FACT SHEET:
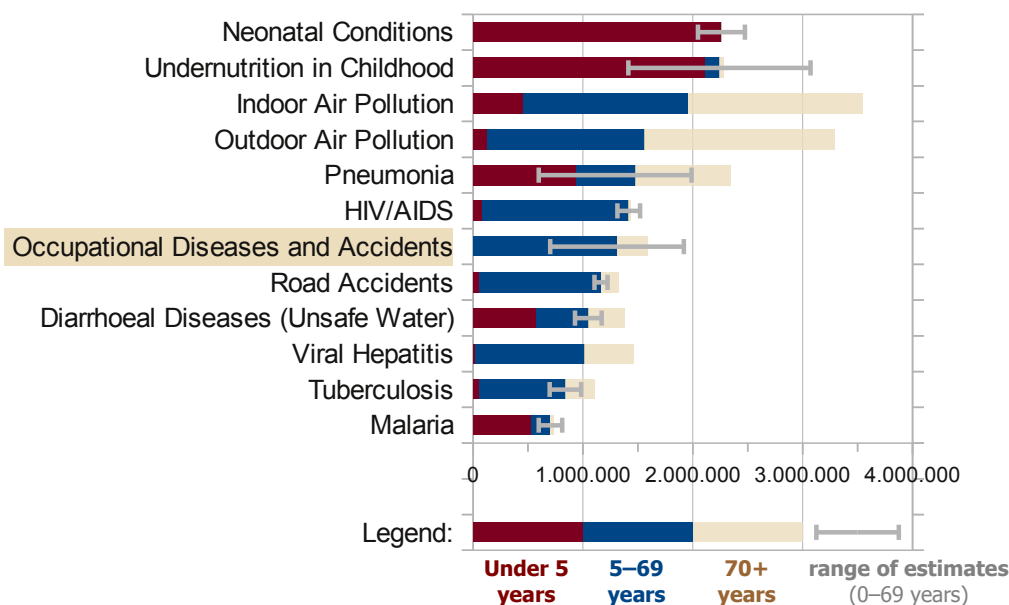## UN OWG Target 8.8 on Safe and Secure Working Environments

The United Nations Open Working Group on Sustainable Development Goals (OWG) has proposed target 8.8 for the post-2015 development agenda as follows:

Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.[1]

The proposed target is hardly quantifiable and not time-bound. Nevertheless, safe and secure working environments deserve a time-bound and quantified target as much as the MDG topics of HIV/AIDS, tuberculosis or malaria do (see diagram below).

Mortality due to Occupational Diseases and Accidents in Comparison to Other Major Topics

Order of Topics According to the Annual Number of Deaths at below Global Life Expectancy (70 Years)

Data sources: ILO 2014 and TUT et al. 2014; Global Burden of Disease (GBD) study 2015, 2014, 2012; WHO (Global Health Estimates 2014, i.a.); Black et al. 2013; Liu et al. 2015; Fischer-Walker et al. 2013[2]
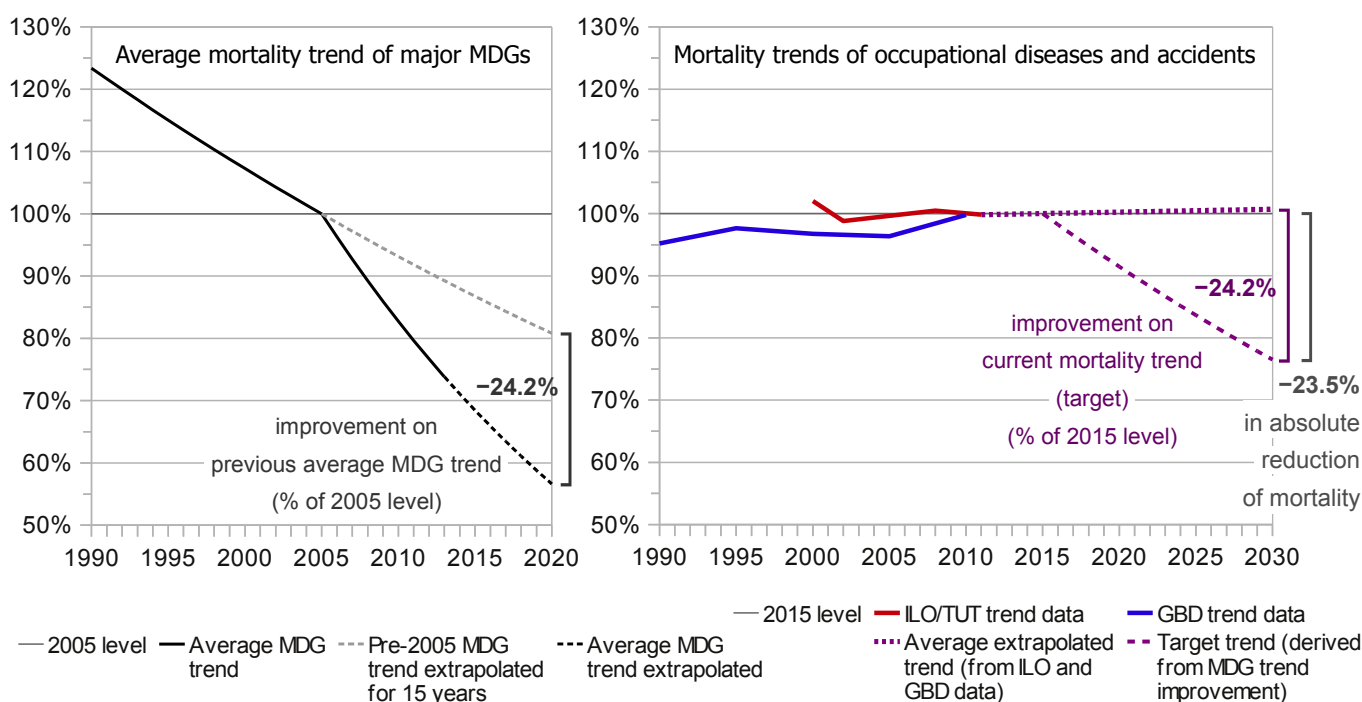
Occupational diseases and accidents *claim between 852 000 and 2.33 million lives each year* across all age-groups (GBD; TUT et al.; ILO – the large discrepancy between available estimates evolve from widespread under-reporting).[3] Creating a sustainable economy and decent jobs should include the aim to reduce workplace-related mortality.

Affected people: Approximately *473 million people per year* suffer an occupational accident or fall sick with an occupational disease (ILO).[4] They represent 6.79% of the world population.[5]

Economic losses: Occupational diseases and accidents cause losses of approximately *$567 billion per year* solely in the USA and Europe (Leigh; EU-OSHA).[6]

The *aspiration* of the SDGs should at least be as large as the achievements by the MDGs. Therefore, a target on occupational diseases and accidents should improve on current trends by 24.2% (2015–30):

Mortality Trends: MDGs Average, Occupational Diseases and Accidents, and Target Trend

Data sources: ILO 2014, 2011; TUT et al. 2014; IHME [GBD] 2013;[7] for the MDG trends: WHO; IHME [GBD]; UNICEF.[8]

The target is derived from the average trend improvement achieved by the MDGs, according to the trends before/after 2005 in number of deaths due to the MDG topics of HIV/AIDS, tuberculosis, malaria, undernutrition (in childhood), diarrhoeal diseases (related to unsafe water), maternal conditions and under-5 mortality: From 2005 to 2013, the MDGs improved on their previous trends by 15.4% of the 2005 level (percentage points). For a 15-year period, this equals 24.2% (assuming an exponential decrease, which results in a more moderate reduction than a linear decrease would do).[9]

In order to achieve the same trend change as the MDGs, target 8.8 could be extended as follows:

> *Protect labour rights and promote safe and secure working environments for all workers, includ-ing migrant workers, in particular women migrants, and those in precarious employment*, and, *by 2030, improve on current trends in the number of deaths from occupational diseases and accidents by one quarter of the 2015 level.*

Such a trend-related target accommodates countries with different trends and conditions.[10] If preferred, an absolute reduction could be defined instead (which equals a rather similar figure of 23.5%[11]):

> *… and reduce by 2030 the number of deaths from occupational diseases and accidents by one quarter.*

1   OWG 2014, p. 14.
2   ILO 2014, 33–34, and TUT et al. 2014, 13 (on occupational diseases and accidents in 2010/11; upper estimate, see for details note 3 below); GBD 2015, 2014 (on deaths in 2013; on viral hepatitis, acute and chronic types were included), 2012 (on deaths from occupational risks [lower estimate, see for details note 3 below], undernutrition and indoor and outdoor air pollution in 2010); WHO 2014 (on deaths in 2012; the WHO figure on AIDS deaths in 2012 is very similar to the latest UNAIDS figure on 2013); on undernutrition in childhood (in 2011) also: Black et al. 2013; on pneumonia also: Liu et al. 2015, 3 (on 2013), and Fischer-Walker et al. 2013 (on 2011); all age-distributions taken from GBD 2014, 2012 and WHO 2014; for details, see our previous proposal, Global2015 2015, 18–20.

   The diagram includes the global challenges with the highest number of deaths due to a limited access to vital resources such as food, clean water or health care (as far as data is available).

   The order of topics is determined by the level of impact in terms of death on people aged under 70 years, since the global life expectancy was 70 years in 2012 (WHO 2014g, life expectancy at birth, both sexes, global, 2012), and mortality at younger ages is considered a better indicator here for the severity of an issue than total mortality. It makes a difference whether people die at child age, at middle age (which has low mortality rates), or at high age (with high mortality rates anyway). However, this does not imply that mortality at higher ages should not be taken seriously. Therefore, data on all age groups is provided.

3   Latest estimates:
   - 852 000 deaths in 2010 attributable to occupational risks (95% uncertainty interval 660 000–1.06 million), including 481 000 deaths attributable to injuries, 219 000 to occupational particulate matter, gases and fumes, 118 000 to carcinogens and 33 700 to asthmagens (GBD 2012, 2239–2240)
   - 1.98 million fatal work-related diseases in 2011 and 353 000 fatal occupational accidents in 2010 (ILO 2014, 33–34; sum: review's calculations; based on TUT et al. 2014, 13 [same figures]).

4   About 313 million non-fatal work-related accidents in 2011 (range 271–353 million) (ILO 2014, 33; referring to occupational accidents leading to at least four days of absence from work), and 160 million people suffering from work-related diseases (ILO 2009, 54; ILO 2015; referring to cases of disease contracted as a result of exposure to risk factors arising from work; for example exposure to asbestos in the workplace); sum: review's calculation (assuming no overlap).

5   Review's calculation from above-mentioned ILO data, using WB 2014: world, 'Population (Total)', 2011 (6.965 billion).

6   Approximately $567 billion in annual losses (0.757% of global GDP) due to health care costs, compensation and lost work time, comprising:
   - $274 billion in the USA (Leigh 2011, 728, 740: $250 billion in 2007, in 2007$ [p. 744]) (adjusted to 2013$ using WB 2014, USA, 'Inflation, GDP deflator (annual %)')
   - $293 billion in 14 EU countries (EU-OSHA 1998, 31: ECU143 billion, in 1995ECU [p. 30]; sum: review's calculation) (converted to US$185 billion using NBH 2013, annual average, and adjusted to 2013$ using WB 2014, EU, 'Inflation, GDP deflator (annual %)').

   Sums and percentage: review's calculations (using WB 2014, World: 'GDP (current US$)', 2013).

7   ILO 2014, 33–34 (on 2011/10 [sum: review's calculation]); ILO 2011, 10 (table 1, total numbers of fatal accidents and diseases, 2001–08); TUT et al. 2014, 13 (table 5, fatal work-related diseases 2000–2011 [base for the timeline in the diagram] and fatal occupational accidents 1998–2010); IHME [GBD] 2013, search term: "Occupational risks Deaths Global by year" (1990–2010). All data refers to numbers of death.

   In the diagram, the absolute figures have been indexed to 100% in 2015, according to the extrapolation of their average trend (review's calculations). The trends of available ILO and GBD data were averaged and extrapolated as follows:

   For each trend series an exponential regression was calculated (least square method), resulting in an annual rate of change of −0.0805% for the ILO/TUT data (2000–2011) and +0.171% for the GBD data (1990–2010). From these annual rates the exponential change over the 15-year period from 2015 to 2030 was derived, leading to a decrease of 1.20% for the ILO/TUT data and to an increase of 2.59% for the GBD data. Example for the annual −0.0805% rate: $(1 + (-0.0805 / 100))^{15} - 1 = -0.0120 = -1.20\%$. Both trend results for 2030 were averaged to a mean of 0.697% (of the 2015 level; percentage points), which represents an annual average rate of change of 0.0463%; review's calculations, $((1 + 0.00697) / 1)^{(1 / 15)} - 1 = 0.0463\%$.

   This trend was depicted in the diagram as the average extrapolated trend (from ILO and GBD data). It also serves as the base trend for applying the desired trend improvement, as achieved on average by the MDGs.

8   Annual exponential change rates were averaged from WHO, GBD and UNICEF trend data (for a diagram showing the different MDG trends, and further details, see our latest proposal: Global2015 2015, 3):
   - HIV/AIDS: WHO 2014c (tabular data); global sums: review's calculations.
   - Tuberculosis: WHO 2014d (tabular data); global sums: review's calculations.
   - Malaria: WHO 2014e (tabular data), "Global".
   - Maternal conditions: WHO 2014f (tabular data) (ZIP archive, file Web release 6 May/2014PublicRelease_code_data/data/outputdata/Final.estimates/uncertainty.who.region.csv, categories "MatDth", World).
   - Undernutrition (in childhood), diarrhoeal diseases: IHME [GBD] 2013, which provides trend data by the GBD study and related diagrams for 1990, 1995, 2000, 2005 and 2010; search terms: "by year Global Deaths Undernutrition", "by year Global Deaths Diarrhea".

- Under-5 mortality: UNICEF 2014 (tabular data), sheet "Regional and Global Estimates", "Estimates of under-five deaths by UNICEF region", World, Median.

From this data the average MDG trend before/after 2005 was calculated, assuming exponential change. The average MDG trend only indicates the trend change before and after 2005; it does not reflect trend changes over the period 1990 to 2005. For the time frame before 2000, UN agencies do not provide mortality data on HIV/AIDS and malaria.

9 The total reductions mentioned here reflect exponential decreases; assuming a linear decrease would lead to much stronger reduction targets. Basing the long-term reduction on annual percentage reductions considers the general issue that after having reached a lower level, the same absolute reduction becomes more difficult to attain (Fukuda-Parr et al. [IPC/UNDP] 2010, 14). Total reductions based on annual rates of change may not be as easy to verify for the reader, but they are more moderate and realistic.

The trend change achieved by the MDGs between 2005 and 2013 (15.4% on average) is derived from the WHO, GBD and UNICEF mortality data referred to in note 8 above. It represents the difference between the total average reduction achieved by the MDGs from 2005 to 2013 (26.2%) and the reduction that would have occurred if the pre-2005 trends had continued to 2013 (10.8%). The difference is 15.4% of the 2005 level (or 15.4 percentage points).

This past change over 8 years can be extrapolated to a 15-year time frame in order to obtain figures for the SDG period from 2015 to 2030. The change of exponential trend is calculated as the difference in the results of two different mortality trends extrapolated by 2030; the trend before the MDGs showed effect (before 2005) and the trend since they showed effect (2005−2013):

Before-2005 MDG trend (−1.41% per year) extrapolated for 2015–30: $(1 + (−0.0141))^{15} − 1 = −19.2\%$

After-2005 MDG trend (−3.72% per year) extrapolated for 2015–30: $(1 + (−0.0372))^{15} − 1 = −43.4\%$

The difference is −24.2% of the starting level (or −24.2 percentage points), maintaining the average trend change achieved by the MDGs (review's calculations). Negative figures indicate a decrease (which represents an improvement).

For a 20-year time frame from 2010 to 2030, the resulting figure would instead be 28.4% of the 2010 level.

10 With a global target in terms of trend change, countries improve on their increasing or decreasing trends by the same ambition for change, considering their different conditions and capabilities. Countries do not need to achieve the same absolute reduction, which requires more effort if the starting trend is stagnant or even increasing. For details and a diagram, see section 3 of our latest proposal (Global2015 2015, 7–9).

For a 2010 base year, the figure would be 28.4% of the 2010 level (percentage points) (see note 9 above).

11 If the average trend of deaths from occupational diseases and accidents continues, it would result in a slight increase by 0.697% from 2015 to 2030 (see note 7 above). This increase by 2030 marks the baseline for the trend improvement by 24.2% of the 2015 level (percentage points). If instead the 2015 level is taken as the baseline, in order to define an absolute reduction, then the target is 0.697% − 24.2% = −23.5%. However, such an absolute reduction target does not address different country trends (see note 10 above).

The suggested wording assumes that for the SDG targets a general base year of 2015 will be set. For a 2010 base year, the figure for the absolute reduction would be −27.5% (including reductions achieved from 2010 to 2015).

Annotations

For numeric names the short scale is used: 1 billion = one thousand million = 10^9 = 1 000 000 000.

All numbers are shown to three significant digits, if available (no matter if and where the decimal point may appear). This keeps the rounding error below ±0.5%. Nevertheless, all calculations are based on unrounded numbers.

Sources

ILO 2009 – International Labour Organization: Rules of the Game; A brief introduction to International Labour Standards. Revised Edition 2009. (ISBN 978-92-2-122183-8) Geneva. (http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_108393.pdf).

ILO 2011 – International Labour Organization: XIX World Congress on Safety and Health at Work: Istanbul, Turkey, 11-15 September 2011. (http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_162662.pdf).

ILO 2015 – International Labour Organization: Safety and health at work. (No date of publication provided; retrieved in 2015.) (http://www.ilo.org/global/topics/safety-and-health-at-work/lang—en/index.htm).

All other sources can be found in our previous proposal (from p. 25):

Global2015 2015 – Global2015: Data-derived Recommendations for Post-2015 Targets. Berlin, 28 February 2015. (www.global2015.net/file/global2015sdg.pdf).