

**WHO / UNICEF**

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

Estimates for the use of

**Improved Drinking-Water Sources  
and Improved Sanitation Facilities**

Updated March 2010

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Access to drinking water sources		MICS00			Madagascar			Access to drinking water sources		DHS04			Madagascar		
Multiple Indicator Cluster Survey					Demographic and Household Survey										
Rapport Complet					2000					2004					
Original denomination	Classification	Urban	Rural	Total	Original denomination	Classification	Urban	Rural	Total						
	<b>Tap water</b>	62.7	6.1	18.6		<b>Tap water</b>	64.5	13.9	25.4						
	House connections	18.1	0.4	4.3	Robinet dans le logement/la cour/concession	House connections	17.8	2.7	6.1						
Robinet dans le logement	Piped water into dwelling	10.5	0.3	2.6		Piped water into dwelling									
Robinet dans la cour	Piped water to yard/plot	7.6	0.1	1.7		Piped water to yard/plot									
Borne fontaine/robinet public	Public tap, standpipe	44.6	5.7	14.3	Fontaine public	Public tap, standpipe	46.7	11.2	19.3						
	Other					Other									
	<b>Ground water</b>	25.8	54.0	47.7		<b>Ground water</b>	28.2	44.7	40.9						
	Protected ground water	6.1	5.7	5.8		Protected ground water	9.3	9.4	9.3						
	Unprotected ground water	10.4	16.8	15.3		Unprotected ground water	9.9	13.5	12.7						
	Protected wells or springs	6.1	5.7	5.8		Protected wells or springs	9.3	9.4	9.3						
	Private					Private									
	Public					Public	9.3	9.4	9.3						
	Other					Other									
	Unprotected wells or springs	10.4	16.8	15.3		Unprotected wells or springs	9.9	13.5	12.7						
	Private					Private									
	Public					Public	9.9	13.5	12.7						
	Other					Other									
	<b>All wells</b>	16.5	22.5	21.1		<b>All wells</b>	19.2	22.9	22.0						
	Private					Private									
	Public					Public	19.2	22.9	22.0						
	Other					Other									
Puits/forage a pompe	Tubewell, borehole	6.1	5.7	5.8		Tubewell, borehole									
	Private					Private									
	Public					Public									
	Other					Other									
	<b>Traditional wells</b>	10.4	16.8	15.3		<b>Traditional wells</b>	19.2	22.9	22.0						
	Private					Private									
	Public					Public	19.2	22.9	22.0						
	Other					Other									
	Protected well					Protected well	9.3	9.4	9.3						
	Private					Private									
	Public					Public	9.3	9.4	9.3						
	Other					Other									
Puits non protégé	Unprotected well	10.4	16.8	15.3		Unprotected well	9.9	13.5	12.7						
	Private					Private									
	Public					Public	9.9	13.5	12.7						
	Other					Other									
Source	<b>All springs</b>	9.3	31.5	26.6	Source	<b>All springs</b>	9.0	21.8	18.9						
	Private					Private									
	Public					Public									
	Other					Other									
	Protected spring					Protected spring									
	Private					Private									
	Public					Public									
	Other					Other									
	Unprotected spring					Unprotected spring									
	Private					Private									
	Public					Public									
	Other					Other									
Eau de pluie	<b>Rainwater</b>	0.0	0.3	0.3	Eau de pluie	<b>Rainwater</b>	0.0	0.1	0.1						
	Covered cistern/tank	0.0	0.3	0.3		Covered cistern/tank	0.0	0.1	0.1						
	Uncovered cistern/tank					Uncovered cistern/tank									
	<b>Bottled water</b>	0.0	0.0	0.0		<b>Bottled water</b>									
	with other improved					with other improved									
Eau en bouteille	without other improved	0.0	0.0	0.0		without other improved									
Lac/riviere/ruisseau	<b>Surface water</b>	9.6	38.4	32.0	Fleuve rivier	<b>Surface water</b>	7.0	41.4	33.5						
	River				Mare/Lac	River	6.7	38.6	31.3						
	Lake				Barrage	Lake	0.3	2.7	2.2						
	Dam					Dam	0.0	0.1	0.0						
	Pond					Pond									
	Stream					Stream									
	Irrigation channel					Irrigation channel									
	Other					Other									
	<b>Other improved sources</b>					<b>Other improved sources</b>									
	Other					Other									
	Other					Other									
	<b>Other non-improved</b>	1.9	1.3	1.4		<b>Other non-improved</b>	0.0	0.0	0.2						
	Cart with small tank/drum					Cart with small tank/drum									
Camion citerne	Tanker truck provided	0.4	0.2	0.2	Camion citerne	Tanker truck provided	0.0	0.0	0.2						
Autre	Other	1.5	1.1	1.2		Other									
	Other					Other									
	<b>DK/missing</b>					<b>DK/missing</b>									
	<b>Total</b>	100.0	100.1	100.0		<b>Total</b>	99.7	100.1	100.1						
<b>Calculations</b>	Proportion springs of springs + surface water	49.2%	45.1%		<b>Calculations</b>	Proportion springs of springs + surface water	56.3%	34.5%							
<b>Estimations</b>	Springs considered improved based on EP04	2.2	7.6		<b>Estimations</b>	Springs considered improved based on EP04	0.1	0.0	9.5						
<b>Access to improved drinking water sources :</b>		<b>71%</b>	<b>20%</b>	<b>25%</b>	<b>Access to improved drinking water sources :</b>		<b>74%</b>	<b>23%</b>	<b>44%</b>						
<b>Access to house connections :</b>		<b>18%</b>	<b>0%</b>	<b>4%</b>	<b>Access to house connections :</b>		<b>18%</b>	<b>3%</b>	<b>6%</b>						
Used for the estimates:		Yes	Yes		Used for the estimates:		Yes	Yes							
<b>Ratios</b>	HC / Tap water	29%	7%		<b>Ratios</b>	HC / Tap water	28%	19%							
	Public tap / Tap water	71%	93%			Public tap / Tap water	72%	81%							
	Tubewell + protected well / All wells					Tubewell + protected well / All wells									
	Protected wells / Traditional wells					Protected wells / Traditional wells	48%	41%							
	Tubewell / All wells	37%	25%			Tubewell / All wells									
	Protected springs / All springs					Protected springs / All springs									
Protect. well & spring / well & spring	37%	25%		Protect. well & spring / well & spring	48%	41%									
Number of people covered by the survey:					Number of people covered by the survey:										
Number of households covered by the survey:					Number of households covered by the survey:										
Total population:					Total population:										
<b>Comments</b>					<b>Comments</b>										

Access to drinking water sources		EP99			Madagascar			Access to drinking water sources		EM01			Madagascar						
Enquête Prioritaire					1999					Enquête auprès des Ménages					2001				
Ministère des Finances et de l'Economie Institut National de la Statistique										Ministère des Finances et de l'Economie Institut National de la Statistique									
Original denomination	Classification	Urban	Rural	Total	Original denomination	Classification	Urban	Rural	Total										
	<b>Tap water</b>	66.5	9.2			<b>Tap water</b>	59.2	12.2											
	House connections	22.9	1.8			House connections	16.5	4.7											
Plomberie, robinet intérieur	Piped water into dwelling	14.6	0.8		Plomberie, robinet intérieur	Piped water into dwelling	12.2	4.0											
Robinet privé externe	Piped water to yard/plot	8.3	1.0		Robinet privé externe	Piped water to yard/plot	4.3	0.7											
Robinet public	Public tap, standpipe	43.6	7.4		Robinet public	Public tap, standpipe	40.1	7.3											
	Other				Robinet du voisin	Other	2.6	0.2											
	<b>Ground water</b>	16.1	17.5			<b>Ground water</b>	19.1	23.2											
	Protected ground water	3.2	0.8			Protected ground water	3.6	2.7											
	Unprotected ground water					Unprotected ground water													
	Protected wells or springs	3.2	0.8			Protected wells or springs	3.6	2.7											
	Private					Private	3.6	2.7											
	Public					Public													
	Other					Other													
	Unprotected wells or springs					Unprotected wells or springs													
	Private					Private													
	Public					Public													
	Other					Other													
	<b>All wells</b>	16.1	17.5			<b>All wells</b>	19.1	23.2											
	Private					Private	3.6	2.7											
	Public					Public	5.2	4.5											
	Other	12.9	16.7			Other	10.3	16.0											
	Tubewell, borehole					Tubewell, borehole													
	Private					Private													
	Public					Public													
	Other					Other													
	<b>Traditional wells</b>	16.1	17.5			<b>Traditional wells</b>	19.1	23.2											
	Private					Private	3.6	2.7											
	Public					Public	5.2	4.5											
	Other	12.9	16.7		Puits sans pompe (Artésiens)	Other	10.3	16.0											
Puits sans pompe (Artésiens)	Protected well	3.2	0.8		Puits avec pompe	Protected well	3.6	2.7											
Puits avec pompe	Private					Private	3.6	2.7											
	Public					Public													
	Other					Other													
	Unprotected well					Unprotected well													
	Private					Private													
	Public					Public													
	Other					Other													
	<b>All springs</b>					<b>All springs</b>													
	Private					Private													
	Public					Public													
	Other					Other													
	Protected spring					Protected spring													
	Private					Private													
	Public					Public													
	Other					Other													
	Unprotected spring					Unprotected spring													
	Private					Private													
	Public					Public													
	Other					Other													
	<b>Rainwater</b>	0.4	0.1			<b>Rainwater</b>	2.1	6.0											
Eau de pluie	Covered cistern/tank	0.4	0.1		Eau de pluie	Covered cistern/tank	2.1	6.0											
	Uncovered cistern/tank					Uncovered cistern/tank													
	<b>Bottled water</b>					<b>Bottled water</b>	0.3	0.1											
	with other improved					with other improved													
	without other improved				Eau en bouteille	without other improved	0.3	0.1											
Rivière, lac, source, mare	<b>Surface water</b>	14.3	69.8		Rivière, lac, source, mare	<b>Surface water</b>	17.2	56.8											
	River					River													
	Lake					Lake													
	Dam					Dam													
	Pond					Pond													
	Stream					Stream													
	Irrigation channel					Irrigation channel													
	Other					Other													
	<b>Other improved sources</b>					<b>Other improved sources</b>													
	Other					Other													
	Other					Other													
	<b>Other non-improved</b>	2.7	3.5			<b>Other non-improved</b>	2.2	1.6											
Vendeur d'eau	Cart with small tank/drum	1.5	1.1		Vendeur d'eau	Cart with small tank/drum	1.6	1.4											
Service de camion-citerne	Tanker truck provided	0.6	0.8		Service de camion-citerne	Tanker truck provided	0.0	0.0											
Magasin	Other	0.2	1.3			Other													
Autres	Other	0.4	0.3		Autres	Other	0.6	0.2											
	<b>DK/missing</b>					<b>DK/missing</b>													
	<b>Total</b>	100.0	100.1			<b>Total</b>	100.1	99.9											
<b>Calculations</b>	Estimates springs of surface water based on MICS00	7.0	31.5		<b>Calculations</b>	Estimates springs of surface water based on MICS00	8.5	25.6											
<b>Estimations</b>	Estimation of protected well as from MICS00	4.8	4.2		<b>Estimations</b>	Estimation of protected well based on MICS00	5.7	5.2											
	Springs considered improved based on EP04	1.7	3.5			Springs considered improved based on EP04	2.0	2.9											
<b>Access to improved drinking water sources :</b>		<b>77%</b>	<b>18%</b>		<b>Access to improved drinking water sources :</b>		<b>73%</b>	<b>29%</b>											
<b>Access to house connections :</b>		<b>23%</b>	<b>2%</b>		<b>Access to house connections :</b>		<b>17%</b>	<b>5%</b>											
Used for the estimates:		<b>YES</b>	<b>No</b>		Used for the estimates:		<b>YES</b>	<b>Yes</b>											
Used for the estimates:		<b>YES</b>	<b>No</b>		Used for the estimates:		<b>YES</b>	<b>YES</b>											
<b>Ratios</b>	HC / Tap water	34%	20%		<b>Ratios</b>	HC / Tap water	28%	39%											
	Public tap / Tap water	66%	80%			Public tap / Tap water	68%	60%											
	Tubewell + protected well / All wells					Tubewell + protected well / All wells													
	Protected wells / Traditional wells	20%	5%			Protected wells / Traditional wells	19%	12%											
	Tubewell / All wells					Tubewell / All wells													
	Protected springs / All springs					Protected springs / All springs													
Protect. well & spring / well & spring				Protect. well & spring / well & spring															
Number of people covered by the survey:					Number of people covered by the survey:														
Number of households covered by the survey:		2880	2240		Number of households covered by the survey:		3041	2040											
Total population:					Total population:														
<b>Comments</b>	Inversion of urban and rural has been corrected. Not used for rural as there is an unrealistically high use of surface water compared to any other surveys on file				<b>Comments</b>														

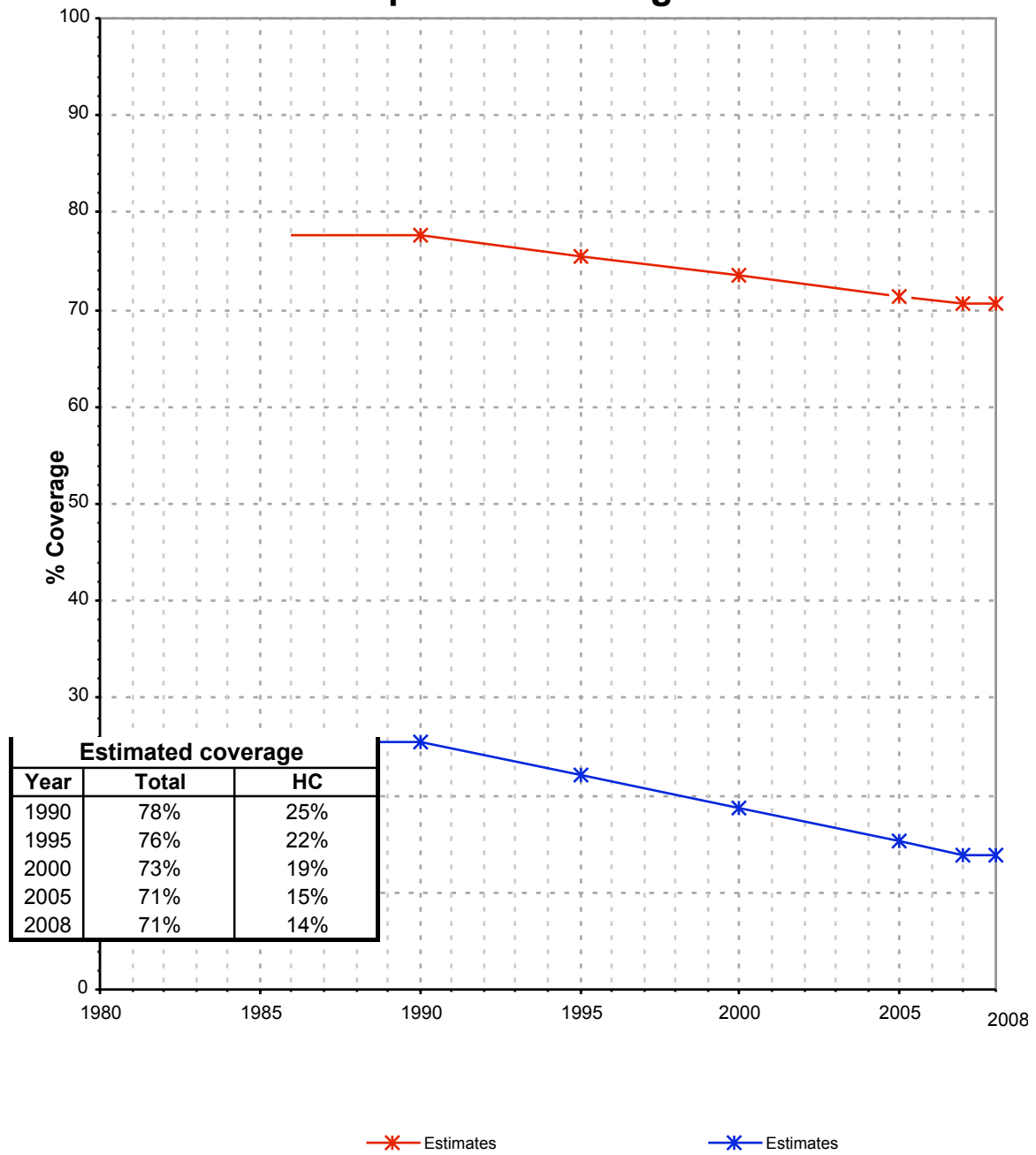
Access to drinking water sources		EP97			Madagascar			Access to drinking water sources		EP01			Madagascar						
Enquête Prioritaire					1997					Enquête Prioritaire					2001				
Ministère des Finances et de l'Economie Institut National de la Statistique										Ministère des Finances et de l'Economie Institut National de la Statistique									
Original denomination	Classification	Urban	Rural	Total	Original denomination	Classification	Urban	Rural	Total	Original denomination	Classification	Urban	Rural	Total					
	<b>Tap water</b>	64.4	6.3	20.3		<b>Tap water</b>	58.6	10.0	21.9		<b>Tap water</b>	58.6	10.0	21.9					
	House connections	20.3	0.9	5.3		House connections	15.8	2.4	5.7		House connections	15.8	2.4	5.7					
Plomberie, robinet intérieur	Piped water into dwelling	16.1	0.6	4.1	Plomberie, robinet intérieur	Piped water into dwelling	11.4	1.7	4.1	Plomberie, robinet intérieur	Piped water into dwelling	11.4	1.7	4.1					
Robinet privé externe	Piped water to yard/plot	4.2	0.3	1.2	Robinet privé externe	Piped water to yard/plot	4.4	0.7	1.6	Robinet privé externe	Piped water to yard/plot	4.4	0.7	1.6					
Robinet public	Public tap, standpipe	43.8	5.1	13.8	Robinet public	Public tap, standpipe	40.1	7.4	15.4	Robinet public	Public tap, standpipe	40.1	7.4	15.4					
Menage du voisin	Other	0.3	0.3	1.2	Robinet du voisin	Other	2.7	0.2	0.8	Robinet du voisin	Other	2.7	0.2	0.8					
	<b>Ground water</b>	18.6	17.9	18.3		<b>Ground water</b>	19.4	24.1	22.9		<b>Ground water</b>	19.4	24.1	22.9					
	Protected ground water	4.1	0.4	1.5		Protected ground water	3.5	2.8	3.0		Protected ground water	3.5	2.8	3.0					
	Unprotected ground water					Unprotected ground water					Unprotected ground water								
	Protected wells or springs	4.1	0.4	1.5		Protected wells or springs	3.5	2.8	3.0		Protected wells or springs	3.5	2.8	3.0					
	Private	4.1	0.4	1.5		Private	3.5	2.8	3.0		Private	3.5	2.8	3.0					
	Public					Public					Public								
	Other					Other					Other								
	Unprotected wells or springs					Unprotected wells or springs					Unprotected wells or springs								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	<b>All wells</b>	18.6	17.9	18.3		<b>All wells</b>	19.4	24.1	22.9		<b>All wells</b>	19.4	24.1	22.9					
	Private	4.1	0.4	1.5		Private	3.5	2.8	3.0		Private	3.5	2.8	3.0					
	Public					Public	5.4	4.7	4.8		Public	5.4	4.7	4.8					
	Other	14.5	17.5	16.8		Other	10.5	16.6	15.1		Other	10.5	16.6	15.1					
	Tubewell, borehole					Tubewell, borehole					Tubewell, borehole								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	<b>Traditional wells</b>	18.6	17.9	18.3		<b>Traditional wells</b>	19.4	24.1	22.9		<b>Traditional wells</b>	19.4	24.1	22.9					
	Private	4.1	0.4	1.5		Private	3.5	2.8	3.0		Private	3.5	2.8	3.0					
	Public					Public	5.4	4.7	4.8		Public	5.4	4.7	4.8					
	Other	14.5	17.5	16.8		Other	10.5	16.6	15.1		Other	10.5	16.6	15.1					
	Puits sans pompe					Puits sans pompe					Puits sans pompe								
	Protected well	4.1	0.4	1.5		Protected well	3.5	2.8	3.0		Protected well	3.5	2.8	3.0					
	Private	4.1	0.4	1.5		Private	3.5	2.8	3.0		Private	3.5	2.8	3.0					
	Public					Public					Public								
	Other					Other					Other								
	Unprotected well					Unprotected well					Unprotected well								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	<b>All springs</b>					<b>All springs</b>					<b>All springs</b>								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	Protected spring					Protected spring					Protected spring								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	Unprotected spring					Unprotected spring					Unprotected spring								
	Private					Private					Private								
	Public					Public					Public								
	Other					Other					Other								
	<b>Rainwater</b>	0.0	0.2	0.2		<b>Rainwater</b>	2.1	6.2	5.2		<b>Rainwater</b>	2.1	6.2	5.2					
Eau de pluie	Covered cistern/tank	0.0	0.2	0.2	Eau de pluie	Covered cistern/tank	2.1	6.2	5.2	Eau de pluie	Covered cistern/tank	2.1	6.2	5.2					
	Uncovered cistern/tank					Uncovered cistern/tank					Uncovered cistern/tank								
	<b>Bottled water</b>					<b>Bottled water</b>	0.2	0.1	0.2		<b>Bottled water</b>	0.2	0.1	0.2					
	with other improved					with other improved					with other improved								
	without other improved					without other improved	0.2	0.1	0.2		without other improved	0.2	0.1	0.2					
Rivière, lac, source, mare	<b>Surface water</b>	15.7	74.0	59.7	Rivière, lac, source, mare	<b>Surface water</b>	17.7	58.2	48.2	Rivière, lac, source, mare	<b>Surface water</b>	17.7	58.2	48.2					
	River					River					River								
	Lake					Lake					Lake								
	Dam					Dam					Dam								
	Pond					Pond					Pond								
	Stream					Stream					Stream								
	Irrigation channel					Irrigation channel					Irrigation channel								
	Other					Other					Other								
	<b>Other improved sources</b>					<b>Other improved sources</b>					<b>Other improved sources</b>								
	Other					Other					Other								
	Other					Other					Other								
	<b>Other non-improved</b>	1.3	1.6	1.5		<b>Other non-improved</b>	2.0	1.4	1.6		<b>Other non-improved</b>	2.0	1.4	1.6					
Vendeur d'eau	Cart with small tank/drum	0.6	0.7	0.7	Vendeur d'eau	Cart with small tank/drum	1.6	1.2	1.3	Vendeur d'eau	Cart with small tank/drum	1.6	1.2	1.3					
Service de camion-citerne	Tanker truck provided	0.0	0.0	0.0	Service de camion-citerne	Tanker truck provided	0.0	0.0	0.0	Service de camion-citerne	Tanker truck provided	0.0	0.0	0.0					
	Other					Other					Other								
Autres	Other	0.7	0.9	0.8	Autres	Other	0.4	0.2	0.3	Autres	Other	0.4	0.2	0.3					
	<b>DK/missing</b>					<b>DK/missing</b>					<b>DK/missing</b>								
	<b>Total</b>	100.0	100.0	100.0		<b>Total</b>	100.0	100.0	100.0		<b>Total</b>	100.0	100.0	100.0					
Calculations	Estimates springs of surface water based on DHS97	6.3	27.6		Calculations	Estimates springs of surface water based on MICS00	8.7	26.2											
Estimations	Estimation of protected well based on MICS00	5.4	6.5		Estimations	Estimation of protected well based on MICS00	5.9	5.4											
	Springs considered improved based on EP04	1.5	3.1			Springs considered improved based on EP04	2.1	2.9											
<b>Access to improved drinking water sources :</b>		<b>75%</b>	<b>16%</b>	<b>22%</b>	<b>Access to improved drinking water sources :</b>		<b>72%</b>	<b>27%</b>	<b>30%</b>										
<b>Access to house connections :</b>		<b>20%</b>	<b>1%</b>	<b>5%</b>	<b>Access to house connections :</b>		<b>16%</b>	<b>2%</b>	<b>6%</b>										
Used for the estimates:		Yes	Yes		Used for the estimates:		Yes	Yes											
Used for the estimates:		Yes	Yes		Used for the estimates:		Yes	Yes											
Ratios	HC / Tap water	32%	14%		Ratios	HC / Tap water	27%	24%											
	Public tap / Tap water	68%	81%			Public tap / Tap water	68%	74%											
	Tubewell + protected well / All wells					Tubewell + protected well / All wells													
	Protected wells / Traditional wells	22%	2%			Protected wells / Traditional wells	18%	12%											
	Tubewell / All wells					Tubewell / All wells													
	Protected springs / All springs					Protected springs / All springs													
	Protect. well & spring / well & spring					Protect. well & spring / well & spring													
Number of people covered by the survey:					Number of people covered by the survey:														
Number of households covered by the survey:					Number of households covered by the survey:														
Total population:					Total population:														
Comments					Comments														



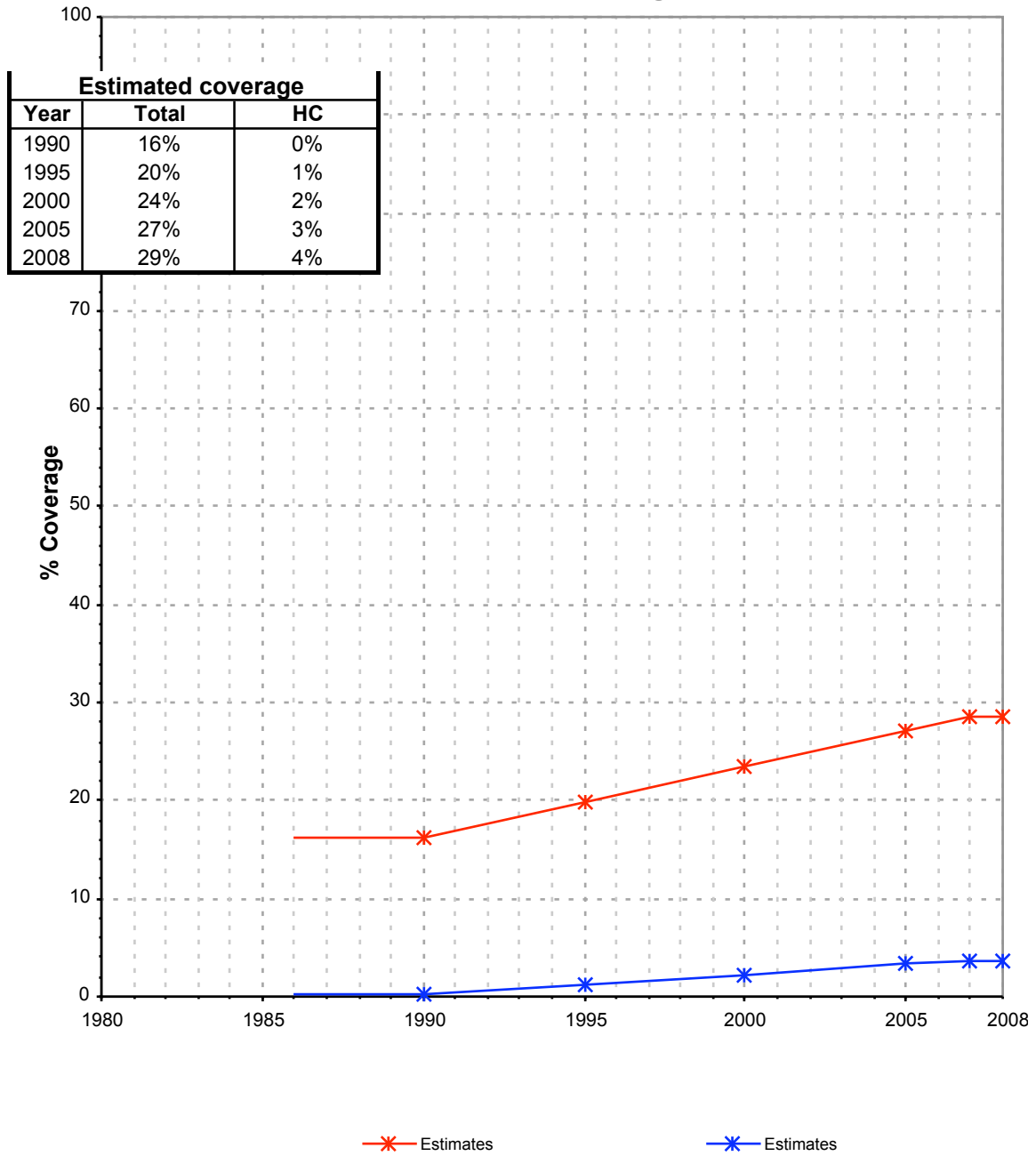


Madagascar			DRINKING WATER							
			URBAN				RURAL			
			House connection		Total		House connection		Total	
Source	Code	Year	Used	Not used	Used	Not used	Used	Not used	Used	Not used
Demographic and Household Survey	DHS92	1992	29.7		83.6		0.7		17.8	
National Census	CEN93	1993	16.1		65.9		0.6		19.7	
Multiple Indicator Cluster Survey	MICS95	1995	25.0		84.8		1.8		24.1	
Demographic and Household Survey	DHS97	1997	17.7		65.8		2.2		17.1	
Multiple Indicator Cluster Survey	MICS00	2000	18.1		71.0		0.4		19.7	
Demographic and Household Survey	DHS04	2004	17.8		73.9		2.7		23.4	
Enquête Prioritaire	EP99	1999	22.9		76.6			1.8		17.8
Enquête auprès des Ménages	EM01	2001	16.5		72.7		4.7		29.0	
Enquête Prioritaire	EP97	1997	20.3		75.4		0.9		16.5	
Enquête Prioritaire	EP01	2001	15.8		72.2		2.4		27.3	
Enquête Prioritaire	EP02	2002	18.8		76.3		3.8		28.7	
Enquête Prioritaire	EP04	2004	16.2		71.5		1.3		21.6	
Enquête Prioritaire	EP05	2005	13.9		69.7		4.2		31.2	

# Madagascar - urban - Use of improved drinking water sources



# Madagascar - rural - Use of improved drinking water sources



# Drinking Water

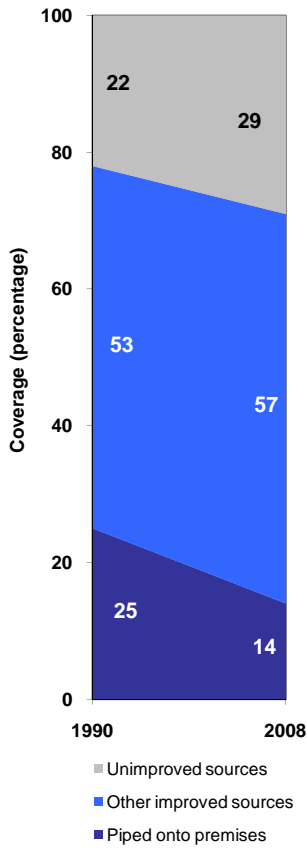
Madagascar	Drinking water coverage estimates					
	Urban (%)		Rural (%)		Total (%)	
	1990	2008	1990	2008	1990	2008
Piped into premises	25	14	0	4	6	7
Other improved source	53	57	16	25	25	34
Unimproved source	22	29	84	71	69	59

Source: WHO/UNICEF JMP, 2010

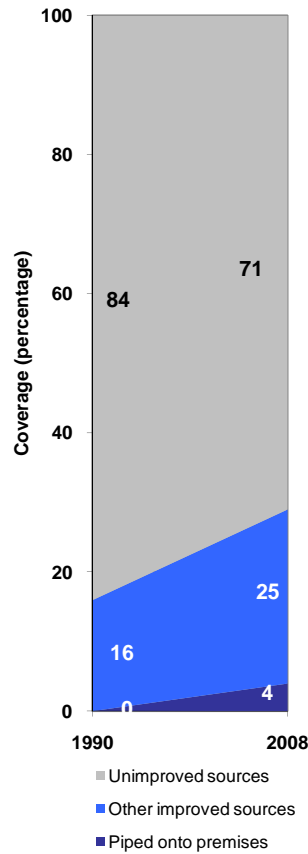
Madagascar	Urban		Rural		Total	
	1990	2008	1990	2008	1990	2008
Population (x1000)	2 657	5 631	8616	13480	11273	19111

Source: UN / Population Division, 2008

Urban drinking water trends



Rural drinking water trends



Total drinking water trends

