.0		9.0		54.0	
The International Drinking Water Supply and Sanitation Decade. Review of National Progress (as at December 1988). WHO 1990	WHO88	1988		91.0		100.0				86.0
The International Drinking Water Supply and Sanitation Decade. End of decade review (as at December 1990). WHO 1992	WHO90	1990		85.0		95.0				61.0
IBGE, CD-ROM, Brazil	PNAD90	1990	86.0		94.0					
Water Supply and Sanitation Sector Monitoring Report - 1996. Sector status as of 31 December 1994. WHO/UNICEF. 1996.	JMP93	1991				85.0				31.0
	CEN91	1991	87.0		93.0		10.0		52.0	
IBGE, CD-ROM, Brazil	PNAD92	1992	85.0		93.0					
IBGE, CD-ROM, Brazil	PNAD93	1993	86.0		94.0					
IBGE, CD-ROM, Brazil	PNAD95	1995	86.0		95.0					
IBGE, CD-ROM, Brazil	PNAD96	1996	86.0		95.0					
Pesquisa Nacional Sobre Demografia e Saude, 1996. BEMFAM, IBGE, Ministerio da Saude, DHS, USAID, UNFPA, UNICEF. March 1997.	DHS96	1996	83.0		94.0		9.0		58.0	
IBGE, CD-ROM, Brazil	PNAD97	1997	86.0		94.0					
IBGE, CD-ROM, Brazil	PNAD98	1998	86.0		95.0		7.0		50.0	
Global Water Supply and Sanitation Assessment 2000. Water Supply and Sanitation Sector Questionnaire - 1999. (WS99-sent to WHO).	JMP99	1998		90.6		96.0		19.7		65.0
IBGE, CD-ROM, Brazil	PNAD99	1999	86.0		95.0					
Censo Demográfico 2000 - resultados de universo	CEN00	2000	89.0		96.0		18.0		61.0	
LIVING STANDARDS MEASUREMENT STUDY SURVEY, Brazil, 1997	LSMS97	1997	86.0		95.0		8.0			47.0
World Health Survey, WHO, 2003.	WHS03	2003		94.0		99.0		39.0		85.0
Pesquisa Nacional por Amostra de Domicilios, 2003	PNAD03	2003	89.0		97.0		20.0			71.0

Brazil - urban - Access to improved drinking water sources



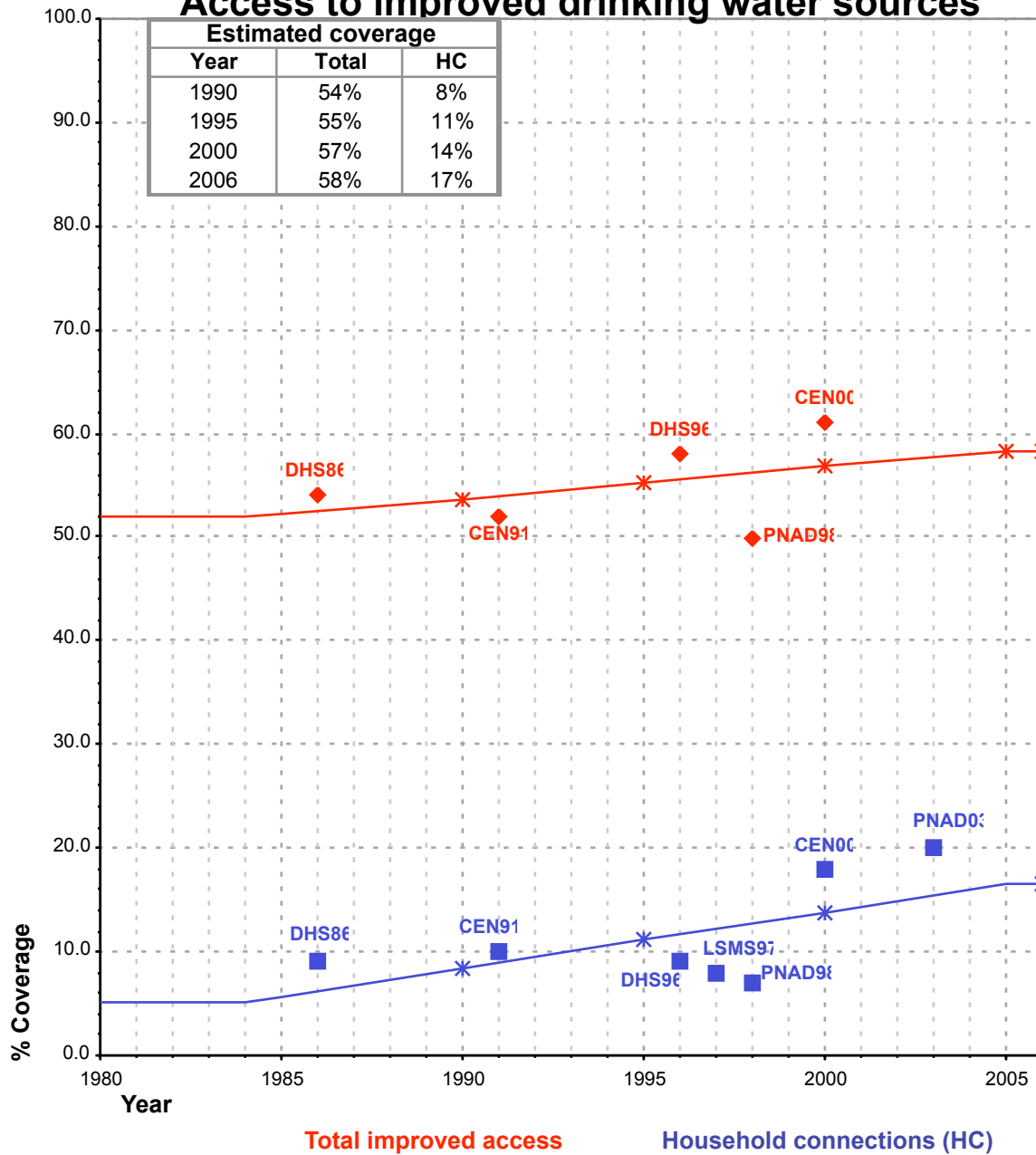
Total improved access

Household connections (HC)

◆ Used for estimates ■ Used for estimates *— Estimates *— Estimate

Total access :
WHS03 has not been used as it is too much of an outlier
Household connections :

Brazil - rural - Access to improved drinking water sources



Total access : LSMS97 has not been used because the category "Others" is too high (27%).
 PNAD03 has not been used because the category "Others" is too high (39%).

WHS03 has not been used as it is too much of an outlier

Household connections :