
**Sustainable development of
communities — Indicators for city
services and quality of life**

*Développement durable des collectivités — Indicateurs pour les
services urbains et la qualité de vie*





COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 City indicators	3
5 Economy	3
5.1 City's unemployment rate (core indicator).....	3
5.2 Assessed value of commercial and industrial properties as a percentage of total assessed value of all properties (core indicator).....	4
5.3 Percentage of city population living in poverty (core indicator).....	4
5.4 Percentage of persons in full-time employment (supporting indicator).....	5
5.5 Youth unemployment rate (supporting indicator).....	6
5.6 Number of businesses per 100 000 population (supporting indicator).....	6
5.7 Number of new patents per 100 000 population per year (supporting indicator).....	7
6 Education	7
6.1 Percentage of female school-aged population enrolled in schools (core indicator).....	7
6.2 Percentage of students completing primary education: survival rate (core indicator).....	8
6.3 Percentage of students completing secondary education: survival rate (core indicator).....	9
6.4 Primary education student/teacher ratio (core indicator).....	9
6.5 Percentage of male school-aged population enrolled in schools (supporting indicator).....	10
6.6 Percentage of school-aged population enrolled in schools (supporting indicator).....	11
6.7 Number of higher education degrees per 100 000 population (supporting indicator).....	11
7 Energy	12
7.1 Total residential electrical energy use per capita (kWh/year) (core indicator).....	12
7.2 Percentage of city population with authorized electrical service (core indicator).....	12
7.3 Energy consumption of public buildings per year (kWh/m ²) (core indicator).....	13
7.4 The percentage of total energy derived from renewable sources, as a share of the city's total energy consumption (core indicator).....	13
7.5 Total electrical energy use per capita (kWh/year) (supporting indicator).....	14
7.6 Average number of electrical interruptions per customer per year (supporting indicator).....	14
7.7 Average length of electrical interruptions (in hours) (supporting indicator).....	15
8 Environment	16
8.1 Fine particulate matter (PM2.5) concentration (core indicator).....	16
8.2 Particulate matter (PM10) concentration (core indicator).....	16
8.3 Greenhouse gas emissions measured in tonnes per capita (core indicator).....	17
8.4 NO ₂ (nitrogen dioxide) concentration (supporting indicator).....	18
8.5 SO ₂ (sulphur dioxide) concentration (supporting indicator).....	19
8.6 O ₃ (Ozone) concentration (supporting indicator).....	19
8.7 Noise pollution (supporting indicator).....	20
8.8 Percentage change in number of native species (supporting indicator).....	20
9 Finance	21
9.1 Debt service ratio (debt service expenditure as a percentage of a municipality's own-source revenue) (core indicator).....	21
9.2 Capital spending as a percentage of total expenditures (supporting indicator).....	22
9.3 Own-source revenue as a percentage of total revenues (supporting indicator).....	22
9.4 Tax collected as a percentage of tax billed (supporting indicator).....	23
10 Fire and emergency response	23
10.1 Number of firefighters per 100 000 population (core indicator).....	23

10.2	Number of fire related deaths per 100 000 population (core indicator)	24
10.3	Number of natural disaster related deaths per 100 000 population (core indicator)	24
10.4	Number of volunteer and part-time firefighters per 100 000 population (supporting indicator)	25
10.5	Response time for emergency response services from initial call (supporting indicator)	25
10.6	Response time for fire department from initial call (supporting indicator)	26
11	Governance	26
11.1	Voter participation in last municipal election (as a percentage of eligible voters) (core indicator)	26
11.2	Women as a percentage of total elected to city-level office (core indicator)	27
11.3	Percentage of women employed in the city government workforce (supporting indicator)	27
11.4	Number of convictions for corruption and/or bribery by city officials per 100 000 population (supporting indicator)	27
11.5	Citizens' representation: number of local officials elected to office per 100 000 population (supporting indicator)	28
11.6	Number of registered voters as a percentage of the voting age population (supporting indicator)	29
12	Health	29
12.1	Average life expectancy (core indicator)	29
12.2	Number of in-patient hospital beds per 100 000 population (core indicator)	30
12.3	Number of physicians per 100 000 population (core indicator)	30
12.4	Under age five mortality per 1 000 live births (core indicator)	31
12.5	Number of nursing and midwifery personnel per 100 000 population (supporting indicator)	32
12.6	Number of mental health practitioners per 100 000 population (supporting indicator)	32
12.7	Suicide rate per 100 000 population (supporting indicator)	33
13	Recreation	33
13.1	Square meters of public indoor recreation space per capita (supporting indicator)	33
13.2	Square meters of public outdoor recreation space per capita (supporting indicator)	34
14	Safety	35
14.1	Number of police officers per 100 000 population (core indicator)	35
14.2	Number of homicides per 100 000 population (core indicator)	36
14.3	Crimes against property per 100 000 (supporting indicator)	36
14.4	Response time for police department from initial call (supporting indicator)	37
14.5	Violent crime rate per 100 000 population (supporting indicator)	37
15	Shelter	38
15.1	Percentage of city population living in slums (core indicator)	38
15.2	Number of homeless per 100 000 population (supporting indicator)	39
15.3	Percentage of households that exist without registered legal titles (supporting indicator)	39
16	Solid waste	39
16.1	Percentage of city population with regular solid waste collection (residential) (core indicator)	39
16.2	Total collected municipal solid waste per capita (core indicator)	40
16.3	Percentage of the city's solid waste that is recycled (core indicator)	41
16.4	Percentage of the city's solid waste that is disposed of in a sanitary landfill (supporting indicator)	42
16.5	Percentage of the city's solid waste that is disposed of in an incinerator (supporting indicator)	43
16.6	Percentage of the city's solid waste that is burned openly (supporting indicator)	43
16.7	Percentage of the city's solid waste that is disposed of in an open dump (supporting indicator)	44
16.8	Percentage of the city's solid waste that is disposed of by other means (supporting indicator)	44

16.9	Hazardous Waste Generation per capita (tonnes) (supporting indicator)	45
16.10	Percentage of the city's hazardous waste that is recycled (supporting indicator)	46
17	Telecommunication and innovation	47
17.1	Number of internet connections per 100 000 population (core indicator)	47
17.2	Number of cell phone connections per 100 000 population (core indicator)	47
17.3	Number of landline phone connections per 100 000 population (supporting indicator)	48
18	Transportation	48
18.1	Kilometres of high capacity public transport system per 100 000 population (core indicator)	48
18.2	Kilometres of light passenger public transport system per 100 000 population (core indicator)	49
18.3	Annual number of public transport trips per capita (core indicator)	49
18.4	Number of personal automobiles per capita (core indicator)	50
18.5	Percentage of commuters using a travel mode to work other than a personal vehicle (supporting indicator)	50
18.6	Number of two-wheel motorized vehicles per capita (supporting indicator)	51
18.7	Kilometres of bicycle paths and lanes per 100 000 population (supporting indicator)	52
18.8	Transportation fatalities per 100 000 population (supporting indicator)	52
18.9	Commercial air connectivity (number of non-stop commercial air destinations) (supporting indicator)	53
19	Urban planning	53
19.1	Green area (hectares) per 100 000 population (core indicator)	53
19.2	Annual number of trees planted per 100 000 population (supporting indicator)	54
19.3	Areal size of informal settlements as a percentage of city area (supporting indicator)	54
19.4	Jobs/housing ratio (supporting indicator)	55
20	Wastewater	56
20.1	Percentage of city population served by wastewater collection (core indicator)	56
20.2	Percentage of the city's wastewater that has received no treatment (core indicator)	56
20.3	Percentage of the city's wastewater receiving primary treatment (core indicator)	57
20.4	Percentage of the city's wastewater receiving secondary treatment (core indicator)	57
20.5	Percentage of the city's wastewater receiving tertiary treatment (core indicator)	58
21	Water and sanitation	59
21.1	Percentage of city population with potable water supply service (core indicator)	59
21.2	Percentage of city population with sustainable access to an improved water source (core indicator)	59
21.3	Percentage of population with access to improved sanitation (core indicator)	60
21.4	Total domestic water consumption per capita (litres/day) (core indicator)	60
21.5	Total water consumption per capita (litres/day) (supporting indicator)	61
21.6	Average annual hours of water service interruption per household (supporting indicator)	62
21.7	Percentage of water loss (unaccounted for water) (supporting indicator)	63
22	Reporting and record maintenance	63
Annex A (informative) City indicators		64
Annex B (informative) Profile indicators		69
Bibliography		71

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 268, *Sustainable development in communities*.

Introduction

Cities need indicators to measure their performance. Existing indicators are often not standardized, consistent, or comparable over time or across cities.

As part of a new series of International Standards being developed for a holistic and integrated approach to sustainable development and resilience, this set of standardized indicators provides a uniform approach to what is measured, and how that measurement is to be undertaken. As a list, it does not provide a value judgement, or threshold or a target numerical value for the indicators.

Conformance with this standard does not confer a status in this regard. A city which conforms to this standard in regards to measurement of indicators for city services and quality of life may only claim compliance to that effect.

These indicators can be used to track and monitor progress on city performance. In order to achieve sustainable development, the whole city system needs to be taken into consideration. Planning for future needs must take into consideration current use and efficiency of resources in order to better plan for tomorrow.

The indicators and associated test methods in this International Standard have been developed in order to help cities:

- a) measure performance management of city services and quality of life over time;
- b) learn from one another by allowing comparison across a wide range of performance measures; and,
- c) share best practices.

NOTE It is acknowledged that cities may not have direct influence or control over factors governing some of these indicators, but the reporting is important for meaningful comparison and provides a general indication of service delivery and quality of life within a city.

The indicators in this International Standard have been selected to make reporting as simple and inexpensive as possible, and therefore reflect an initial platform for reporting. Further development of indicators to support sustainable development and resilience in cities is on-going in TC268.

The indicators are structured around themes. Recognizing the differences in resources and capabilities of cities worldwide, the overall set of indicators for city performance has been divided into “core” indicators (those implementing this International Standard shall follow) and “supporting” indicators, (those implementing this International Standard should follow). Both core and supporting indicators are listed in [Annex A, Table A.1](#). In addition, profile indicators, which provide basic statistics and background information to help cities determine which cities are of interest for comparisons, are included in [Annex B, Table B.1](#), as a reference.

In this International Standard, the following verbal forms are used:

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” indicates a permission;
- “can” indicates a possibility or a capability.

Sustainable development of communities — Indicators for city services and quality of life

1 Scope

This International Standard defines and establishes methodologies for a set of indicators to steer and measure the performance of city services and quality of life. It follows the principles set out and can be used in conjunction with ISO 37101:—, *Sustainable development in communities — Management systems — General principles and requirements*, when published, and other strategic frameworks.

This International Standard is applicable to any city, municipality or local government that undertakes to measure its performance in a comparable and verifiable manner, irrespective of size and location.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 37101:—, *Sustainable development and resilience of communities — Management systems — General principles and requirements*

ISO 1996-2:—, *Acoustics Description, measurement and assessment of environmental noise — Part 2: Determination of environmental noise levels*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 37101, and the following apply.

3.1 city

urban community falling under a specific administrative boundary, commonly referred to as a city, municipality or local government

3.2 indicator

a quantitative, qualitative or descriptive measure

[SOURCE: ISO 15392:2008, 3.14]

[SOURCE: ISO 15392:2008, 3.14]

Note 1 to entry: Indicators in this standard are divided into:

a) core indicators: indicators that are required to demonstrate performance in the delivery of city services and quality of life.

b) supporting indicators: indicators that are recommended to demonstrate performance in the delivery of city services and quality of life.

c) profile indicators: indicators that provide basic statistics and background information to help cities determine which cities are of interest for peer comparisons. Profile indicators are used as an informative reference.

**3.3
full-time enrolment**

enrolment in school for every full school day in a week over the entire school year

**3.4
natural disaster**

a natural event such as a flood, earthquake, or hurricane that causes great damage or loss of life

**3.5
part-time enrolment**

enrolment in school for at least every half-day in a week over the entire school year or equivalent on a weekly basis

EXAMPLE A student is counted as enrolled part-time if he/she is enrolled in school for every half-day in a week, but is not counted as enrolled if he/she is only enrolled for 0,25 of a day.

**3.6
primary education**

elementary school

education that is considered to be the first stage of 'basic education'

Note 1 to entry: Primary education typically covers six years of full-time schooling with the legal age of entrance normally being not younger than 5 years or older than 7 years. Primary education typically lasts until age 10 to 12. Primary education refers to children ages 5-12 years or 1st grade through 5th or 6th grade as defined by local education systems.

[SOURCE: UNESCO Institute for Statistics, UOE data collection on education systems, 10.1]

**3.7
secondary education**

education that is considered to be the second stage of basic education and marks the end of compulsory education where it exists

Note 1 to entry: Students usually enter between age 10 and 13 (age 12 being the most common). Secondary education usually ends 12 or 13 years after the beginning of primary education (or around age 18); however, systems can range between ending 11 to 14 years after beginning school (or around age 17 to 20). Secondary education also refers to 6th grade (or 7th grade) to 12th grade as defined by local education systems.

**3.8
tertiary education**

education provided by universities and other higher education institutions following secondary education

**3.9
hazardous waste**

waste that is potentially harmful to human beings, property or the environment

[SOURCE: ISO 18113-1:2009, 3.22]

**3.10
solid waste**

non-soluble, discarded solid materials, including sewage sludge, municipal garbage, industrial wastes, agricultural refuse, demolition wastes and mining residues

**3.11
vascular plants (tracheophytes)**

plants that can internally transport water and food

Bibliography

- [1] STATISTICS CANADA. Police Administration Survey 2011 [updated 2011-12-12]. Available from: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3301&lang=en&db=imdb&adm=8&dis=2>
- [2] STATISTICS CANADA. Uniform Crime Reporting Survey [updated 2012-07-23]. Available from: <http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3302&lang=en&db=imdb&adm=8&dis=2>
- [3] CENTRAL INTELLIGENCE AGENCY. CIA Factbook 2012 [ISSN 1552-8133. The online Factbook is updated weekly]. Available from: <https://www.cia.gov/library/publications/the-world-factbook>
- [4] UNESCO. Education Indicator Technical Guidelines 2012. Available from: http://www.uis.unesco.org/ev.php?URL_ID=5455&URL_DO=DO_TOPIC&URL_SECTION=201
- [5] US ENERGY INFORMATION ADMINISTRATION. Voluntary Reporting of Greenhouse Gases Program [Section 1605 Text. Program suspended as of May 2011]. Available from: <http://www.eia.doe.gov/oiaf/1605/frntvrgg.html>
- [6] EUROPEAN COMMISSION. LANDSIS g.e.i.e. Urban Audit - Methodological Handbook. 2004. Luxembourg: European Communities. Retrieved from P:\EU Urban Audit
- [7] OECD. Health at a Glance: Europe 2012. [ISBN 9789264183605. Published on November 16, 2012]. Available from: <http://www.oecd.org/health/healthataglanceeurope.htm>
- [8] IAEA. *Energy Indicators for Sustainable Development: Guidelines and Methodologies*. IAEA, Vienna, 2005
- [9] Intergovernment Panel on Climate Change IPCC Guidelines for National Greenhouse Gas Inventories [Revised in 1996]. Available from: <http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.htm>
- [10] LandGEM and other EPA models: <http://www.epa.gov/ttnecatc1/products.html>
- [11] REPORTING U.C. (UCR) Program: <http://www.fbi.gov/ucr/ucr.htm>
- [12] STATISTICS W.H. *World Health Organization*. WHO, 2006
- [13] The Conference Board of Canada. Municipal Waste Generation [data current as of July 2011] Available from <http://www.conferenceboard.ca/hcp/details/environment/municipal-waste-generation.aspx>
- [14] UNIFORM CRIME REPORTS F.B.I. Available from: <http://www.fbi.gov/ucr/ucr.htm>.
- [15] Siemens/The Economist. European Green City Index: City Report - Stockholm. [23 November 200]. Available from: http://www.nwe.siemens.com/sweden/internet/se/press1/affarspress/affarspress/Documents/Siemens_EGCI_Executive_summary_final.pdf.
- [16] UNITED NATIONS. Indicators of Sustainable Development: Guidelines and Methodologies [ISBN 92-0-116204-9. April 2005. STI/PUB/1222]. Available from: http://www-pub.iaea.org/MTCD/publications/PDF/Pub1222_web.pdf
- [17] UNITED NATIONS STATISTICS DIVISION. Environment Glossary [Published in 1997; Updated in 2001]. Available from: <http://unstats.un.org/unsd/environmentgl/default.asp>
- [18] EXPERT CONSULTATION W.H.O. Health Indicators of sustainable water [17-18 May 2012]. Available from: http://www.who.int/hia/green_economy/indicators_water.pdf

- [19] INTERNATIONAL DEVELOPMENT ASSOCIATION. Sanitation and Water Supply - Improving Services for the Poor. The World Bank. Washington D.C. Available from: <http://siteresources.worldbank.org/IDA/Resources/IDA-Sanitation-WaterSupply.pdf>
- [20] UNITED NATIONS ENVIRONMENT PROGRAM. UNEP - Agenda 21 United Nations Conference on Environment & Development <http://www.unep.org/documents.multilingual/default.asp?documentid=52>
- [21] Aalborg Commitments. Available from: <http://www.aalborgplus10.dk/default.aspx?m=2&i=42>
- [22] Millennium Development Goals [UN Millennium Summit 2000] <http://www.un.org/millenniumgoals/>
- [23] International Solid Waste Association <http://www.iswa.org/>
- [24] ISO/DTR 14069:—, *Greenhouse gases (GHG) — Quantification and reporting of GHG emissions for organizations (Carbonfootprint of organization) — Guidance for the application of ISO 14064-1*
- [25] ISO/PAS 2070:2012 *Specification for the assessment of greenhouse gas emissions of a city by direct plus supply chain, and consumption-based approaches [BSI Draft on Public Consultation as of June 2012]*
- [26] MULTIPLE INDICATOR CLUSTER SURVEYS. MICS on Methodology for child mortality estimation http://www.unicef.org/media/files/BACKGROUND_NOTE_ON_METHODODOLOGY_FOR_UNDER-FIVE_MORTALITY_ESTIMATION_web.pdf
- [27] UK Home Office's Recorded Crime Statistics. Available from: <http://www.homeoffice.gov.uk/publications/science-research-statistics/research-statistics/crime-research/crime-stats-2002-2010>
- [28] Official Airline Guide (OAG). Available from: <http://www.oag.com/>
- [29] US EPA Reference Method 40 CFR 50, Appendix J. Available from: <http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol2/pdf/CFR-2011-title40-vol2-part50-appJ.pdf>
- [30] THE QUALITY ASSURANCE HANDBOOK FOR AIR POLLUTION MEASUREMENT SYSTEMS. Volume II <http://www.epa.gov/ttn/amtic/files/ambient/qaqc/2-11meth.pdf>
- [31] ICLEI HEAT SOFTWARE. Available from: <http://heat.iclei.org>
- [32] CITIES FOR CLIMATE PROTECTION CAMPAIGN. Available from: <http://www.iclei.org/?id=11012>
- [33] UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME. 2006) p. 27 Global monitoring, <http://www.unhabitat.org/categories.asp?catid=9>
- [34] Poverty country threshold www.worldbank.org (search for PovertyNet) or access it directly at www.poverty.net
- [35] ONTARIO MUNICIPAL BENCHMARKING INITIATIVE. OMBI www.ombi.ca
- [36] ISO 1996-2:1987, *Description and measurement of environmental noise — Part 2: Guide to the acquisition of data pertinent to land use*
- [37] ISO/TS 15666:2003, *Acoustics — Assessment of noise annoyance by means of social and socio-acoustic surveys*
- [38] Cities Environment Reports on the Internet. Available from: www.ceroi.net
- [39] ISO 26000:2010, *Guidance on social responsibility*
- [40] CITIES ENVIRONMENTAL REPORTS ON THE INTERNET. CEROI <http://www.ceroi.net/>

- [41] United Nations Centre for Human Settlements (UN-Habitat) <http://www.unhabitat.org/categories.asp?catid=9>
- [42] A Participatory Approach to Monitoring Slum Conditions http://www.itc.nl/library/papers_2005/conf/sliuzas_par.pdf
- [43] QUICKBIRD DATA – HOFFMAN ET AL. http://www.commission4.isprs.org/obia06/Papers/05_Automated%20classification%20Urban/OBIA2006_Hofmann_et_al.pdf Accessed on: March 6, 2007
- [44] Reference Framework for Sustainable European Cities (RFSC) http://www.covenantofmayors.eu/news_en.html?id_news=436 <http://www.rfsc.eu/>
- [45] UN Convention on the Rights of the Child <http://www.unicef.ca/en/policy-advocacy-for-children/about-the-convention-on-the-rights-of-the-child>
- [46] Leipzig Charter on Sustainable European Cities http://www.eukn.org/E_library/Urban_Policy/Leipzig_Charter_on_Sustainable_European_Cities
- [47] Toledo Declaration http://www.eukn.org/News/2010/June/Ministers_of_Housing_and_Urban_Development_approve_the_Toledo_Declaration
- [48] MANAGEMENT CONSULTANTS B.M.A. Draft BMA Municipal Study 2011. Available from: <http://www.guelph.ca/uploads/finance//bmamunicipalstudy.pdf>.
- [49] Enterprise Saskatchewan - Performance Indicators for Saskatchewan's Economy [December 2010]. Available from: <http://www.enterprisesaskatchewan.ca/adx/asp/adxGetMedia.aspx?DocID=8e4247d7-76c2-4dd0-b294-32ef0954804b&MediaID=ea287104-d6dc-46e8-890b-a5877b37af5e&Filename=Performance+Indicators+for+Saskatchewan%27s+Economy+-+December+2010.pdf>.
- [50] GOVERNMENT OF ALBERTA MUNICIPAL AFFAIRS. Guide to property assessment and taxation in Alberta. Available from: http://www.municipalaffairs.alberta.ca/documents/as/AB_GuidePtyAssmt_finrev.pdf.
- [51] INTERNATIONAL LABOUR ORGANIZATION (ILO) - UNEMPLOYMENT. underemployment and inactivity indicators (KILM 9-13). Available from: <http://kilm.ilo.org/2011/download/kilm09EN.pdf>.
- [52] INTERNATIONAL LABOUR ORGANIZATION (ILO). Youth unemployment (KILM 10). Available from: <http://kilm.ilo.org/2011/download/kilm10EN.pdf>.
- [53] STATISTICS CANADA. A Brief Guide to the Business Register (BR) [July 2010]. Available from: http://www23.statcan.gc.ca/imdb-bmdi/document/1105_D2_T1_V3-eng.pdf.
- [54] WIKIPEDIA. Gini Coefficient [accessed 2013-02-13]. Available from: http://en.wikipedia.org/wiki/Gini_coefficient.
- [55] WORLD BANK. Measuring Inequality: Measuring Poverty [accessed 2013-02-13]. Available from: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0,,contentMDK:20238991~menuPK:492138~pagePK:148956~piPK:216618~theSitePK:430367,00.html>
- [56] WORLD BANK. Unemployment, total (% of total labor force). Available from: <http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS>.
- [57] YOUTH EMPLOYMENT NETWORK. Indicator 2: Youth Unemployment Rate [updated 2011-02-08]. Available from: <http://www.ilo.org/public/english/employment/yen/whatwedo/projects/indicators/2.htm>.
- [58] CENTER FOR DISEASE CONTROL AND PREVENTION. Global Water, Sanitation, & Hygiene (WASH): Assessing Access to Water & Sanitation [accessed 2013-02-06]. Available from: <http://www.cdc.gov/healthywater/global/assessing.html>.

- [59] United Nations Children's Fund. Series Metadata: Goal 7. Ensure Environmental Sustainability [accessed 2013-02-06]. Available from: <http://unstats.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=669>.
- [60] World Bank. Cape Verde [accessed 2013-02-06]. Available from: <http://data.worldbank.org/country/cape-verde>.
- [61] WORLD BANK. Improved Sanitation Facilities (% of Population with Access) [Chart] [accessed 2013-02-06]. Available from: <http://data.worldbank.org/indicator/SH.STA.ACSN>.
- [62] WORLD HEALTH ORGANIZATION. Population using improved sanitation facilities (%). Available from: http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=9.
- [63] ACE ELECTORAL KNOWLEDGE NETWORK. Guiding Principles of Voter Registration [accessed 2013-02-14]. Available from: <http://aceproject.org/ace-en/topics/vr/vr20>.
- [64] IDEA (INTERNATIONAL INSTITUTE FOR DEMOCRACY AND ELECTORAL ASSISTANCE). Glossary [accessed 2013-02-14]. Available from: <http://www.idea.int/vt/glossary.cfm#registration>.
- [65] SARACENO B., & SAXENA S. Mental health resources in the world: results from Project Atlas of the WHO. *World Psychiatry*. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1489823/>.
- [66] THE WORLD HEALTH ORGANIZATION. Facts on Mental Health. Available from: http://www.who.int/features/factfiles/mental_health/mental_health_facts/en/index9.html.
- [67] THE WORLD HEALTH ORGANIZATION. Mental Health and Development: Targeting People with Mental Health Conditions as a Vulnerable Group. Available from: http://www.who.int/mental_health/policy/mhtargeting/development_targeting_mh_summary.pdf.
- [68] THE WORLD HEALTH ORGANIZATION. Mental Health: a state of well-being. Available from: http://www.who.int/features/factfiles/mental_health/en/index.html.
- [69] THE WORLD HEALTH ORGANIZATION. Mental Health Atlas 2011. Available from: http://whqlibdoc.who.int/publications/2011/9799241564359_eng.pdf.
- [70] THE WORLD HEALTH ORGANIZATION. What is mental health? Available from: <http://www.who.int/features/qa/62/en/index.html>.
- [71] THE WORLD HEALTH ORGANIZATION. WHO Mental Health Gap Action Programme (mhGAP). Available from: http://www.who.int/mental_health/mhgap/en/index.html.
- [72] USER'S MANUAL FOR THE CITY BIODIVERSITY INDEX. <http://www.cbd.int/help/error404.shtml?aspxerrorpath=/authorities/doc/User's%20Manual-for-the-City-Biodiversity%20Index27Sept2010.pdf>
- [73] ENCYCLOPEDIA BRITANNICA. (2013). Bird. Available from: <http://www.britannica.com/EBchecked/topic/66391/bird>
- [74] OXFORD DICTIONARIES. (2013). Birds. Available from: <http://oxforddictionaries.com/definition/english/bird?q=bird>.
- [75] ENCYCLOPEDIA BRITANNICA. (2013). Butterfly. Available from: <http://www.britannica.com/EBchecked/topic/86657/butterfly>.
- [76] OXFORD DICTIONARIES. (2013). Butterfly. Available from: <http://oxforddictionaries.com/definition/english/butterfly>.
- [77] ENCYCLOPEDIA BRITANNICA. (2013). Definition of Vascular Plants. Available from: <http://www.britannica.com/EBchecked/topic/463192/plant/66072/Vascular-plants>.
- [78] Air quality and health facts. World Health Organization. Available from: <http://www.who.int/mediacentre/factsheets/fs313/en/index.html>

- [79] Ozone. Ontario Ministry of the Environment. Available from: <http://www.airqualityontario.com/science/pollutants/ozone.php>
- [80] OZONE AND FINE PARTICULATE MATTER AIR QUALITY INDICATORS. Environment Canada. Available from: <http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=9F4EBF11-1&offset=4&toc=show>
- [81] Conversion factors. Aarhus Universitet. Available from: http://www2.dmu.dk/AtmosphericEnvironment/Expost/database/docs/PPM_conversion.pdf
- [82] ISO 14064-1:2006, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- [83] ISO 14064-2:2006, *Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*
- [84] ISO 14064-3:2006, *Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*
- [85] USER'S MANUAL FOR THE CITY BIODIVERSITY INDEX. Available at: <http://www.cbd.int/authorities/doc/User%27s%20Manual-for-the-City-Biodiversity-Index27Sept2010.pdf>
- [84] WHO – Life expectancy definition http://www.who.int/topics/life_expectancy/en/
- [85] ISO 15392:2008, *Sustainability in building construction — General principles*