

# **Visualisation of MDG implementation with Time Distance Progress Chart**

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## **Time Distance Progress Chart of Millennium Development Goals implementation**

Analysis of MDG implementation needs a clear distinction between the progress made in the world in the analysed period and still considerable delays in the implementation of the MDGs. Progress has been made in all selected indicators and in all world regions (though it has been quite uneven across regions as well as across countries within the regions). We are using data from the UN, The Millennium Development Report 2012, New York, July 2012 and present the MDG implementation in the time distance perspective. The new Report brings two positive messages: it has new additional data and a brighter picture than two years ago.

The MDG 2012 Progress Chart (United Nations 2012) is very useful to give a quick assessment of the complex issue of levels, trends and progress made over 16 selected key targets, as it can deal also with qualitative judgments. For a more restricted number of 10 selected indicators related to these targets for which numerical estimates are available we complement the UN Progress Chart with Gaptimer Progress Chart of monitoring the progress of implementation. In this way we provide additional information and facts for such judgments and enrich the policy debate in a dynamic context.

Time distance is first and foremost important as an innovative concept of looking at data in a novel complementary and intuitively understandable way. The application to monitoring is easy to understand and to communicate; it is like comparing actual arrivals with the train (airplane, bus) timetable. S-time-distance measures deviation in time showing whether the actual developments are ahead or behind in time from path to the 2015 MDG targets (+ time lag, - time lead). For instance, for the indicator prevalence of underweight children under-five years of age the MDG envisages that for Developing Regions the percentage would decrease by one half from 29 in 1990 to 14.5 in 2015. In 2010 the actual percentage achieved was 18, while that level was assumed to be reached on the line to the 2015 target already in 2009. The time distance metric indicates one year of lag behind the line to the 2015 target.

## **Overview of MDG implementation for world regions, China, and India**

Implementation of the Millennium Development Goals is an important global issue. It requires continuous monitoring and communication of the situation at the world, regional, national and sub-national levels. Monitoring and evaluation of the degree of implementation of policy or business targets are indispensable phases of the policy circle. The question what happened with the implementation of the MDG targets can be approached from several perspectives. Empirically deviations from the line to target, i.e. comparing actual values with target values, forecast, budget, plan, etc. can now be measured in two dimensions: static deviation and Sicherl time distance deviation. The Gaptimer Progress Chart below presents the summary situation in the time perspective for the average for Developing Regions, for 7 world regions, China, and India.

## Immediate visualisation of the Gaptimer Progress Chart with 25 graphs

### Gaptimer Progress Chart of MDG implementation for world regions

Are we on the track, ahead or behind in time measured by S-time-distance in years  
(+ time lag, - time lead) comparing with the line to the 2015 MDG targets around 2010

Indicator		Developing Regions	Northern Africa	Sub-Saharan Africa	Latin America and the Caribbean	Eastern Asia	Southern Asia	South-Eastern Asia	Western Asia	CHINA	INDIA
IND 1.1	Proportion of population living below \$1 (PPP) per day (2008)	-6.3	TA (2005)	10.0	-5.4	TA (2005)	1.4	TA (2005)	-1.6	TA (2002)	1.8
IND 1.8a	Prevalence of underweight children under-five years of age	1.0	0.0	7.9	TA (2010)	TA (2010)	1.4	-2.6	TA (2010)	TA (2005)	5.9
IND 2.1a	Net enrolment ratio in primary education	6.4	-0.5	5.5	2.6	N/A	1.5	9.9	6.2	N/A	-5.5
IND 3.1a	Ratio of girls to boys in primary education	0.3	1.2	5.0	N/A	TA (1999)	-3.2	2.9	5.7	TA (2001)	TA (2008)
IND 4.1	Under-five mortality rate	6.9	TA (2010)	8.6	-1.5	-3.4	3.7	-0.6	0.4	-3.4	3.0
IND 5.1	Maternal mortality ratio	4.9	-2.0	6.3	5.7	-3.1	-0.9	-1.1	0.6	-3.1	-2.2
IND 6.10b	Tuberculosis patients successfully treated under short course (2009)	4.2	7.1	3.2	6.7	2.4	2.9	5.2	3.6	5.4	8.4
IND 7.8t	Proportion of population using an improved drinking water source, total	TA (2010)	0.6	6.9	TA (2010)	TA (2010)	TA (2010)	TA (2010)	6.4	TA (2003)	TA (2003)
IND 7.9t	Proportion of population using an improved sanitation facility, total	2.6	TA (2010)	16.0	0.8	TA (2010)	5.9	-2.0	7.1	TA (2009)	6.6
IND 8.16	Internet users per 100 inhabitants (2011)	-3.9	TA (2011)	-1.5	TA (2011)	TA (2011)	-0.7	-3.8	TA (2011)	TA (2009)	-1.1

S-time-distance measure: deviation in time from path to target, (+) time lag, (-) time lead

TA (xxxx) – 2015 target already achieved in year xxxx

#### An overview of the situation in the 7 world regions:

2015 Target achieved	18 cases
Time lead	17 cases

Time lag less than 6 years	21 cases
Time lag 6 years or more	12 cases

Source: Own calculations based on data from UN, The Millennium Development Report 2012, New York

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Gaptimer MDG Progress Chart enables immediate visualisation with 25 graphs:

1. Click on the name of the world region to view the bar chart over the 10 selected indicators
2. Click on the name of the indicator to view the bar chart over the 10 selected units
3. For 5 selected indicators click on the number of the indicator to view the S-time-distance deviation graph for individual developing countries with appropriate data around 2010:
  - IND 4.1, Under-five mortality rate, 137 developing countries
  - IND 5.1, Maternal mortality rate, 127 developing countries
  - IND 7.8t, Proportion of population using an improved drinking water source (total), 117 countries
  - IND 7.9t, Proportion of population using an improved sanitation facility (total), 111 countries
  - IND 8.16, Internet users per 100 inhabitants, 140 developing countries

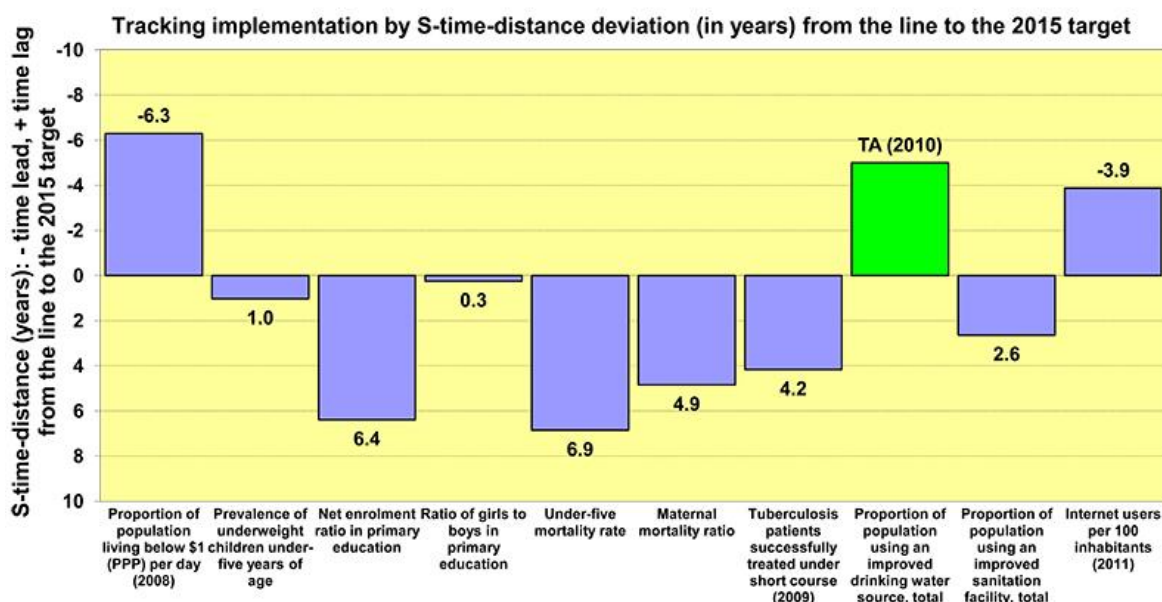
For charts of time distances for individual countries on the axis with the country names only every fourth name of the country could be displayed due to lack of space.

## Are we ahead or behind in time comparing with the line to the 2015 MDG targets?

The Gaptimer Progress Chart allows comparisons of implementation across indicators and regions at a glance providing stories of the situation from the novel time perspective to make the MDG implementation more understandable to policy makers and common people:

- The situation differs among the world regions, but the overall situation shows that for about 26% of cases of 10 selected indicators from all 8 MDG areas the 2015 targets were already achieved, for another 25% of cases the actual developments were ahead of the line to the 2015 targets. For those cases that were lagging behind the lines to targets 31% are lagging less than 6 years and 18% were lagging more than 6 years, especially in Sub-Saharan Africa.
- From the health domain the three selected indicators stand out as the cases where the MDG targets (with one exception) have not been achieved in any of the world regions. This is true also for the net enrolment ratio in the primary education where the target of full enrolment was set too high in view of the starting positions.
- China as the most populated country shows excellent results, for six out of ten indicators it already reached their 2015 MDG targets.
- The graph below is an example from the group one to show the situation over the 10 selected indicators for Developing Regions around 2010.

**Time distance monitoring of the MDGs implementation at a glance  
DEVELOPING REGIONS, around 2010**



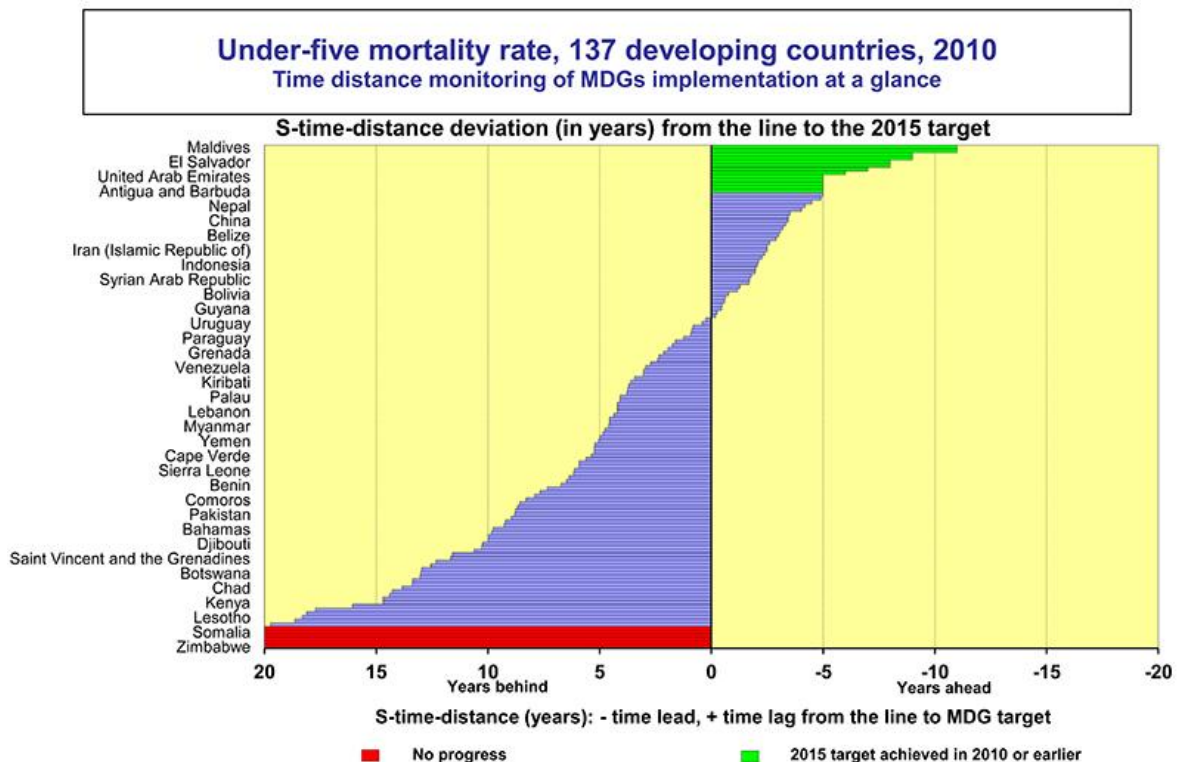
Source: Own calculations based on data from UN, The Millennium Development Report 2012.

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- The average for Developing Regions shows three very favourable developments. For the indicator proportion of population using an improved drinking water source (total) the 2015 target was already achieved in 2010. Proportion of population living below \$1 (PPP) per day was in 2008 already 6.3 years ahead of the line to target; this means that it was very close to the 2015 target; hopefully the current food crisis will not substantially influence this very good achievement. Similarly, indicator Internet users per 100 inhabitants was in 2011 practically at the 2015 target of 25 percent penetration

rate. Ratio of girls to boys in primary education and prevalence of underweight children under-five years of age are very close to the line to target values for 2010.

- The other 5 selected indicators show the time lag behind the line from 2.6 to 6.9 years. Two of the indicators that are lagging behind the line to targets for more than 6 years are net enrolment ratio in primary education and under-five mortality rate. This is partly due to slower implementation and partly due to some problems in unrealistic specification of MDG targets, which should be given much more attention in preparation of the MDGs after 2015.
- The graph below is an example from the group 3 to show the situation over 137 developing countries in 2010.



- The graph shows that out 137 developing countries in 6 countries no progress was observed and that on the other hand in 13 countries the 2015 target for under-five mortality rate was already attained. For maternal mortality rate out of 127 countries 18 countries showed no progress and 6 countries achieved their targets. For improved drinking water source and improved sanitation facility about 20 countries did not show progress while even 56 countries already achieved the targets for the former and 32 for the latter indicator. The best performance was for Internet users per 100 inhabitants where nearly one half of the countries already achieved the 2015 targets.
- These graphs for country values provide a good summary visualisation; on the [www.gaptimer.eu](http://www.gaptimer.eu) they will be complemented with the accompanying Excel files that will provide precise values for each country over the period of available data.

## **Benefits of tracking the implementation of targets with S-time-distance measure**

- The time distance information is at least as helpful for proper perception of the progress in implementation or the lack of it as the percentage difference; as it is expressed in time units it is easily understandable by decision makers and stakeholders.
- It is comparable across variables, fields of concern and units of comparison.
- It complements rather than replaces other methods. The interpretation of how to overcome the time delay may be a very relevant additional practical procedure to be routinely applied to a large number of physical and financial indicators before turning to the more complicated programs.
- It should be reasonably easy to incorporate the S-time-distance methodology for monitoring implementation of the MDGs in the work of the UN, the World Bank and other agencies or countries on these issues, both at macro and at micro levels.
- This methodology can be used as a standard complementary procedure in numerous other activities of the international agencies as well as at the national and local levels, like monitoring and evaluation of implementation of development plans, policy targets and operational projects as well as for monitoring budgets.
- SICENTER developed a free web tool to facilitate this for interested users that can be accessed at [http://www.gaptimer.eu/s-t-d\\_monitoring\\_tool.html](http://www.gaptimer.eu/s-t-d_monitoring_tool.html).

The study is available also on the [OECD wikiprogress page](#).

**Annex.** TIME DISTANCE PROGRESS CHART and GRAPHS (4.6 MB):  
[Gaptimer MDG Progress Chart.ppt](#)