ISO/TR 37121:2017-01 (E)

Sustainable development in communities - Inventory of existing guidelines and approaches on sustainable development and resilienc e in cities

Contents

Page

Foreword vii

Introduction viii

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Compilation of guidelines and approaches 1
4.1 ASEAN/ESC model cities programme 1
4.2 Citizen's guide to biosphere eco-cities: Finding a balance between people and nature for your city and countryside 2
4.3 User's manual for the city biodiversity index 2
4.4 Eco2 cities guide: Ecological cities as economic cities 3
4.5 European common indicators: Towards a local sustainability profile 3
4.6 Global urban indicators -- Selected statistics: monitoring the habitat agenda and the millennium development goals 4
4.7 Cities and green growth: A conceptual framework 4
4.8 Reference framework for sustainable cities (RFSC): Testing results and recommendations 5
4.9 Eco-model city project (EMCP): Regional revitalization project, eco-model cities leading the transformation to the low-carbon society 5
4.10 ÉcoQuartier 6
4.11 Pearl rating system for Estidama: Emirate of Abu Dhabi 6
4.12 Green communities assistance kit 7
4.13 China's development of low-carbon eco-cities and associated indicator systems 7
4.14 National eco-garden city evaluation standards 7
4.15 Sustainable approach for social housing in Brazil (Selo Casa Azul CAIXA) 8
4.16 Public environmental accounting: International context, trends and concrete examples [City and Local Environmental Accounting and Reporting (CLEAR)] 8
4.17 Making EcoDistricts: Concepts and methods for advancing sustainability in neighbourhoods 9
4.18 GreenClimateCities program: Pathway to urban low-carbon development 9
4.19 Tianjin eco-city 9
4.20 Green City index: Summary of the green city index research series 10
4.21 How smart is your city? Helping cities measure progress 10
4.22 Citizen's guide to LEED® for neighbourhood development: How to tell if development is smart and green 11
4.23 CLIMATE+ development program: Framework for climate positive communities 11
4.24 Comprehensive manual for the community capital scan 12
4.25 Enterprise green communities criteria 12
4.26 Foundation for sustainable area development: Assessments for area developments 12
4.27 Global city indicators facility briefing documents 13
4.28 International eco-city framework and standards 13
4.29 Living building challenge 2.1: Visionary path to a restorative future 14
4.30 Common international targets 14
4.31 SlimCity: Cross-industry public-private initiative on urban sustainability 15
4.32 Sustainability Tools for Assessing and Rating (STAR) community rating system 15
4.33 Sustainable Cities Index 2010: Ranking the 20 largest British cities 15

4.34 Sustainable communities program ... 16
4.35 Sustainable cities program ... 16
4.36 BREEAM communities -- Technical manual ... 17
4.37 Comprehensive assessment system for built environment efficiency (CASBEE®) for Cities ... 17
4.38 German Sustainable Building Council ... 18
4.39 Eco-city development index system ... 18
4.40 Green star communities: Guide for local government ... 19
4.41 IGBC green townships (for townships and large developments) rating system -- Pilot version abridged reference guide ... 19
4.42 LEED® for neighbourhood development ... 20
4.43 Environmental accounting for people and places: Resources and Energy Analysis Programme (REAP) ... 20
4.44 Cities and biodiversity outlook -- Action and policy: Global assessment of the links between urbanization, biodiversity, and ecosystem services ... 21
4.45 Global assessment report on disaster risk reduction ... 21
4.46 UNISDR terminology on disaster risk reduction ... 21
4.47 Global competitiveness report 2013 to 2014 ... 22
4.48 Partnering for service excellence: Performance measurement report ... 22
4.49 Meeting the challenge of climate change: TRCA action plan for the living city ... 22
4.50 2012 EPI: environmental performance index and pilot trend environmental performance index ... 23
4.51 2012 Global cities index and emerging cities outlook ... 23
4.52 State of the world's cities 2012/2013: Prosperity of cities ... 23
4.53 Wealthier, healthier cities: How climate change action is giving us wealthier, healthier cities ... 24
4.54 New York City local law 84 benchmarking report ... 24
4.55 BREEAM-NL Area development -- Label for sustainable area development: Technical manual ... 24
4.56 Capacity building to integrate disaster risk reduction into coastal management in Indonesia ... 25
4.57 GHG protocol for community-scale greenhouse gas emissions (GPC) ... 25
4.58 UK sustainable development indicators ... 25
4.59 PAS 2070 -- Specification for the assessment of greenhouse gas emissions of a city: Direct plus supply chain, and consumption-based methodologies ... 26
4.60 Water sector performance indicator system (WS-PIS) ... 26
4.61 Climate change adaptation-related indicators ... 27
4.62 The UK government sustainable development strategy ... 27
4.63 Ecological footprints of Canadian municipalities and regions ... 27
4.64 Indicators of disaster risk and risk management: Program for Latin America and the Caribbean summary report (second edition) ... 28
4.65 Cities preparing for climate change: Study of six urban regions ... 28
4.66 Indicators for sustainability: How cities are monitoring and evaluating their success ... 28
4.67 Climate change adaptation indicators: Logic framework assessment and indicator analysis of Sida's bilateral and regional contributions under the framework of the climate change initiative ... 29
4.68 London's quality of life indicators: 2012 report ... 29
4.69 Measuring urban sustainability: Analysis of the European Green Capital Award 2010 and 2011 application round ... 29
4.70 Measuring city sustainability: Project Houston ... 30
4.71 Investing in sustainable growth: 2012 Rotterdam sustainability monitor ... 30
4.72 National Forest City ... 30
4.73 Construction index for ecological cities ... 31
4.74 Management referential system for a sustainable management operation (Référentiel du Système de Management d'une Opération d'aménagement durable) ... 31
4.75 How to integrate and determine the value of the three sustainable development aspects from the conception to the development of a project (Comment intégrer et valoriser les 3 aspects du développement durable de la conception à la réalisation d'un projet) ... 31
4.76 From strategy to evaluation: keys to succeed in the local Agenda 21 -- Referential for the evaluation of territorial sustainable development projects (De la stratégie à l'évaluation:

des clés pour réussir un Agenda 21 local -- Référentiel pour l'évaluation des projets territoriaux de développement durable) 32
4.77 Territorial Sustainable Development Projects and Local Agenda 21 32
4.78 Referential: A Sustainable Development for Paris (Référential: Un Aménagement Durable Pour Paris) 33
4.79 Sustainable development indicators: Indicators for the sustainable development national strategy 2010-2013 (Les indicateurs de développement durable: Les indicateurs de la stratégie nationale de développement durable 2010-2013) 33
4.80 Sustainable development indicators for the evaluation of urban renewal projects: INDI model - RU 2015 (Des indicateurs de developpement durable pour l'evaluation des projets de renouvellement urbain: Le modèle INDI - RU 2005) 33
4.81 Some regional approaches and indicators and some indicators related to social cohesion (Quelques démarches et indicateurs régionaux and Quelques indicateurs en lien avec la cohésion sociale) 34
4.82 Reference framework for sustainable cities 34
4.83 Urban sustainable development diagnostic (Diagnostic developpement durable urbain)34 4.84 Guide for environmental quality in architecture and urbanism (Guide de la qualité environnementale dans l'architecture et l'urbanisme) 35
4.85 Sustainable cities and neighbourhoods (Ville and quartiers durables) 35
4.86 Baro'Metropole: Our Territory in Focus (Baro'Metropole: Notre Territoire à la Loupe) 35
4.87 Eco-neighbourhoods Charter: Project subject to consultation and experimentation (Charte des éco quartiers: Project soumis à concertation et expérimentation) 36
4.88 Charter for sustainable development and habitat (Charte de l'aménagement et de l'habitat durables) 36
4.89 UNISDR Disaster Resilience Scorecard for Cities 37
4.90 UNISDR Indicators of progress 37
4.91 UNISDR Post-2015 Framework for Disaster Risk Reduction: A proposal for monitoring progress 38
4.92 UNISDR local government self-assessment tool 39
4.93 Making Cities Resilient Report 2012 (UNISDR) 39
4.94 UNISDR Ten New Essentials for Making Cities Resilient 40
4.95 University of Notre Dame Global Adaptation Index 41
4.96 Resilient Cities Research Report (Grosvenor) 42
4.97 City Resilience Framework 42
4.98 2014 FM Global Resilience Index 43
4.99 Global Climate Risk Index 2015 43
4.100 Index for Risk Management -- InfoRM 44
4.101 Risk Reduction Index in West Africa 45
4.102 Toolkit for Resilient Cities -- Infrastructure, Technology and Urban Planning 46
4.103 The Oregon Resilience Plan 46
4.104 Planetary Boundaries Framework 47
4.105 Doughnut economics 47
4.106 Recovery Strategy for Greater Christchurch 48
4.107 Private Sector Investment Decisions in Building and Construction: Increasing, Managing and Transferring Risks: Case study of Lagos, Nigeria 49
4.108 Tourism Investment Choices and Flood Risk: Illustrative Case Study on Denarau Island Resort in Fiji 49
4.109 Flood risk management and the roles of the private sector in England 49
4.110 The Value of Seismic Risk Mitigation in Canterbury, New Zealand 50
4.111 Uncorrected land-use planning highlighted by flooding: The Alba case study (Piedmont, Italy) 50
4.112 Private Sector Investment Decisions in Building and Construction: Increasing, Managing, and Transferring Risks: A Case Study of Thailand 50
4.113 UNISDR Case Study Report 51
4.114 REDi Rating System 51
4.115 IFRC Framework for Community Resilience 51
4.116 Copenhagen Climate Adaptation Plan 52
4.117 Risk-Based Land-Use Guide 53
4.118 Enhancing Distribution Resiliency 53
4.119 Smart City Pilot Project 53
4.120 Haimian City Pilot Project 54
4.121 Low-carbon regions and cities experimental project 54

4.122 Guide for comprehensive assessment of local government ... 55
4.123 Spanish Sustainable Development Strategy ... 55
4.124 Spanish Standardization Work Programme ... 55
4.125 Gradual Development of Austrian Smart City Profiles ... 56

5 Analysis of indicators ... 56
5.1 ISO 37120 Gap analysis -- Resilience indicators ... 56
5.2 Analysis and correlation of guidelines and approaches with purposes and issues from ISO 37101 ... 59
5.2.1 General ... 59
5.2.2 Reference framework for European sustainable cities ... 60
5.2.3 Baro Metropole (City of Rennes) ... 63
5.2.4 Reference framework for territorial sustainable development projects and local Agenda 21 ... 66
5.2.5 Green communities ... 68
5.2.6 Urban indicators guidelines ... 70
5.2.7 Low-carbon eco-cities ... 73
5.2.8 Star community rating system ... 74
5.3 Analysis of CASBEE® guidelines and approaches ... 77
5.3.1 CASBEE® for urban development ... 77
5.3.2 CASBEE® for cities ... 80
5.3.3 CASBEE® for market promotion -- Reflecting UNEP FI PWG's support for concise metrics ... 82
5.4 Analysis and correlation of UNISDR ten new essentials with ISO 37120 ... 85

6 Selection of indicators ... 92
6.1 General ... 92
6.2 Collection of information ... 93
6.3 Statistical considerations: Time series, missing data and interpretation in context ... 93
6.3.1 General ... 93
6.3.2 Time series ... 94
6.3.3 Missing data ... 94
6.3.4 Interpretation in context ... 94
6.4 Priorities and approaches for individual cities ... 94

Bibliography ... 96