



GUVERNUL
REPUBLICII MOLDOVA



United Nations
MOLDOVA

Improved measurement and monitoring of MDGs in Moldova: *targets, indicators, definitions, data sources, progress analysis*

Results of technical support missions
by specialized statistician experts



MDG 7:
**Ensure
environmental
sustainability**

List of acronyms and abbreviations

JMP	WHO/UNICEF Joint Monitoring Programme
MDG	Millennium Development Goals
MCRD	Ministry of Construction and Regional Development
MLGA	Ministry of Local Government Administration
MoH	Ministry of Health
MoE	Ministry of Environment
MLPA	Ministry of Local Public Administration
NBS	National Bureau of Statistics
NCPCPM	National Scientific-Practical Centre of Preventive Medicine
NCPH	National Center for Public Health
NHRAP	National Human Rights Action Plan
SND	National Development Strategy
TIC	Informational technologies and communications
UN	United Nations
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Introduction

National monitoring is the backbone of global monitoring. Therefore national monitoring needs to be strengthened to improve the national estimates appearing in the global MDG monitoring. However often there's a disconnect between the two and due to lack of coordination between the players in national monitoring, it suffers from having good quality data, and hence weak monitoring approaches. Improvement of national monitoring therefore entails improving both the way it is done and bring international standards so that there is a better conformity with the latter. With this end in view, UNDP Moldova, within its Joint Project on Strengthening the National Statistical System undertook a thorough review of the national MDG monitoring of water and sanitation to have an insight into the pitfalls of this so that things could be improved in the future.

As custodians of MDG7c and the official mechanism within the UN system to monitor country progress on access to water and sanitation and since 2000 the official authority to monitor global progress towards the MDG target on water and sanitation (halve the 1990 proportion of people without sustainable access to safe water and basic sanitation), WHO/UNICEF Joint Monitoring Programme was contacted to help do this exercise. Rifat Hossain of WHO, in charge of MDG indicators 7.8 and 7.9 undertook this review. This review was carried out during a mission to Chisinau where Mr Hossain met with the national stakeholders to assess the different aspects of national monitoring and the resulting statistics and which contributed to the production of the national MDG reports, 2005, 2007, 2009 and 2010.

As per the terms of reference for this work agreed between UNDP Moldova and the JMP personnel, the first part of the report is organized in the following sections:

- Analysis of background documents on MDG 7
- Technical consultations with national data producers
- Review the method and practice
- Review data sources and methods of assessing access to sanitation (sewerage and toilets)
- Methodological advice on definitions of access
- Recommendations for data on waste management services
- Complementary use of survey data to administrative sources

In the second part of the report there is a comparison between national and international MDG, specifically the their 2010 reports and finally provides some recommendations and suggests the way forward.

Analysis of background documents on MDG 7

Prior to the mission to Chisinau, national MDG reports from 2005, 2007, 2009 and 2010 served as background documents. These reports, covers all national MDG targets and indicators, were commissioned by UNDP and prepared by independent consultants. As requested by the United Nations Secretary-General, the United Nations Development Programme ensures within the UN system the coordination of efforts directed at achieving the Millennium Development Goals and creating development partnerships. Therefore like most countries UNDP Moldova has been coordinating MDG activities in the country. Since UNDP is not a technical agency it relies heavily on the national institutions in charge of technical monitoring to give proper input to MDG reports. In the case of Moldova, State Chancellery (the public authority that has the mission to assure the organization of the Government's activity related to the internal and foreign policy of the state, it is managed by the Secretary General of the Government (member of Government).

The Chancellery is also responsible for establishing the general framework for identification of the Government's priority activities, provides methodological and organizational support for the planning, elaboration and implementation of public policies by Government's authorities, monitors the implementation of the Government's programmes, provides analytical and information materials, etc. as well as in charge of national MDG monitoring. Therefore Moldovan MDG reports have been commissioned by State Chancellery and produced by national consultants with the support of UN, including UNDP (<http://undp.md/mdg/moldova.shtml>).

The principal observations from this review are: a) safe water and improved water are interchangeably used and without proper explanation of either of them, b) sanitation is not referred in the traditional sense and is equated with salubrizare¹, only a small fraction of sanitation as a whole. Additionally in general definitions of access, i.e. which sources of water or sanitation facilities are counted towards access calculation are generally missing from these reports. The following table summarizes the findings from these MDG reports.

¹ collection and transportation of domestic solid and liquid waste and cleaning of streets

Table: summary of the analysis of national MDG reports (2005, 2007, 2009, 2010)

Year	Target	Indicator	Analysis made in MDG reports refers to	Deficiencies of analysis/ assessment made in MDG reports	Used indicators and disaggregation	Data source	Baseline (% 2002)	Target (% 2010)	Target (% 2015)
2005	Halving proportion of people without permanent access to safe water by 2015 (Romanian: Halving proportion of people without sustainable/durable access to safe water sources by 2015 – different than in Eng.)	Proportion of population with permanent access to safe water (Rom: Proportion of population with sustainable/durable access to safe water sources – different than in Eng.)	a. Population consuming water not fulfilling sanitary norms, inc. (i) centralized systems of water supply and (ii) wells and springs b. Causes of high consumption of unsafe water c. Un-hygienic and poor conditioned rural establishments' aqueducts and causes; d. Wells and spring with safe water e. Functioning of purification installations f. State Water Supply and Sewage Programme	a. not clear 50% of what population (present or stable, total or excepting Transnistria, details on the denominator for the indicator would be required); e. purification installations in rural area do not function because they do not exist, or they exist and do not function.	<ul style="list-style-type: none"> • % of population who consumes water • % of population with centralized systems of water supply, rural and urban • % of aqueducts by compliance with hygienic conditions and operational status, rural • % of wells and spring with safe and unsafe water • No of localities and population covered by the state programme (f), urban, rural 	Agency for Constructions and Territory Development	38..5	57.00	68.5
	Halving the number of people without access to improved sanitation by 2015 (Rom: Halving the number of people without access to improved systems of sanitation and "salubrizare" by 2015 – different than in Eng.)	Proportion of people with access to improved sanitation (Rom: Proportion of people with access to improved systems of sanitation and "salubrizare" – different than in Eng.)	a. Collection, storage and use of domestic wastes, but also waste resulting from industrial activity; b. Non existence of waste collection in rural area and small towns; c. Danger of pesticides	General: the analysis does not correspond to the name of target or indicators, sanitation not being addressed at all . Instead sanitation has been referred to domestic waste collection and transportation (salubrizare notion) , the toxic waste is analyzed too	<ul style="list-style-type: none"> • Tones of accumulated waste, by domestic and industrial waste; • Surface of platforms for waste accumulation, urban only; • Quantity of pesticides, by warehouses, by conditions of warehouse 	Agency for Constructions and Territory Development	Not mentioned in the report	Not mentioned	Not mentioned in the report, but deducted as 90%
2007	Increase the share of people with permanent access to safe water sources from 38.5% in 2002 to 59% in 2010 and 65% in 2015 (Rom: "...with access to safe water sources... " - "permanent" is missing in Rom.)	Proportion of population with permanent access to safe water sources (Rom: "... access to safe water sources... " – "permanent" is missing in Rom.) In the text different names of indicators are used in both Rom and Eng versions. Indicators used in the text differ from the name of targets, in both Rom and Eng versions.	a. available data sources (Agency for Constructions and Territory Development, NBS, Center for Preventive Medicine, WB); b. switch to another data source (from ACTD to NCPM) c. adjustment of target because of errors in initial calculations (overestimation undertaken in the 1 st report) d. network of units monitoring the water quality described	The analysis of progress per se is missing, and substituted instead with explanation on changing of data source. Reason from data source change was: NCPH is the only institution collecting data on water quality. Also, it is mentioned that even this source of data is not complete making the monitoring of water from public water supply systems only. If this change of source took place, it means that they meant/wanted to monitor safe water, not improved. But they continue to talk in the same report about 'improved' source of water. In the name of indicator is used 'safe water', in the chart 'improved' sources of water. So, changing the source the essence was not changed. Still no explanation for 'safe' and	<ul style="list-style-type: none"> • Share of population with access to improved/safe (different words used in different places) water sources, no disaggregation 	Switch from Agency for Constructions and Territory Development to Center for Preventive Medicine	38.5	59.0	65

² *salubrizare* - collection and transportation of domestic solid and liquid waste, cleaning of streets

	Halve the number of people without access to improved sewage and sanitation systems (Rom: "...without access to improved sewage... " – "sanitation" is missing. "Canalizare" becomes equal to "sewage & sanitation")	Proportion of people with permanent access to improved sewage systems (Rom: Proportion of people with access to improved sewage....." – "permanent" and "system" are missed)	a. NBS data provide data on access, but not quality of sewage. b. 'optimist scenario' (people with access to water supply are considered as having 'adequate sewage system') explained. => 2015 targets for this and previous indicator – equal.	'improved' source of water is given. <ul style="list-style-type: none"> Separate targets fixed for this indicator. 'Improved access' in Eng. and 'durable/ sustainable access' in Rom. In Rom text 'improved access', in chart just 'access' <p>Although the 2007 report had the specific scope (see footnote 2) it still raises a lot of confusions from the perspective of names on indicators and their meaning, as well as sources</p>	<ul style="list-style-type: none"> Share of population with access to improved sewage, no disaggregation 	NBS, on the basis of Household Budget Survey (HBS)	31.3	50.3	65
		Proportion of people with access to sanitation systems (Rom: Proportion of people with access to "salubrizare"... ³)	a. correction of error in calculation of intermediate and final target (overestimation - undertaken in the 1 st report) b. the analysis pers se is limited to mentioning of the plans of Chisinau municipality and Gov. to build waste processing plants and set 'salubrizare' enterprises	<ul style="list-style-type: none"> Separate targets fixed for this indicator' sustainable access to improved systems of salubrizare/sanitation' is also used in Rom. and Eng. 'salubrizare' translated as 'sanitation' in Eng.text which is wrong <p>Although the 2007 report had the specific scope (see footnote 2) it still raises a lot of confusions from the perspective of names on indicators and their meaning, as well as sources</p>	<ul style="list-style-type: none"> Share of population with access to 'salubrizare', no disaggregation 	Agency for Constructions and Territory Development	41.7	51.3	71.8

2009	Increase the share of people with permanent access to safe water sources from 38.5% in 2002 to 59% in 2010 and 65% in 2015	Proportion of population with access to improved water sources (Rom: the same as in English)	a. trend analysis referring to big progress in 2008, likely non-achievability of national MDG target in the face of financial crises, although talked about probability of achieving the intermediate target of 2010. b. The importance of investment and social partners' support for the targets' achievement was underlined.	<ul style="list-style-type: none"> Although the indicator is about improved water sources, the text in the report refers to safe water, as in the target There is also improved and safe water interchangeably used Multiple data sources and not clear how the estimate was derived and which data contributed to what 	<ul style="list-style-type: none"> Share of people with access to improved water sources (%), disaggregation by rural and urban No of artesian wells and springs exploited. Regeneration rate (%) of water resources average water consumption (litre) per person 	Triple source: CNŞPM P ⁴ , Apele Moldovei ⁵ , NBS	38.5	59	65
	Increase the number of people with permanent access to improved sewage from 31.3% in 2002	Proportion of people with access to improved sewage systems (Rom: "... access to improved	a. The issue is raised about construction, development and rehabilitation of public sewer systems , which due to financial constraints received less	Claims are made that due to lack of financial attention comparatively less progress in sewage, but the graphs show: water coverage 37.8% in 2000 to 53% in 2008, i.e. 40% progress	(in the text) <ul style="list-style-type: none"> Share of people with constant access to sewerage (%),no urban, rural disaggregation 	Ministry of construction	31.3	50.3	65

³ "CANALIZARE" according to the Explanatory Dictionary of Romanian language means: set of technical works for collection, cleaning/purification and evacuation of used water in a locality, within a technical system, on a field, etc., or of the rain water, in order to maintain/preserve the sanitarian and hygienic conditions of the soil. (CANALIZĂRE, canalizări, s. f. ♦ Ansamblu de lucrări tehnice executate pentru colectarea, epurarea și evacuarea apei întrebuințate într-o localitate, într-un sistem tehnic, pe un teren etc., sau a apei de ploaie, în vederea păstrării salubrității solului și a aerului; canalizație. – V. canaliza. Source: [DEX '98](http://dexonline.ro/definitie/salubritate), <http://dexonline.ro/definitie/salubritate>.)

⁴ National Scientific-Practical Center for Preventive Medicine = Centrul National Stiintifico-Practic de Medicina Preventiva, <http://cnsmp.md>

⁵ "Apele Moldovei" Agency, <http://www.apemoldovei.gov.md/>

	to 50.3% in 2010 and 65% in 2015	sewage.... – different than in Eng.	finances than water supply slowing progress. b. Trend over 2007 and 2008 was described. c. Likely non-achievability of national MDG target if financial coverage not ensured.	compared to 31.8% in 2000 to 45.7% in 2008, which gives 44% progress.	<ul style="list-style-type: none"> No of rural communities and no of towns, where respectively repair and reconstruction of sewer systems was done, and water treatment stations were repaired. Kilometers of repaired sewer pipes 				
	Increase the number of people with access to sanitation systems from 41.7% in 2002 to 51.3% in 2010 and 71.8% in 2015	Proportion of people with access to improved sanitation (Rom: “... access to salubrizare... ” – different than in Eng.)	Slow progress meaning intermediate target for 2010 will not be achieved and the final target for 2015 quite ambitious.	<ul style="list-style-type: none"> “improved” is not always used – in the indicator in Eng., but not in the target and in Rom. Indicator; Does not explain well what sanitation facilities mean in this context, but makes reference to public sanitation system, and the text refers this to “salubrizare” (waste collection and disposal services) ‘salubrizare’ translated as ‘sanitation’ in Eng. text which is wrong 	Share of people with access to improved sanitation (%). Urban and rural specifics is mentioned, although not covered by evidence/data	BNS (NBS and BNS are used interchangeably without explanation)	41.7	51.3	71.8
Remark: Positive improvement in report: “Impact of environmental policies” chapter (novelty) has been added, which includes the qualitative analysis on polluted water use and its impact on the population health status. Also, the linkage between quality of water sources, water pipes and sewer facilities was analyzed. As source the NHDR on climate change ⁶ has been used.									
2010	Increase the proportion of people with permanent access to safe water sources from 38.5% in 2002 to 59% in 2010 and 65% in 2015 (Rom: “... access to safe water sources... ” – different than in Eng.)	Proportion of population with access to improved water sources (in the chart) (Rom: “... improved access to water sources... ” – different than in Eng.)	a. trend analysis referring to likely non-achievability of national MDG target of 2015 as well as the intermediate target of 2010, despite of support of development partners. b. importance of investments was underlined.	<ul style="list-style-type: none"> Compared to 2009 report, data source is no longer multiple. Although according to the table at the back of the report shows NBS as the data source, under the trend graph it says Ministry of Environment, while data have been provided by the National Center for Public Health ; Inconsistent use of “improved” in the name of indicator, it is used in combination with both “access” and “sources” the indicator is about improved water sources, the target is about safe water sources, and the text in the report refers to both safe and improved water; 	Share of people with constant access to improved water sources (%), with disaggregation by urban and rural	NBS indicated in annex to report, MoEnv is mentioned in the chart, and data belong to NCPH	38.5%	59	65
	Increase the proportion of people with permanent access to improved sewage from 31.3% in 2002 to 50.3% in 2010 and 65% in 2015 (Rom: “... access to improved sewage... ” – different than in Eng)	Proportion of people with access to improved sewage (Rom: “... improved access to sewage system... ” – different than in Eng.)	a. Analysis referring to construction, development and rehabilitation of public sewer systems and water treatment facilities b. Identical analysis as 2009 report, i.e. slow progress	<ul style="list-style-type: none"> New estimates for 2000-2005 were used in the chart which do not correspond to the data in annex to report, without any explanation how this changed from the previous report. Data for the baseline year 2002 in the chart does not correspond with the respective baseline in the target 	<ul style="list-style-type: none"> Share of people with constant access to sewerage (%), no urban, rural disaggregation; No of rural communities and no of towns, where respectively repair and reconstruction of sewer systems was done, and water treatment stations were repaired. Kilometers of repaired sewer pipes 	NBS indicated in annex to report, MoEnv is mentioned in the chart	31.3%	50.3	65
	Increase the number of population with access to sanitation	Proportion of people with access to improved sanitation	a. overwhelming majority of rural communities do not have public sanitation facilities at all, except	<ul style="list-style-type: none"> Does not explain well what sanitation facilities mean in this context, but makes reference to public sanitation system, 	Share of people with access to improved sanitation (%), no urban, rural disaggregation	MCRD indicated in annex	41.7%	51.3	71.8

⁶ <http://undp.md/publications/2009NHDR/index.shtml>

	<p>systems from 41.7% in 2002 to 51.3% in 2010 and 71.8% in 2015 (Rom: "...access to "salubrizare"...",</p>		<p>for those located near large towns and cities, as waste collection and disposal services are provided by specialized divisions within municipal enterprises</p>	<p>and the text similar to 2009 report also refers this to waste collection and disposal services, i.e. "salubrizare".</p> <ul style="list-style-type: none"> • According to the table at the back of the port shows MoTRD as the data source, under the trend graph it says Ministry of Environment, • The indicator is about improved sanitation, while the target does not contain "improved" • New estimates for 2000-2004 were used in the chart which do not correspond to the data in annex to report, without any explanation how this changed from the previous report; • Data for the baseline year 2002 in the chart does not correspond with the respective baseline in the target 	<p>Although reference to rural and urban population is made, these are accompanied by no evidence/data.</p>	<p>to report, MoEnv is mentioned in the chart,</p>			
<p>Remarks:</p> <ul style="list-style-type: none"> - In the "general tendencies" of the report the reference to the latest years is missed which can be confusing for the reader and data should be mandatory accompanied by their source and timeframe they refer to; - the report contains a box with explanation on revision of MDG 7 targets which is useful for the track of progress; - English version of report printed in black&white what makes useless the notes below the charts referring to marking of targets in red; - Positive improvement in report: "Impact of environmental policies" chapter has been added, which includes the qualitative analysis on polluted water use and its impact on the population health status – the same as in the 2009 report. 									

Technical consultations with national data producers

1. During the course of the mission, Mr. Hossain met with representatives from National Bureau of Statistics, Ministry of Health (National Centre for Public Health), Ministry of Construction and Regional Development, Ministry of Environment as well as EU Project on waste management.
2. From these consultations it was evident that due to lack of coordination of participating national institutions in charge of different indicators within the MDG framework, there have been numerous discrepancies in the national MDG statistics with limited or no metadata. From data reconciliation exercises undertaken by JMP, this is a very common scenario in many countries. Therefore the crux of the solution to produce a consistent report is the necessity of well coordination between the national stakeholders. Without this not only the reports will be inconsistent but also likely not to have a national consensus and therefore providing a weak policy guidance. It was therefore no surprise that the consultants producing these reports found the task challenging and as a result inconsistent data, with missing references, poor metadata etc. have been delivered. UNDP as well as other UN agencies are international development partners of national authorities. They are to facilitate matters of national interest but not in charge of national actions and decisions. To make their work worthwhile, national institutions should take charge of national monitoring and coordinate related activities more efficiently.
3. On the monitoring of drinking-water Moldovan indicators seemed to be measuring safe water but the measure of this doesn't come from household surveys (as these do not have indicators to this effect) but from routine monitoring done by National Centre for Public Health (met with Dr Ion Salaru, Premier Deputy Director General). However the access to safe water mentioned in the national MDG reports (55% in 2009) comes neither from routine monitoring of safe water by NCPH (their 2009 estimates was 47%), nor from household surveys (according to the Demographic and Health Survey of 2005, done by NCPH, following their definition of improved water, identical to global MDG definition, the access to water is 90%. It is therefore still a mystery as to the source of the data on national access to safe water of 55% according to the MDG report of 2010.
4. It is also noted that unlike most countries sector agency, NCPH is responsible for conducting Demographic and Health Surveys (2005) and Multiple Indicator Cluster Surveys (2000 and 2011, the latter is not yet conducted at the time of this mission).
5. According to NCPH, national definition of access is the same as the international definition of improved and unimproved water and sanitation (see Annex C: analysis of survey data). But this is not consistent with NCPH's access number according to the surveys they conducted, viz., MICS and DHS. As JMP access calculation is based on these surveys, the access numbers by NCPH and JMP are dramatically different for water. It was not clear from the discussions, what's the national definition of access to water and sanitation. In addition to the confusion of equating sanitation to 'salubrizare', it was also not clear whether Moldovan authorities are measuring safe water or just improved water and what's the definition of either one. Although the claim of NCPH is their definition of improved water is the same as global MDG definition, using the same data sources and definition that is used by JMP one gets quite discrepant estimates (see the section on comparing national and global MDG).
6. The meetings with NBS, and other ministries did not clarify this matter and confirmed that sanitation in the MDG monitoring has indeed been equated with household waste removal and transportation.

Review the method and practice

At the time of setting the global targets for Millennium Development Goals, it was stipulated that countries are free to set national targets and make national priorities. Millennium Development Goals are set at global level. Although there is no need for a direct link between global targets and those set at the national level, since global monitoring is based on national monitoring, without a reciprocity in the understanding of estimates at these two levels, MDGs at both ends will at best be incomplete and run the risk of being faulty. For most countries there felt a need for reconciling these estimates and the JMP has been engaged in a number of countries over the past four years in doing so. The evaluation in Moldova (this work) is similar to the other data reconciliation experiences of JMP, and the noteworthy ones are outlined below:

1. JMP country estimates often differ from national estimates even though JMP data comes from surveys and censuses carried out by national government agencies. It is common to find different estimates of access to drinking-water and sanitation produced by different agencies within the same country. This

situation leads to confusion about the situation of access for a given country and sometimes causes mistrust between monitoring actors and decision makers.

2. One of the first main underlying reasons for these differences is rooted in the lack of collaboration between the relevant agencies and as such institutional fragmentation. At national level, it is common to have different institutions in charge of monitoring national access to drinking-water and sanitation. The National Statistics Bureau usually has the overall responsibility for producing national statistics; however individual line-ministries or sector agencies responsible for actual service provision often have their own monitoring mechanisms. In addition, in many countries, these sector agencies will be specialized in one specific aspect of service provision that can be linked to the sector (water / sanitation), the types of settings (urban / rural), and the area of responsibility (infrastructure planning and management / service provision). Each of these institutions has its own monitoring system and it is often observed that very little coordination exists between these different actors who are producing their own estimates sometimes without national coherence.
3. Line-ministries often track progress based on recorded outputs of the sector. In the case of Moldova, the National Centre for Public Health uses both surveys as well as provider data for their monitoring. While line-ministries responsible for water supply and sanitation often track progress by progressively adding those with new drinking water or sanitation services to the proportions already covered, NBS tends to measure the actual use (UNDP MOLDOVA TO CHECK THIS WITH NBS) of drinking-water and sanitation facilities by surveying the household members through censuses and periodic household sample surveys. This difference is important as a service, once provided, may no longer be operational, or simply may not be used by households for a variety of reasons. Facilities constructed by individual households or outside of government programmes are captured by a census or household surveys but often do not appear in administrative records of line-ministries.
4. A common finding by the JMP was that line-ministries and NBS often use different definitions of access. It is also not uncommon to find different definitions of access used between household sample surveys and censuses, hence access figures vary between reports using similar datasets.
5. The principle of country reconciliation consists in bringing together the different national monitoring actors, analysing data and estimates, identifying and understanding differences that may exist between the different approaches, methods, definitions, categories and examining what can be improved to establish better estimates reflecting the situation of drinking-water and sanitation at national level.

Review data sources and methods of assessing access to sanitation (sewerage and toilets)

1. One of the main difficulties in this exercise was how sanitation is monitored and what exactly is monitored under 'sewage' and 'sanitation'. Discussion with the national stakeholders showed that the root of the problem is i) lack of clarity on the specification of the target and associated indicators, ii) apparent difficulty in monitoring this indicator national wide, mixed with the iii) discontinuity of Ministry of Local Public Administration (hereinafter referred to as MLPA) who was monitoring this and redistribution of their works to Ministry of Construction and Regional Development (hereinafter referred to as MCRD) and State Chancellery but without any continuity of the indicator concerning 'salubrizare'. Hence reviewing the four MDG reports a discontinuity of data on 'salubrizare' after 2008 is observed which is when MLPA ceased to exist. Additionally for some unknown reason MDG monitoring on sanitation is really about monitoring of 'salubrizare', which has been referred to the collection and transportation of domestic solid and liquid waste and cleaning of streets. This is quite different from Global MDG monitoring of sanitation. The latter has the indicator on access to sanitation as: *proportion of population that uses an improved sanitation facility (urban and rural)*.
2. Although in the 2005 report sanitation was only being referred to salubrizare, the reports from 2007 onwards, the sanitation target has been associated with two indicators, one on sewerage and other on sanitation, which again was being referred to 'salubrizare'.

Methodological advice on definitions of access

Consistent methodology with standard definition is key to effective monitoring. Therefore definitions based on standard typologies for safe drinking water, sanitation and waste management are needed for data harmonization. Promotion of the use of standardized data collection mechanisms will lead to production of consolidated national data for the future reports on MDG progress.

1. Although JMP is mandated and therefore produces national, regional (MDG regions) and global estimates, these have little relevance for national policy formulation as national authorities often need sub-national data. But JMP data are used by all international organizations as well as all development donors for international policy formulation and donor fund prioritization. It is therefore important that even though national access estimates are different from JMP estimates due to unavoidable definitional differences, they are reconciled and proper mapping is done, so that both parties understand each other and appreciate the need for both datasets and policy makers are easily able to make the connections.
2. JMP data reconciliation exercises have highlighted that harmonized definitions and an agreed classification of the different categories used for country estimates help to ensure national coherence as well as better use of the emanating data and less confusion in the resulting estimates. It is also desirable that such harmonized monitoring tools are aligned with JMP. This will explain differences between national and global monitoring by facilitating the reconstruction of estimates based on national or global definitions.
3. The output of this harmonization process generally corresponds to a list of categories of infrastructures considered "improved" and "unimproved" in the national estimates, agreed by all stakeholder institutions, and showing the detailed correspondence with JMP categorization (the same as MDG categorization at the global level) The corresponding definitions of access to water and sanitation for JMP are listed below:



4. The typologies for water sources and sanitation facilities appeared in DHS 2005 (left below), and those by MICS in 2000 (middle) are comparable to those by JMP. Whereas the typologies found in Household Budget Survey by NBS (right) has different typologies and this makes the use of these surveys in international monitoring difficult, as assumptions should be made to make the categories compliant with JMP. For example, a protected well is improved for JMP, but the category in HBS is simply well. Therefore to minimize the maximum error JMP will use only 50% of these facilities as improved.

PIPED WATER	
PIPED INTO DWELLING	11
PIPED TO YARD/PLOT	12
PUBLIC TAP/STANDPIPE	13
ARTESIAN/TUBE WELL OR BOREHOLE	21
DUG WELL	
PROTECTED WELL	31
UNPROTECTED WELL	32
WATER FROM SPRING	
PROTECTED SPRING	41
UNPROTECTED SPRING	42
RAINWATER	51
TANKER TRUCK	81
CISTERN	82
CART WITH SMALL TANK	71
SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL)	
BOTTLED WATER	91
OTHER _____	96
(SPECIFY)	(SPECIFY)

Typologies in MICS:
Water:
Piped into dwelling
Piped into yard or plot
Public tap
Tubewell/borehole with pump
Protected dug well
Protected spring
Rainwater collection
Bottled water
Unprotected dug well
Unprotected spring
Pond, river or stream
Tanker-truck, vendor
Other (<i>specify</i>)
No answer or DK
Sanitation:
Flush to sewage system or septic tank
Pour flush latrine (water seal type)
Improved pit latrine (e.g., VIP)
Traditional pit latrine
Open pit
Bucket
Other (<i>specify</i>)
No facilities or bush or field

Typologies in Household Budget Survey of NBS:
Water supply:
• Public Aqueduct
• Water fountain
• Well
• Other
Sewerage system
• Public network
• Individual system
• No
Sanitary group/WC
• Inside the dwelling
• Outside the dwelling
• No

Recommendations for data on waste management services

Within NBS, Department of Agriculture and Environment Statistics annually collects such data and publishes in their annual reports. These data are originally from administrative records reported through a statistical questionnaire to NBS and not from household surveys. Since this report focuses on MDG and suggests that MDG reports should be based on household surveys, like it is done at the global level, such data could continue to be collected but should remain outside the remit of MDG monitoring. Also as MCRD is willing to take part in such data collection, NBS could serve as the data validation agency rather than data collection agency and work closely with the former.

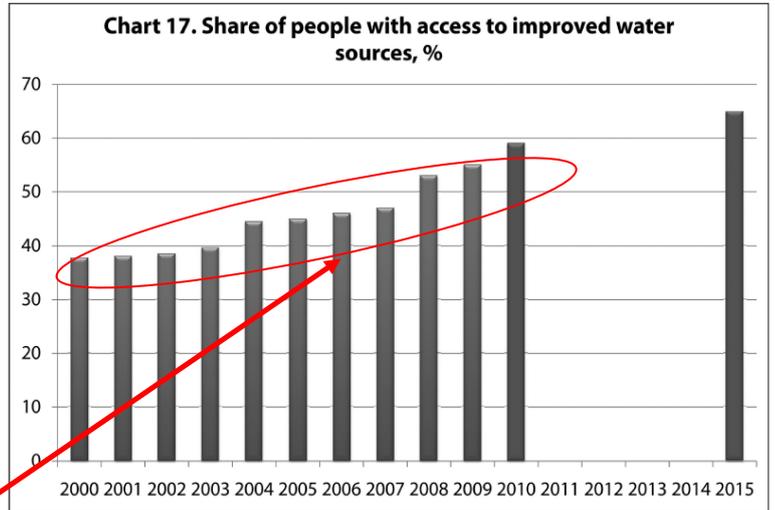
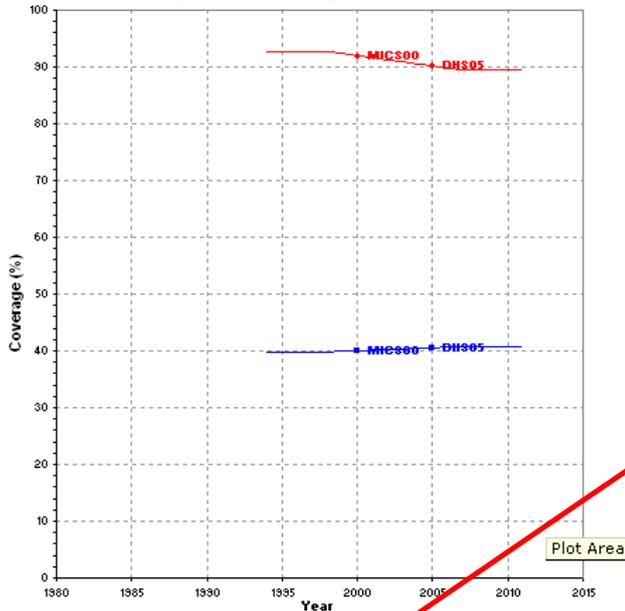
Complementary use of survey data to administrative sources

- Line-ministries often track progress based on recorded outputs of the sector. While line ministries responsible for water supply and sanitation often track progress by progressively adding those with new drinking water or sanitation services to the proportions already covered, NBS tend to measure the actual use of drinking-water and sanitation facilities by households through censuses and periodic household sample surveys. This difference is important as a service once provided may no longer be operational, or simply may not be used by households for a variety of reasons. Facilities constructed by individual households or outside of government programmes are captured by a census or household surveys but often do not appear in administrative records of line-ministries.
- It is therefore suggested that household survey data are used for MDG monitoring and validation tool for administrative data. With the advent of social networking, crowd sourced data collection mechanisms, like mobile technologies (through *facebook* for example) could be explored to gather administrative data.

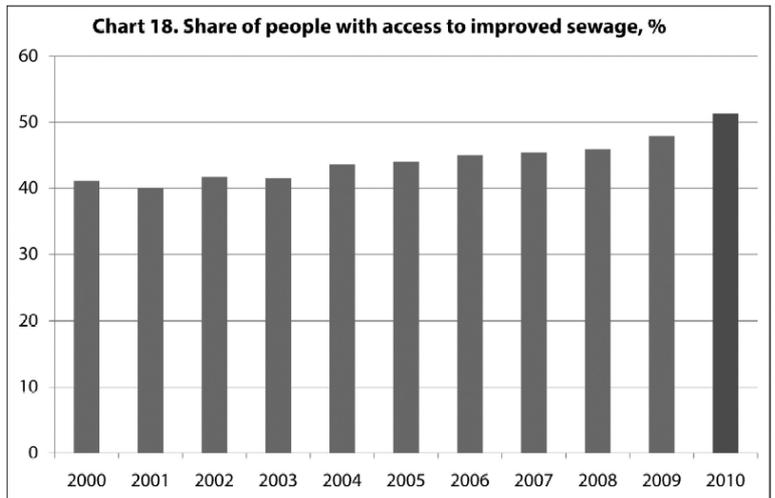
Different estimates: national vs global MDG for Moldova

Republic of Moldova - total -

JMP - estimated proportion of the population using improved drinking water sources

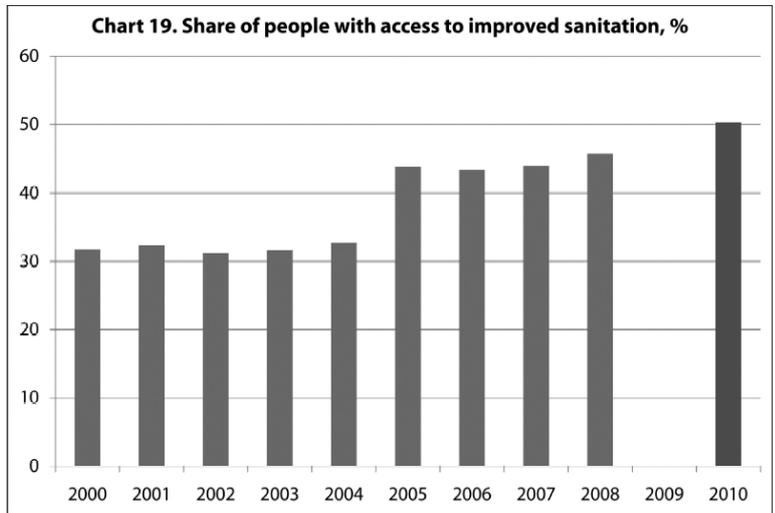
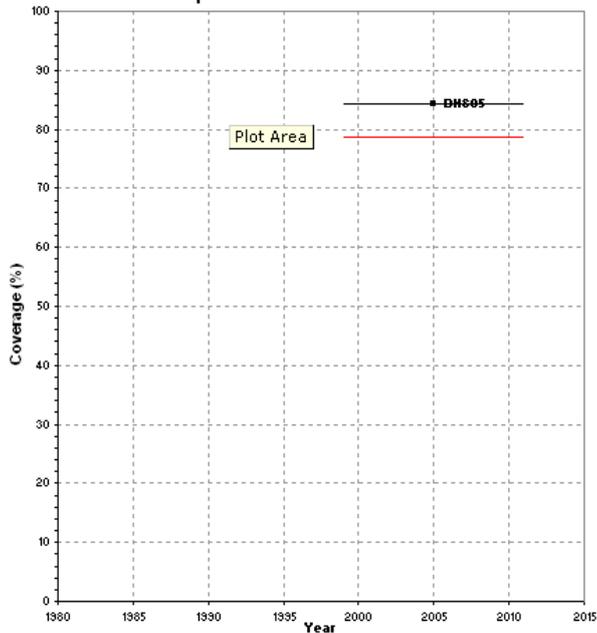


Year	Estimated coverage 2012 update				
	Total improved	Piped onto premises	Other improved	Other unimproved	Surface water
1990	93%	40%	53%	7%	0%
1995	92%	40%	52%	8%	0%
2000	90%	41%	49%	10%	0%
2010	89%	41%	48%		
2011	89%	41%	48%		



Republic of Moldova - total -

JMP - estimated proportion of the population using improved sanitation facilities



Year	Estimated coverage 2012 update			
	Improved	Shared	Other unimproved	Open defecation
1990				
1995				
2000	78%	6%	16%	0%
2005	78%	6%	16%	0%
2010	78%	6%		
2011	78%	6%		

In addition to the fact that figures in chart 17 differs from the figure in the table at the back of MDG 2010 national report, due to the differences in the definition of improved water between national and international levels, the comparison above is not really meaningful. It is therefore suggested that a proper data reconciliation is done in Moldova.

Differing targets/indicators: national vs global MDG

Water or sanitation	Level	Target/baseline	Indicator(s)	Comments
Water	National	Increase the share of people with permanent access to safe water sources from 38.5% in 2002 upto 59% in 2010 and 65% in 2015	Indicator; Share of people with access to improved water sources (%)	It is not clear what is the goal of Moldovan MDG on water, safe or improved water. These two terms are used interchangeably but inconsistently.
	International	Halve the proportion of 1990 population without sustainable access to safe water	Indicator: proportion of people who uses an improved source of drinking-water, urban and rural	<p>Although there's a disconnect between target and indicator (due to the unavailability of data on safe water), safe versus improved, the definition of the latter is clear. An improved water source is one that by nature of its construction is likely to protect the water from outside contamination, especially of faecal matter. Besides JMP's Rapid Assessment of Drinking Water Quality (RADWQ) showed the water quality compliance of improved water sources, thereby making connection between improved and safe.</p> <p>The target is not a fixed target but a relative one vis-a-vis 1990. As a matter of fact JMP target is floating as JMP updates the entire regression line in its new estimates potentially changing the baseline and the target. But this is done as more data gathered makes the regression line better and hence the estimates more robust.</p>
Sanitation	National	Halve the number of 2002 people without access to improved sewage services	Indicator 1: share of people with access to improved sewage (%)	There is no equivalent of this at the international level.
		Increase the number of population with access to sanitation systems from 41.7 percent in 2002 to 51.3 percent in 2010 and 71.8 percent in 2015.	Indicator 2: share of people with access to improved sanitation (%)	<p>A non traditional meaning of sanitation is used for Moldovan MDG. Translation of Romanian word "salubrizare" took a very specific meaning in national monitoring when it translates into English as sanitation.</p> <p>To have connectivity with global monitoring, it is suggested that more traditional meaning of sanitaiton, i.e. access to a toilet is used.</p>
	International	Halve the proportion of 1990 population without sustaibale access to basic sanitation	Indicator: proportion of people who uses an improved sanitation facility, urban and rural	Although there's a disconnect between basic and improved sanitation, the definition is clear. The latter is a type of facility that hygienically separates human excreta from human contact.

Recommendations

1. On improving MDG statistics:

a. Streamline indicators

- i. To have correspondence with global MDG and to keep things simple, it is suggested that for the case of national MDG monitoring, Moldova uses two indicators, one on water and the other on sanitation, and perhaps adopt international definition of improved and unimproved of the two, while keeping the definition of these different from those by JMP, if needed. Specific to water however, as the national authorities want to report on safe water, it can be done in addition to improved water.

b. Consistent definition

- i. Differentiate safe water from improved water: if Moldova is to report access to safe water the definition should be made clear. Currently the reports mix the two terms and use them interchangeably. Additionally, as shown above, the numbers found in the national MDG reports do not match with the numbers for safe water indicated by NCPH.
- ii. Regarding sanitation it is suggested to be defined as it is done for international MDG monitoring.

c. Sources of data

- i. Routine monitoring only measures provision of facilities. It does not measure use of facilities and attempts to do so through routine monitoring have yielded inaccurate and unreliable data. It is therefore suggested that for the sake of MDG monitoring at the national level, data from household surveys carried out by NBS and NCPH are used. Additionally for the sake of consistency NBS should make their indicators and categories of water sources and sanitation facilities consistent with those in DHS and MICS, which are following the standard categorization of MDG framework at the global level. .

d. Metadata

- i. On **reference metadata**⁷, (description of the content, methodology and quality of statistical data including concept metadata) in 2010 the UNDP project assisted NBS in developing the statistical reference metadata for about 30 statistical fields and appropriate statistical surveys⁸, and metadata for **29 core statistical indicators derived from MDGs**⁹. Priority was given to indicators used for the monitoring of national Millennium Development Goals for which NBS is the responsible agency. Metadata on 'improved sewage' of which NBS is in charge are available on http://www.statistica.md/public/files/Metadate/ODM/ODM7_SR2_IR2.pdf. The structure of the metadata for the MDG indicators can be found in Annex B. It is recommended that all relevant institutions, those providing data for MDG monitoring, are to develop similar metadata and perhaps also have them translated into English for use by international monitoring.

2. On improving MDG monitoring and analysis:

a. Coordination of the monitoring players

- i. It is not clear who should be in charge of what, who should coordinate. To make things more efficient, there should be a clear responsibility assigned to individual national agencies (or their subordinated entities) in charge of a specific indicator. Although theoretically State Chancellery is in charge of coordinating MDG monitoring in Moldova,

⁷ These metadata serve as inputs for the gradual implementation of an integrated Statistical Metadata System, a subsystem of the NBS's Information System, linked to the NBS's statistical databank available since end May 2010 (<http://statbank.statistica.md/pxweb/Database/EN/databasetree.asp>). The structure of these metadata conforms with the format used by Eurostat.

⁸ available on <http://www.statistica.md/pageview.php?l=ro&idc=402&id=2869>, in Romanian only

⁹ Available on <http://www.statistica.md/pageview.php?l=en&idc=433> in Romanian only

the state of the reports under review shows that there are much room for improvement on this front. Representatives from State Chancellery could not come to the debriefing session of the mission that took place on the morning of 9th June. But it is recommended that this office maintains a comprehensive list of focal points in relevant national institutions in charge of specific targets and indicators that are part of national MDG monitoring, so that authors of future MDG reports are able to consult the relevant agencies as well as the correct departments within them.

- ii. Target setting is a political process, and therefore usually lies with a sector agency that implements projects to achieve these targets. Indicators are used to monitor a specific target and therefore be maintained by a different agency for the sake of independent monitoring. Therefore it is advisable that monitoring progress towards a target be done not by the implementing authority but an independent body who could objectively monitor the progress. In a national setting, national statistical agency is usually such a body but normally lacks the technical knowhow of sectoral issues. It is therefore recommended that national MDG indicators be maintained by a State Chancellery as is done now with evidence base from NBS who will work closely with sector agencies in guiding them how to effectively monitor the targets through appropriate indicators used in household surveys or routine monitoring.
- iii. List of relevant units and persons who are currently in charge of MDG monitoring/reporting and data provision should be made available to consultants and those recruiting them in the future so that all relevant stakeholders are consulted in preparing the report.

b. Collaboration between sector counterparts and statistical body

- i. NBS is to seek technical advice on definitions, descriptions, and get training on sectoral issues.
- ii. NBS advises Sector agencies on statistical data collection, reporting. Currently MICS and DHS are conducted by NCPH. NBS claims that the access to water and sanitation figure found in the DHS survey of 2005 is too high. Since MICS is being planned for 2011 NCPH is advised to consult with NBS on issues related to survey methodologies. As mentioned earlier, it is ideal that relevant ministries monitoring is done on their behalf by NBS through household surveys. If this cannot be done, NBS should be effectively involved in designing and implementing of household surveys like MICS and DHS. This should be established as a national policy.
- iii. It should also be made clear as to what roles Ministry of Environment, Ministry of Construction and Regional Development and other relevant national bodies should play in the national MDG monitoring. Since MCRD is in charge of monitoring of 'salubrizare', even it does not figure in future national MDG reports, they could get help from NBS as the national competent body on statistical monitoring on how to monitor this better, and report the results back to them for data validation.
- iv. It is recommended that NBS works as the national data clearing house (not necessarily producing the data but certifies that the data is of acceptable quality before it is published) for all statistical data in the country irrespective of who produced the data in the first place.

c. Notions/terms used for MDG reporting

- i. **Safe versus improved water:** As indicated earlier, it is recommended that for national MDG monitoring **improved water** be selected as the primary indicator and as there is a national need for reporting on safe water, it can also be reported along-side, but the distinction be made very clear. To monitor safe water for MDG reporting a separate indicator is warranted.
- ii. **Waste management:** From the global perspective access to sanitation is the use of facilities for defecation and has no bearing on waste management. From the sectoral standpoint, solid waste management could be connected to use of toilets, as the excreta disposal is an issue. But the waste management as was done in the Moldovan MDG monitoring falls outside such premises. Therefore, even though this is important for sectoral purposes, it is advisable to do it outside the remit of MDG monitoring. Additionally, national MDG monitoring sets its baseline as 2002. Since the discontinuity of MLGA, and transition of their roles to the new agencies, it will also be difficult to set a solid baseline estimate on this.

d. Improvement of monitoring of service provision: Administrative data concerning provision of services doesn't tell full story. Provision of a service doesn't mean that the particular service is used by the intended users. Reliability of service, time to the source, tariff and many other factors

come in when it comes to the actual use of a service provision. It is therefore highly recommended that administrative data also takes into account monitoring of the use of the services. As is the case for Moldova, NCPH uses household surveys to collect data on access to water and sanitation, connections should be made between these data and others routinely collected by this agency. Any discrepancy between these two datasets therefore should alert NCPH why a particular service provision is not being used. This will help them improve their engineering design criteria that they routinely use for making provision of a service/facility. This will also allow this data to be more directly comparable to household survey data hence make data reconciliation more meaningful.

e. Improvement of surveys

- i. As was demonstrated earlier, NBS's yearly Household Budget Survey and Labour Force Survey have limited use for international MDG monitoring due to limited disaggregation of several typologies of water and sanitation in these surveys. It is therefore highly recommended that NBS starts using international typologies/categories to make their data better used by others including the international agencies for water and sanitation MDG monitoring.
- ii. In addition to the English version of core questionnaire for household surveys developed by JMP (www.wssinfo.org), found in Annex C to this report, a Russian translation was done for the main questions and can be made available to NBS if requested.
- iii. NBS to consider monitoring of 'salubrizare' and safe water through their household surveys and work with MCRD and NCPH respectively to develop this further.

3. On improving MDG reporting and analysis

a. Translation issues

- i. One of the biggest issue in this analysis was to do with 'salubrizare'. Although this Romanian word translates to English as sanitation, it was used for very specific aspect of sanitation which is to do with removal of household waste and transportation of it. While in English even when sanitation refers to water it is normally referring to excreta disposal, or more generally the simple use of or access to toilets.

b. Use of footnotes to definitions, notions, terms, methodologies

- i. Like all technical reports it is very important to explain well definitions, notions and terms used, methodologies undertaken etc. Therefore it is imperative that future national MDG reports should incorporate this recommendation.

c. Corresponding between targets and indicators in analysis

- i. As shown above the past MDG reports were rife with inconsistencies between targets and indicators without lending any explanations. This made the analysis confusing. Since national MDG reports define national policies it is important that non-technicians like politicians and policy-makers reading the report are able to understand clearly the findings of the report and can take immediate decisions.

d. References

- i. References to data used and other references (like MDG focal points) should be made very clear in the future reports.
- ii. Right and checked sources of data: the same sources for the same indicator in the text, below diagrams and in the annexes
- iii. Mention other sources (alternative sources) of data which are available for a certain indicator thus serving as a cross-checking for the reported data (for example routine data of the NCPH, the new MICS data, or HBS data of NBS).

e. Denominator issue

- i. In addition to specifics and peculiarities of estimates for water and sanitation, one of the common reasons for discrepancies between national and international estimates is the difference of the denominator, i.e. population estimates. While UN agencies use UN Population Division estimates, national population estimates are usually based on latest census data or inter-census estimates. Therefore this exercise not only throws the light on discrepancies between national and international estimates on water and sanitation for a variety of reasons some of which are very common across many sectors, but one of the sources of such discrepancy across all indicators is the use of different population estimates. It is therefore important to mention which population data are used in the estimates.
- ii. It is also suggested that future MDG reports also disaggregates the data for urban and rural Moldova.

Next steps

As agreed during the mission, WHO officially requested NBS for datasets missing from JMP to be included in their next estimates. To be considered for JMP 2012 report they have to be available to WHO by 31 August 2011. Filling data gaps will make JMP estimates more complete and hence robust for Moldova and therefore inform better the policymakers at the international level to formulate MDG policies for Moldova better and thereby serving the country.

Additionally, as agreed during the mission, NBS will have an internal discussion with their management to consider international typologies (categories of water sources, sanitation facilities etc.) for inclusion in their household surveys. The former will make NBS produced data more usable by international organizations, like JMP. As seen from the graphs presented above that JMP currently using only MICS and DHS surveys and not HBS that are produced by NBS yearly. And it is not only because of unavailability of the datasets. As these datasets become available to JMP, since the categories of water sources and sanitation facilities are not readily translatable to JMP categories, assumptions have to be made before they can be used and hence run the risk of not being considered correctly. This can be rectified by having the same categories as JMP¹⁰, which not only will serve JMP better but will also be useful for national purposes, like making comparisons with other national data sources like DHS and MICS which are done by Ministry of Health. Obviously any water source or sanitation facility non-existing in Moldova could be dropped from the categories.

It was also discussed that NBS will consider monitoring other aspects of water and sanitation, like 'salubritate' and water quality. For the former, even though it is not recommended to be an MDG indicator it is important to monitor it for national purposes and NBS with its experience in monitoring it is best placed to continue to do it in cooperation with MCRD. As for the latter, if water quality can be monitored through HBS yearly, it can be a good source of cross check of the water quality data collected by National Centre for Public Health.

The mission showed the need for training of national experts from the participating organizations on how to improve national monitoring and related statistics. On the issue of organizing a multi-country workshop suggested at the briefing meeting of 9 June, to share ideas on respective national monitoring, Moldovan authorities (specifically NCPH) expressed their interest to do such a thing not with other CIS countries of Europe but with EU countries. Since Moldova is preparing its accession to EU and therefore there is a need to comply national standards to those of the EU, the country institutions are much more keen to learn from experiences from countries of Eastern Europe newly admitted to EU.

WHO country office also expressed willingness to help in the follow-ups to this mission and is eager to take greater role and leadership in future endeavours especially on health related MDGs, including those on water and sanitation. WHO Moldova will consider to make available limited funds on follow-up activities (examples: follow-up mission on training national agencies/institutions to incorporate any recommendation from this report, national workshop to enhance monitoring etc.) to this mission, as agreed with the national stakeholders and UNDP Moldova office.

¹⁰ <http://www.wssinfo.org/definitions-methods/watsan-categories/>

ANNEX A: AGENDA: 6th – 9th June 2011

Time	Meeting	Contacts
Monday, 6 June 2011		
12.15+1.00	Arrival – Hotel. tel.: +373 22 208104 fax: +373 22 237948	Hotel Codru 4*, 127, 31 August 1989 str.,
16.00 – 17.00	Discussion with Statistics Project – objectives, tasks of mission	Statistics Project, 106 Grenoble Str.
Tuesday, 7 June 2011		
9.00-10.30	Meeting with Ministry of Regional Development and Constructions Natalia Mihailov, Head of Housing Division Topic: Access to improved sanitation (waste) Task: - data collection, calculation methodology, parallel/other sources of data - review of targets and indicators - methodological advice on definitions of access to safe sanitation - need for and ways of harmonization of data	MD-2005 mun. Chişinău, str. Cosmonauţilor 9 Tel. (+ 373 22) 204558, 204557
10.30-11.00	Meeting with the staff of EU Project on Waste Governance Tatiana Ţugui, project manager Marcela Vatamaniuc Topic: Access to improved sanitation (waste) Task: - data collection, calculation methodology, parallel/other sources of data - need for and ways of harmonization of data	MD-2005 mun. Chişinău, str. Cosmonauţilor 9 22-25-42
11.00-12.00	Meeting at the State Environment Inspection Veronica Andronic, Inspection of soil, wastes, chemicals Topic: Access to improved sanitation (waste) Task: - data collection, calculation methodology, parallel/other sources of data - need for and ways of harmonization of data - method and practice of collecting administrative data	str. Cosmonauţilor 9 22-69-27, 5 th floor, 529
12.00 - 13.30	Lunch	
13.30-17.00	Discussions with National Bureau of Statistics , Division of Social and Living standards Statistics Ala Negruta, head of division Liuba Stoianov, head of section of social statistics Tatiana Sobcovschi, head of section of living standards statistics Topics: Access to improved sewerage, water, sanitation Task: identification of ambiguity and issues related to: - data collection, calculation methodology, data sources - methodological advice on definitions of access to safe drinking water, and waste management - need for and ways of harmonization of data sanitation - using Population and Housing Census for MDG indicators on sewerage, water	106 Grenoble Str. 8 th floor, small conference room
Wednesday, 8 June 2011		
10.30-12.00	Meeting with National Center for Public Health Ion Şalaru, prime vice-director Topic: Access to improved water Task: - data collection, calculation methodology, parallel/other sources of data - methodological advice on definitions of access to safe/improved drinking water - need for and ways of harmonization of data	Chişinău, str. Gh. Asachi 67/a, 2 nd floor, anticamera, Tel: 574666

Time	Meeting	Contacts
12.00 - 13.00	Lunch	
13.30-14.00	Meeting with WHO/Moldova Jarno Habicht, WHO Representative / Head of Country Office Larisa Boderscova, PhD, NPO, Health Systems, FCH	27 Sfatul Tarii str., office 37-38 Chisinau, MD-2012 Tel/fax: + 373 22 23 74 98
14.30-15.30	Meeting with Ministry of Environment Guvir Tamara, superior consultant, section on prevention of pollution	str. Cosmonauților 9 20-45-26, , 6th floor, 529
16.00- .17.00	Meeting with NBS Ala Negruta, head of division Liuba Stoianov, head of section of social statistics Tatiana Sobcovschi, head of section of living standards statistics Discussion of results of simulation of data on “salubrizare” (communal services, cleaning of streets and collection of waste) on the basis of data collected by NBS	106 Grenoble Str. 8 th floor, small conference room
Thursday, 9 June 2011		
9.00-10.15	Debriefing on the mission results and presentation of the preliminary recommendations NBS management (Vitalie Valcov, vice director) and Ala Negruta, Social Statistics Division State Chancellery (Dumitru Alaiba - missing) Ministry of Constructions and Regional Development (Natalia Mihailov) National Center for Public Health (Ion Șalaru)	106 Grenoble Str. 8 th floor, small conference room
10.15	Hotel Codru –check-out	127, 31 August 1989 str.,
10.45- 12.40-	Departure to airport Departure to Rome	

ANNEX B: Structure of Reference metadata: National Bureau of Statistics (NBS)

<i>Elements of the metadata</i>	<i>Explanation</i>
Definition	Brief description of the indicator
Measurement unit	Measurement units used for the representation of the statistical variable.
Calculation formula	Formula to calculate the respective indicator
Disaggregation level	Availability of the data by different disaggregation dimensions as geographic area, type of activity, property type, gender, etc., as well as the restrictions applied imposed by the principle of data confidentiality
Dissemination frequency	Frequency of data dissemination (monthly, quarterly, half-yearly, annually, biannually etc.)
Deadline for presentation (dissemination)	Date, timeframe for the dissemination of data, subject to their periodicity.
Revision	Describes if data are finalized or preliminary at the first dissemination.
Data source	Refers to the source of primary data: surveys (statistical reports), administrative data sources, estimates, etc
Comparability at the international level	International standards to which the methodology of statistical indicator/survey is harmonised.
Comparability in time	Provides information on comparable time series, periods of discontinuities in time series, reasons and ways to approach these discontinuities.
Coherence with other statistics (correlated indicators)	Level to which statistical data are comparable with those obtained from other data sources and statistical domains.
Contact details	Name of the division of NBS responsible for the content of the metadata file. Name of the person responsible for the respective statistical domain (name, function, phone number, email address).
Last update of metadata	Date when the metadata has been updated/adjusted.
Notes	Notes, including: <i>„More detailed metadata are available at the address below: ...”</i>

ANNEX C: Excerpt from JMP core questions for household surveys

Survey questions about drinking water

Question 1: Main drinking water source

The purpose of this question is to determine the main source of drinking water for members of the household (i.e. the water source that supplies most of the household drinking water needs). The type of water source or technology specified by the household is used as an indicator for whether the drinking water is of suitable quality.

The water sources likely to be of suitable quality, or “improved”, are: a piped water supply into the dwelling; piped water to a yard/plot; a public tap/standpipe; a tube well/borehole; a protected dug well; a protected spring; and rainwater. Water sources that are “unimproved” are: an unprotected dug well; an unprotected spring; a cart with a small tank/drum; a water tanker-truck; and surface water.

Q1. What is the main source of drinking water for members of your household?	
Piped water into dwelling	>>Q4
Piped water to yard/plot	>>Q4
Public tap/standpipe	>>Q2
Tubewell/borehole	>>Q2
Protected dug well	>>Q2
Unprotected dug well	>>Q2
Protected spring	>>Q2
Unprotected spring	>>Q2
Rainwater collection	>>Q2
Bottled water	>> Q1A
Cart with small tank/drum	>>Q2
Tanker-truck	>>Q2
Surface water (river, dam, lake, pond, stream, canal, irrigation channels)	>>Q2
Other (specify)	>>Q2

Indicator

Use of improved drinking water sources.

Numerator

Number of household members using improved sources of drinking water.

Denominator

Total number of household members in households surveyed.

Definitions

“Improved” sources of drinking water

- **Piped water into dwelling**, also called a household connection, is defined as a water service pipe connected with in-house plumbing to one or more taps (e.g. in the kitchen and bathroom).
- **Piped water to yard/plot**, also called a yard connection, is defined as a piped water connection to a tap placed in the yard or plot outside the house.
- **Public tap or standpipe** is a public water point from which people can collect water. A standpipe is also known as a public fountain or public tap. Public standpipes can have one or more taps and are typically made of brickwork, masonry or concrete.
- **Tubewell or borehole** is a deep hole that has been driven, bored or drilled, with the purpose of reaching groundwater supplies. Boreholes/tubewells are constructed with casing, or pipes, which prevent the small diameter hole from caving in and protects the water source from infiltration by run-off water. Water is delivered from a tubewell or borehole through a pump, which may be powered by human, animal, wind, electric, diesel or solar means. Boreholes/tubewells are usually protected by a platform around the well, which leads spilled water away from the borehole and prevents infiltration of run-off water at the well head.
- **Protected dug well** is a dug well that is protected from runoff water by a well lining or casing that is raised above ground level and a platform that diverts spilled water away from the well. A protected dug well is also covered, so that bird droppings and animals cannot fall into the well.
- **Protected spring**. The spring is typically protected from runoff, bird droppings and animals by a “spring box”, which is constructed of brick, masonry, or concrete and is built around the spring so that water flows directly out of the box into a pipe or cistern, without being exposed to outside pollution.
- **Bottled water** is produced by reliable companies acting under the quality control of national authority. Bottled water is considered an “improved” source of drinking water only when there is a secondary source of “improved” water for other uses such as personal hygiene and cooking.
- **Rainwater** refers to rain that is collected or harvested from surfaces (by roof or ground catchment) and stored in a container, tank or cistern until used.

“Unimproved” sources of drinking water

- **Unprotected spring**. This is a spring that is subject to runoff, bird droppings, or the entry of animals. Unprotected springs typically do not have a “spring box”.
- **Unprotected dug well**. This is a dug well for which one of the following conditions is true: 1) the well is not protected from runoff water; or 2) the well is not protected from bird droppings and animals. If at least one of these conditions is true, the well is unprotected.
- **Cart with small tank/drum**. This refers to water sold by a provider who transports water into a community. The types of transportation used include donkey carts, motorized vehicles and other means.
- **Tanker-truck**. The water is trucked into a community and sold from the water truck.
- **Surface water** is water located above ground and includes rivers, dams, lakes, ponds, streams, canals, and irrigation channels.

Question 1A: Bottled water prompt

This question is asked only of those whose response to Question 1 was "bottled water". It is designed to determine the main water source used by the household for purposes such as cooking and personal hygiene. Hand washing and cooking are a proxy for all other water uses. If bottled water users use alternate water sources ("improved" or "unimproved"), it is important to identify the main secondary source, to be able to properly classify the household as having access to an "improved" or "unimproved" water source.

Q1A. What is the main source of water used by your household for other purposes, such as cooking and hand washing?	
Piped water into dwelling	>>Q4
Piped water to yard/plot	>>Q4
Public tap/standpipe	
Tubewell/borehole	
Protected dug well	
Unprotected dug well	
Protected spring	
Unprotected spring	
Rainwater collection	
Cart with small tank/drum	
Tanker-truck	
Surface water (river, dam, lake, pond, stream, canal, irrigation channels)	
Other (specify)	

Definitions

See Question 1 for definitions.

Question 2: Time to collect water

The purpose of this question is to assess whether the main drinking water source is sufficiently close or accessible to the household to ensure that there is an adequate daily volume of water for basic household purposes.

The question asks for the total number of minutes it takes to get from the dwelling to the water collection point, queue for water, and return to the dwelling. Time spent socializing (outside of queuing) should not be included in the total number of minutes.

Q2. How long does it take to go there, get water, and come back?	
No. of minutes	>>Q3
Water on premises	>>Q4
DK	>>Q3

Note that the question refers only to a single water-hauling trip and does not consider multiple trips in a single day.

Definitions

- **No. of minutes** refers to the amount of time needed to get to the water source, obtain water, and return to the household. Socializing time should not be included in the minute value given, unless it is done while queuing for water. The minute value is the time for one round trip, not the total time spent per day hauling water.
- **Water on premises** refers to a water source that is located in the household (house, apartment building), or in the yard/plot.
- **DK** means "don't know".

Question 3: Individual(s) Collecting Water

The purpose of this question is to know who usually goes to the source to fetch water for the household. This information gives a sense of whether there are gender and generational disparities with respect to water-hauling responsibilities.

Q3. Who usually goes to this source to fetch the water for your household?	
<i>Probe:</i> Is this person under age 15 years? What sex? Circle the code that best describes this person.	
Adult woman	>>Q4
Adult man	>>Q4
Female child (under 15 years)	>>Q4
Male child (under 15 years)	>>Q4
DK	>>Q4

Questions 4 and 5: Water Treatment

The purpose of the following two questions is to know whether the household drinking water is treated within the household and, if so, what type of treatment is used. The questions are intended to gather information on water treatment practices at the household level, which provides an indication of the quality of the drinking water used in the household.

Check more than one response if several methods are used together (e.g. filtering and adding chlorine).

Q4. Do you treat your water in any way to make it safer to drink?	
Yes	>>Q5
No	>>Q6
DK	>>Q6
Q5. What do you usually do to the water to make it safer to drink?	
<i>Anything else?</i> <i>Record all items mentioned</i>	
Boil	>>Q6
Add bleach/chlorine	>>Q6
Strain it through a cloth	>>Q6
Use a water filter (ceramic, sand, composite, etc.)	>>Q6
Solar disinfection	>>Q6
Let it stand and settle	>>Q6
Other (specify)	>>Q6
DK	>>Q6

Indicator

Use of an adequate water treatment method.

Numerator

Number of household members that treat their water using an adequate water treatment method.

Denominator

Total number of household members surveyed.

Definitions

“Adequate” water treatment methods

An adequate water treatment method disinfects water, killing harmful pathogens.

- **Boil** refers to bringing the water to a boiling boil.
- **Add bleach/chlorine** refers to the use of chlorine compounds to treat drinking water. The most common chlorine compounds include sodium hypochlorite, calcium hypochlorite and bleaching powder (chloride of lime, a mixture of calcium hydroxide, calcium chloride and calcium hypochlorite).
- **Use a water filter (ceramic, sand, composite)** refers to filtering the water through media to remove particles and most microbes from the water. The media used in filtering systems can be ceramic (including clays, diatomaceous earth, glass and other fine particles), sand, or composite (a combination of materials).
- **Solar disinfection** consists of exposing water that is stored in buckets, containers or clear vessels to sunlight.

“Inadequate” water treatment methods

These methods are not sufficient to disinfect water, but can remove dirt or other particles from the water. They could be used in combination with any of the above “adequate” treatment methods, but exclusive use of “inadequate” methods will not make water safe to drink.

- **Strain it through a cloth** refers to pouring water through a cloth which filters particulates from the water.
- **Let it stand and settle** refers to holding or storing water undisturbed and without mixing long enough for larger particles to settle out. The settled water is carefully removed by decanting, or any other gentle method that does not disturb the sedimented particles.

Survey questions about sanitation

Question 6: Sanitation facility

The purpose of this question is to determine the type of sanitation facility used by the household, which provides an indication of whether the household uses adequate sanitation. The question specifically asks about actual use of a facility, rather than asks if a household has or owns a toilet facility. This should avoid counting facilities not in use or dysfunctional.

A sanitation facility is considered adequate if it hygienically separates human excreta from human contact. The types of technology that are more likely to meet this criterion are: flush to piped sewer system; flush to septic tank; flush/pour flush to pit; composting toilet; VIP latrine; pit latrine with a slab.

Types of sanitation facilities that are not likely to meet the criterion are: flush/pour flush elsewhere; pit latrine without a slab/open pit; bucket; and a hanging toilet.

See the definition of "No facilities/bush/field" for various answers to this response category.

The response category "Other" is for recording answers that do not match any other response category. If "latrine", "pit latrine", or "traditional latrine" is given as a response, *probe for whether the latrine meets the definition of a VIP, a pit latrine with slab, a pit latrine without slab, or an open pit.*

Q6. What kind of toilet facility do members of your household usually use?	
<i>If "flush" or "pour flush" probe: Where does it flush to?</i>	
Flush/pour flush to:	
piped sewer system	>>Q7
septic tank	>>Q7
pit latrine	>>Q7
elsewhere	>>Q7
unknown place/not sure/DK where	>>Q7
Ventilated improved pit latrine (VIP)	>>Q7
Pit latrine with slab	>>Q7
Pit latrine without slab/open pit	>>Q7
Composting toilet	>>Q7
Bucket	>>Q7
Hanging toilet/hanging latrine	>>Q7
No facilities or bush or field	>>Q7
Other (specify)	>>Q7

Indicator

Use of improved sanitation facility.

Numerator

Number of household members using improved sanitation facilities.

Denominator

Total number of household members in households surveyed.

Definitions

"Improved" sanitation facilities

- A **flush** toilet uses a cistern or holding tank for flushing water, and a water seal (which is a U-shaped pipe below the seat or squatting pan) that prevents the passage of flies and odours. A **pour flush** toilet uses a water seal, but unlike a flush toilet, a pour flush toilet uses water poured by hand for flushing (no cistern is used).
- A **piped sewer system** is a system of sewer pipes, also called sewerage, that is designed to collect human excreta (faeces and urine) and wastewater and remove them from the household environment. Sewerage systems consist of facilities for collection, pumping, treating and disposing of human excreta and wastewater.
- A **septic tank** is an excreta collection device consisting of a water-tight settling tank, which is normally located underground, away from the house or toilet. The treated effluent of a septic tank usually seeps into the ground through a leaching pit. It can also be discharged into a sewerage system.
- A flush/pour flush to **pit latrine** refers to a system that flushes excreta to a hole in the ground or leaching pit (protected, covered).
- A **ventilated improved pit latrine (VIP)** is a dry pit latrine ventilated by a pipe that extends above the latrine roof. The open end of the vent pipe is covered with gauze mesh or fly-proof netting and the inside of the superstructure is kept dark.
- A **pit latrine with slab** is a dry pit latrine that uses a hole in the ground to collect the excreta and a squatting slab or platform that is firmly supported on all sides, easy to clean and raised above the surrounding ground level to prevent surface water from entering the pit. The platform has a squatting hole or is fitted with a seat.
- A **composting toilet** is a dry toilet into which carbon-rich material (vegetable wastes, straw, grass, sawdust, ash) are added to the excreta and special conditions maintained to produce inoffensive compost. A composting latrine may or may not have a urine separation device.
- **Special case.** A response of "flush/pour flush to unknown place/not sure/DK where" is taken to indicate that the household sanitation facility is improved, as respondents might not know if their toilet is connected to a sewer or septic tank.

"Unimproved" sanitation facilities

- A flush/pour flush to **elsewhere** refers to excreta being deposited in or nearby the household environment (not into a pit, septic tank, or sewer). Excreta may be flushed to the street, yard/plot, open sewer, a ditch, a drainage way or other location.
- A **pit latrine without slab** uses a hole in the ground for excreta collection and does not have a squatting slab, platform or seat. An **open pit** is a rudimentary hole in the ground where excreta is collected.
- **Bucket** refers to the use of a bucket or other container for the retention of faeces (and sometimes urine and anal cleaning material), which are periodically removed for treatment, disposal, or use as fertilizer.
- A **hanging toilet or hanging latrine** is a toilet built over the sea, a river, or other body of water, into which excreta drops directly.
- **No facilities or bush or field** includes defecation in the bush or field or ditch; excreta deposited on the ground and covered with a layer of earth (cat method); excreta wrapped and thrown with garbage; and defecation into surface water (drainage channel, beach, river, stream or sea).

Questions 7 and 8: Shared sanitation facility

The purpose of these questions is to know whether the household shares their sanitation facility with other households. The shared status of a sanitation facility is important because shared facilities can be less hygienic than facilities used by a single household. Unhygienic conditions (faeces on the floor, seat or wall, and flies) may discourage use of the facility.

Q7. Do you share this facility with other households?	
Yes	>>Q8
No	>>Q9
Q8. How many households use this toilet facility?	
Number of households (if less than 10)	>>Q9
10 or more households	>>Q9
DK	>>Q9

Effect on the indicator of question 6

People using an improved sanitation facility that is shared should be discounted from the numerator in question 6.

Definitions

A shared sanitation facility is a facility used by a restricted number of households.

In urban areas and apartment buildings, in particular, several families often share a facility. Research is ongoing to determine if shared facilities should be considered generally as unimproved, or if there is a reasonable cut-off for the number of families sharing a sanitary facility for these families to be considered as having access to improved sanitation.

Currently, the JMP does not consider people who use public or shared facilities to have access to improved sanitation.