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Quality of life and international standardization in the field of sustainable development of communities

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Special Session

S_ZB Economics of Quality as a Basis for Sustainable Development of Communities

**Quality of life and international standardization in the field of sustainable
development of communities**

JEL: O5, R1

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Keywords: *quality of life, globalization, resilience, global city indicators, sustainable development, quality management system.*

Summary: *Standardization in the field of Sustainable Development in Communities include requirements, guidance and supporting techniques and tools to help all kind of communities, their related subdivisions and interested and concerned parties become more resilient and sustainable and demonstrate achievements in improving the quality of life. The proposed series of International Standards will thus encourage the development and implementation of holistic, cross-sector and area-based approaches to sustainable development in communities.*

Public authorities, international organizations and non-profit associations are nowadays working on identifying and solving the problems of various communities (i.e., towns, villages and other administrative-territorial units) through the development of specialized programs.

Sustainable development projects in rural or urban areas are flourishing all around the world today. Nevertheless stakeholders are confused because there are no international consensus on the evaluation of the above projects and therefore there is a need in the development of the international standards on sustainable development and resilience in communities.

In order to efficiently organize the works on benchmarking and standardization in the field of sustainable development the relevant technical committee has been established: ISO/TC 268 “Sustainable development in communities”.

ISO/TC 268 will give the umbrella of standards for an international consensus on principles and approaches that each “community” will be able to replicate and adapt to its own needs and specificities.

As illustrated below, these standards will help communities and cities become more sustainable, smart and resilient.

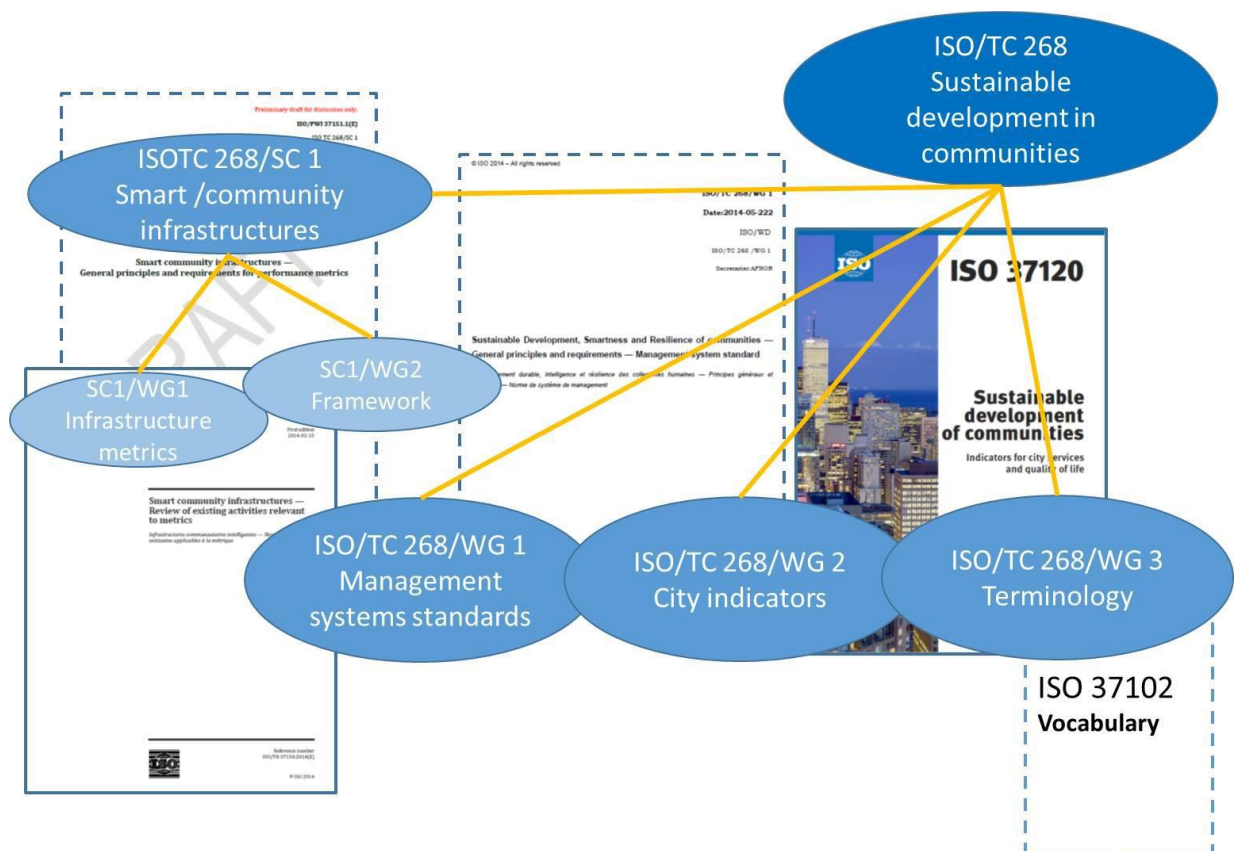


Figure 1 — ISO/TC 268 series of standards and deliverables

ISO 37101 – Management Systems

Sustainable development projects in rural or urban areas are flourishing all around the world. Stakeholders are confused because there is no international consensus on the evaluation of community projects from cradle to grave, hence the need for International Standards on sustainable development and resilience in communities.

A priority will be to develop a common language for all stakeholders and thereby contribute to greater clarity and harmonization in this field. This is why a management system standard is vital. ISO/TC 268 will thus focus on the development of a management system standard, **ISO 37101 ‘Sustainable development and resilience of communities – Management systems – General principles and requirements’**.

The future ISO 37101 management system standard will serve as a basis for the development of specific implementation standards tailored to communities. These may be as diverse as a business centre in an industrialized country, a rural area in a developing country, a mountain area, a seaside resort or even an indigenous or nomadic community.

ISO 37101 is being developed by ISO/TC 268/WG 1, *Management Systems Standards*

This international standard should establish the requirements of a management system for sustainable development, smartness and resilience of communities, taking legal and other requirements and relevant information into consideration, in order to :

- manage sustainability, smartness and resilience of communities, while taking into account the specificities of the territory those communities relate to ;
- improve the contribution of communities to sustainable development ;
- assess the performance of communities in sustainable development and their level of smartness and of resilience.

While the challenge of sustainable development is global, the strategies for achieving it at the community level are, to a large extent, local and may therefore differ in context and content from region to region. Hence, strategies reflect the context, preconditions, priorities and needs, particularly in the social environment, e.g. social equity, cultural identity and traditions, heritage, human health, safety and comfort, and social infrastructure.

The management of sustainable development, smartness and resilience of communities encompasses a wide range of issues, e.g. issues related to the economic, social and natural

environment of communities and their interactions. Those issues may have strategic, operational and competitive implications.

As all management system standards, this standard is based on a PDCA approach, which can briefly be described as follows :

- **PLAN:** establish objectives and processes necessary to deliver results in accordance with communities purposes ;
- **DO:** implement processes and achieve objectives ;
- **CHECK:** monitor and measure processes against community policy, objectives, legal and other requirements, and report the results ;
- **ACT:** take necessary actions to improve performance.

As described in the figure below, the content of this standard reflects the adoption and the adaptation of a PDCA approach to the management of sustainable development, smartness and resilience of communities.

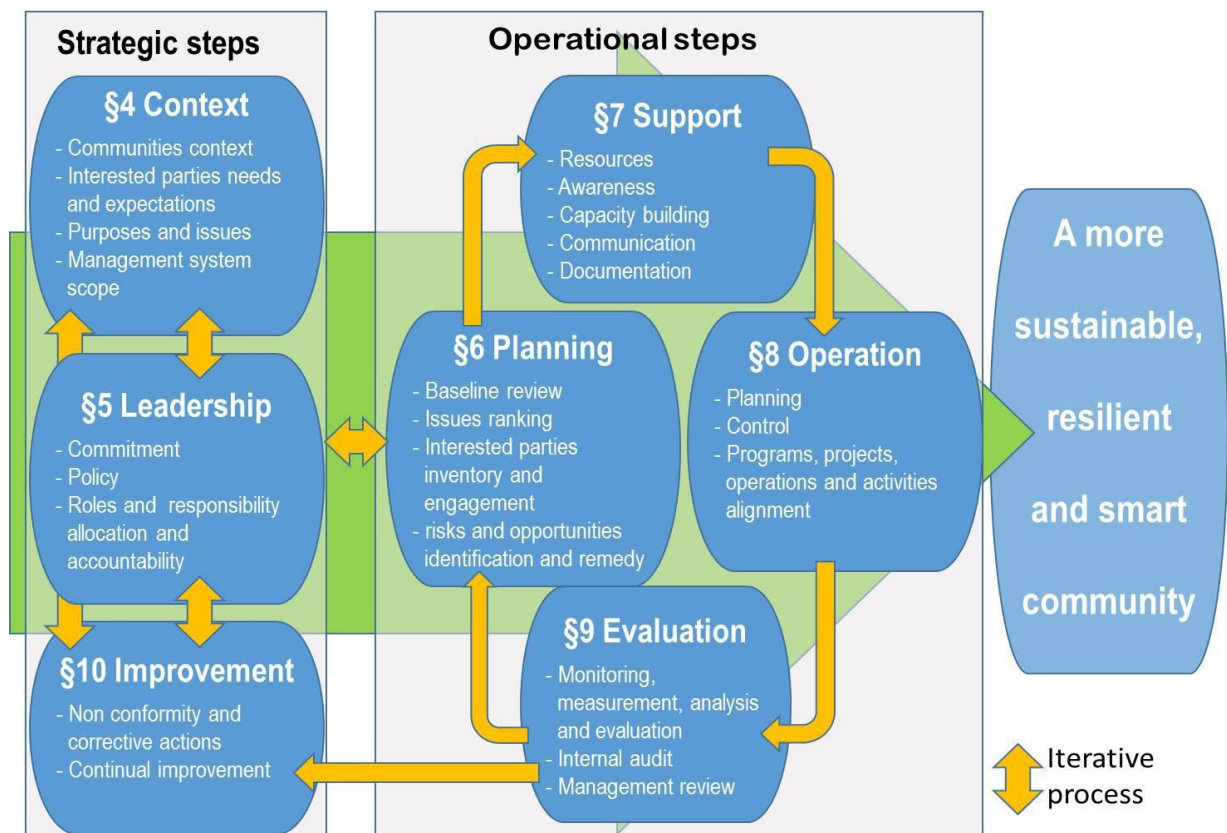


Figure 1 — ISO 37101 illustrated table of contents

Strategic steps are iterative, while operational steps are sequential. It is their combined implementation that helps communities become more sustainable, resilient and smart, as illustrated by the green arrow

The successful implementation of the ISO 37101 Standard may be used by communities to show interested parties that an appropriate management system is in place and to encourage them to become proactive. It will help communities elaborate strategies for sustainable development, smartness and resilience as well as objectives and processes to achieve related commitments and take action as needed to improve their performance and demonstrate their conformity to this International Standard.

ISO 37101 (which is going to be released at 2016) will also help communities develop holistic and integrated strategies that meet the needs of interested parties, depart from business as usual silo approaches, establish collaboration across sectors and facilitate communication.

More specifically, it will contribute to, e.g. :

- generate and build up consensus on sustainable development and resilience of communities;
- improve the sustainability of projects, programmes and activities conducted under the direct responsibility of communities or on the territory they relate to ;
- evolve cross sector, multidisciplinary, whole life value and global costing approaches;
- foster synergies ;
- increase efficiency and attractiveness.

ISO 37120 – Indicators for city services

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

International Organization for Standards has announced an ISO standard that applies strictly to city performance. The document -- known as **ISO 37120:2014 "Indicators for city services and quality of life"**-- establishes a set of open data indicators to measure the delivery of

city services and quality of life. It defines common methodologies that cities can use to measure their performance in their living areas.

This International Standard is designed to assist cities in steering and assessing the performance management of city services and all service provisions as well as quality of life. It considers sustainability as its general principle and resilience as a guiding concept in the development of cities.

ISO 37120:2014 is intended to be applicable to any city, municipality or local government regardless of size, location, or level of development. Using standardized indicators helps to make the performance of these cities comparable. A key consideration is that the methodology for measurement of indicators is consistent and verifiable. In the future these indicators could also be used with ISO37101:

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.

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.

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” and “supporting” indicators. In addition, profile indicators, which provide basic statistics and background information to help cities determine which cities are of interest for comparisons, are also included as a reference. All 100 indicators shall be compiled on an annual basis.

The core and supporting indicators are classified into themes according to the different sectors and services provided by a city. The classification structure is used solely to denote the services and area of application of each type of indicator when reported on by a city. This classification has no hierarchical significance and is organized alphabetically according to themes.

Indicators under each theme, where possible, were selected and paired on the basis of input and outcome indicators for further contextual analysis.

When interpreting the results of a particular service area, it is important to review the results of multiple types of indicators across themes; to focus on a single indicator can lead to a distorted or incomplete conclusion. Elements of aspiration must also be taken into consideration in the analysis.

Users may also consider the following aspects which shall be clearly stated in the report and justified: indicators can be aggregated to larger administrative areas (ex. region, metropolitan areas etc.); since some indicators are indirectly linked to sustainability, there is a need to consider the resource efficiency of a city; indicators can be grouped together for analysis when taking into consideration holistic characteristics of a city; and, this set of indicators may be complemented by other indicator sets in order to have a more comprehensive holistic approach to analysis on sustainability.

City Indicators – General themes

1. Economy
2. Education
3. Energy
4. Environment
5. Finance
6. Fire and emergency response
7. Governance
8. Health
9. Recreation
10. Safety
11. Shelter
12. Solid waste

13. Telecommunication and innovation
14. Transportation
15. Urban planning
16. Wastewater
17. Water and Sanitation

Example of “Safety” indicators

10 Safety

- 10.1 Number of police officers per 100 000 population
- 10.2 Number of homicides per 100 000 population
- 10.3 Crimes against property per 100 000
- 10.4 Response time for police department from initial call
- 10.5 Violent crime rate per 100 000 population

Example of the calculation methodology

10.3 Crimes against property per 100 000

The number of crimes against property shall be calculated as the total number of all property crimes reported (numerator) divided by one 100 000th of the city’s total population (denominator). The result shall be expressed as the number of property crimes per 100 000 population.

Crimes against property shall be defined as all offences involving the unlawful taking or destruction of property, but without the threat of use of force against a person.

Crime against property should include: burglary; larceny-theft; motor vehicle theft; and, arson.

ISO 37150 & ISO 37151 – smart community infrastructure

ISO/TC 268 includes a subcommittee dealing with the urban infrastructures, SC 1, “Smart community infrastructures”, with two preliminary items already included in its work program: ISO/TR 37150, a technical report on smart urban infrastructures around the world, which will serve as a basis for the development of the future ISO/TS 37151 standard on harmonized metrics for benchmarking smartness of infrastructures.

“Smart community infrastructure”: community infrastructure with enhanced technological performance that is designed, operated and maintained to contribute to sustainable development and resilience of the community.

Community infrastructures include energy, water, transportation, waste and ICT. So the proposed standards will focus on technical aspects of community infrastructures.

The general principles and requirements of these documents are applicable to communities of any size that are planning, commissioning, managing and assessing all or any element of its community infrastructures. However, the selection and the importance of metrics or (key) performance indicators of community infrastructures is a result of the application of these standards and depends on the characteristics of each community.

Communities have various goals to achieve, including e.g. quality of life, economic growth, poverty reduction, antipollution, congestion mitigation.

Community infrastructures – energy, water, transportation, waste, information and communications technology (ICT), etc. – are fundamental to support the operations and activities of communities. Investment in community infrastructures is an important enabler for communities in achieving the internationally recognized community goals, e.g. the United Nations Millennium Development Goals (MDGs) and promoting pro-poor growth. The demand for community infrastructures will continue to expand significantly in the decades ahead, driven by major factors of change, such as population growth and urbanization. According to the Organization for Economic Co-operation and Development (OECD) report "Infrastructure 2030," total cumulative infrastructure requirements amount to about USD 53 trillion over 2010/2030.

It has long been argued that human activity is surpassing the capacity of the Earth. The imperative for further infrastructure (i.e. accelerated population growth) sometimes conflicts with a path to sustainability. As a result, there is a need for community infrastructures to contribute to sustainability and resilience of communities more effectively and efficiently by balancing multiple perspectives and integrating decision making. Such solutions are often referred to as “smart.” A number of plans and projects to build “smart cities” are currently underway. In addition, there are increases in international trade for community infrastructure products and services including solution-providing services.

ISO/TR 37150 “Smart community infrastructures -Review of existing activities relevant to metrics” reviews existing activities relevant to metrics for "smart" community

infrastructures and provides directions for further standardization. This Technical Report discusses metrics which is designed to help buyers to evaluate technical performances of community infrastructure products and services for procurement and, through the development of future technical standards in this area, may additionally be used in real-time monitoring for the operation of an existing community infrastructure.

ISO/TS 37151" Smart community infrastructures - Principles and requirements for performance metrics" gives general principles for and specifies requirements for the: definition, identification, optimization and harmonization of community infrastructure performance metrics, and gives recommendations for analysis, including: smartness, interoperability, synergy, resilience , safety and security of community infrastructures.

ISO 37151 will allow buyers (including developing countries) and providers (including small and medium sized enterprises) of community infrastructure products and services to communicate with each other more easily.

For example, this Technical Specification can be used as a support tool for owners, e.g. community managers:

- to align the relationship between community issues and community infrastructure performances;
- to prioritize investments in new community infrastructure and areas for improvement in existing community infrastructures among the different types of community infrastructures;
- to identify metrics applied for the purpose of measurements of dynamic data that allow management and feedback to improve the community in terms of utilization and sustainability.

This Technical Specification can also be used as a facilitation tool for both owners and operators, and providers of community infrastructure products and services:

- to serve as a framework for discussion on the performances of community infrastructures to be introduced;
- to provide a common language among multiple stakeholders by helping identify performance characteristics of community infrastructures to contribute to community priorities when they discuss community issues and the introduction or improvement of community infrastructures;

- to help owners and operators compare multiple proposals of the introduction or improvement of community infrastructure products and services from multiple providers in terms of performances.

ISO deliverables are an important source of technological information. ISO deliverables help governments and businesses of all shapes and sizes to work more efficiently, increase productivity, increase credibility and confidence, and access new markets. For example, as they define the performances that products and services have to meet in the global markets, ISO deliverables help developing countries or small and medium-sized enterprises (SMEs) take part fairly in international trade.

The purpose of standardization in the field of smart community infrastructures is to promote the international trade of community infrastructure products and services and disseminate information about leading-edge technologies to improve sustainability in communities by establishing harmonized product standards.