

Transforming our world -
The 2030 Agenda for
Sustainable Development



Conference and Plenary Meeting of the Permanent Committee on Cadastre of the European Union (PCC)

Smart Cadastre – shaping the future

Cadastrals and Land Registries: Shaping the SDGs

Greg Scott, UN-GGIM Secretariat
Environmental Statistics and Geospatial Information Branch
United Nations Statistics Division
Department of Economic and Social Affairs
United Nations, New York



UN-GGIM

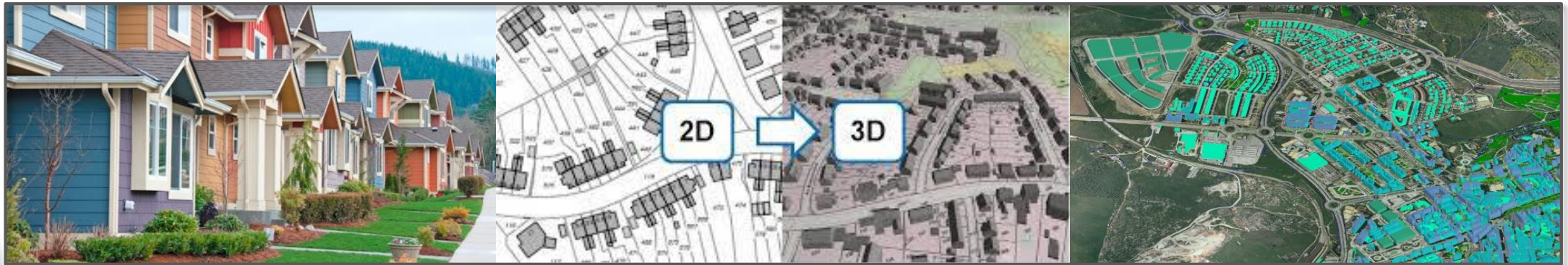
United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

Cadastrres and Land Registries

- Provide the fundamental service for secure land tenure, reliable land value, efficient land use and sustainable land development functions.
- Provide the location or place for many activities in the built environment. This in turn provides the spatial enablement of the broader land administration system.
- Permit geocoding of property identifiers, and particularly street addresses, that then facilitate spatially enablement of government and wider society.
- Although the land market function is essential, the ability to spatially enable society is proving to be just as important.
- Spatial enablement allows governments to more easily deliver sustainable development (social, economic, environmental) outcomes, increasingly becoming overarching objectives of government.

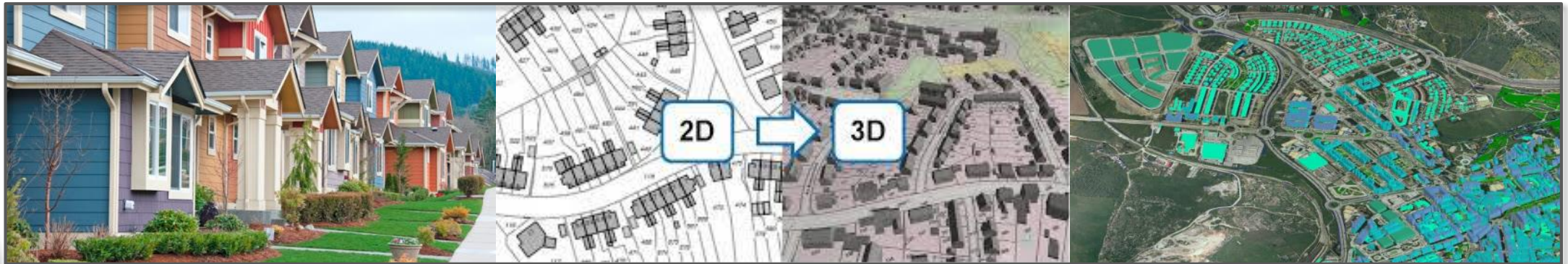


Cadastrres and Land Registries

- In the developed world, cadastrres are complete and support spatial enablement and sustainable development.
- New initiatives in 3D cadastrres for smart cities, marine cadastrres and the digital revolution (on demand/any place, smart phones, positioning technologies, sensors, virtual world)
- Focus in less developed countries is on land governance, fitness for purpose and low-cost cadastral solutions.

The Role of Cadastrres in Sustainable Development, Ian Williamson, World Cadastre Summit 2015, Istanbul.

- Positioning for the future through evolving innovation and change: Digital Twins, Smart Cities, GeoBIM, Transport, Energy, Water, Marine, Infrastructure, Building, Manufacturing, Water, Agriculture, Forests, etc.



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



Land Matters: How Securing Community Land Rights Can Slow Climate Change and Accelerate the Sustainable Development Goals

Securing land rights is emerging as a welcome, yet still undervalued, strategy for achieving many of the SDGs, including climate action. Land, together with its natural resources and ecosystem services, is the source of livelihood and wellbeing for billions of people around the world. Safeguarding communities' and indigenous peoples' right to this land, and its environmental resources, is therefore imperative to much of the 2030 Agenda, including SDGs 1 (end poverty), 2 (end hunger), 8 (decent work and economic growth), and 5 (gender equity).

Peter Veit, Director, Land and Resources Rights Initiative

<https://www.wri.org/news/land-matters-how-securing-community-land-rights-can-slow-climate-change-and-accelerate>



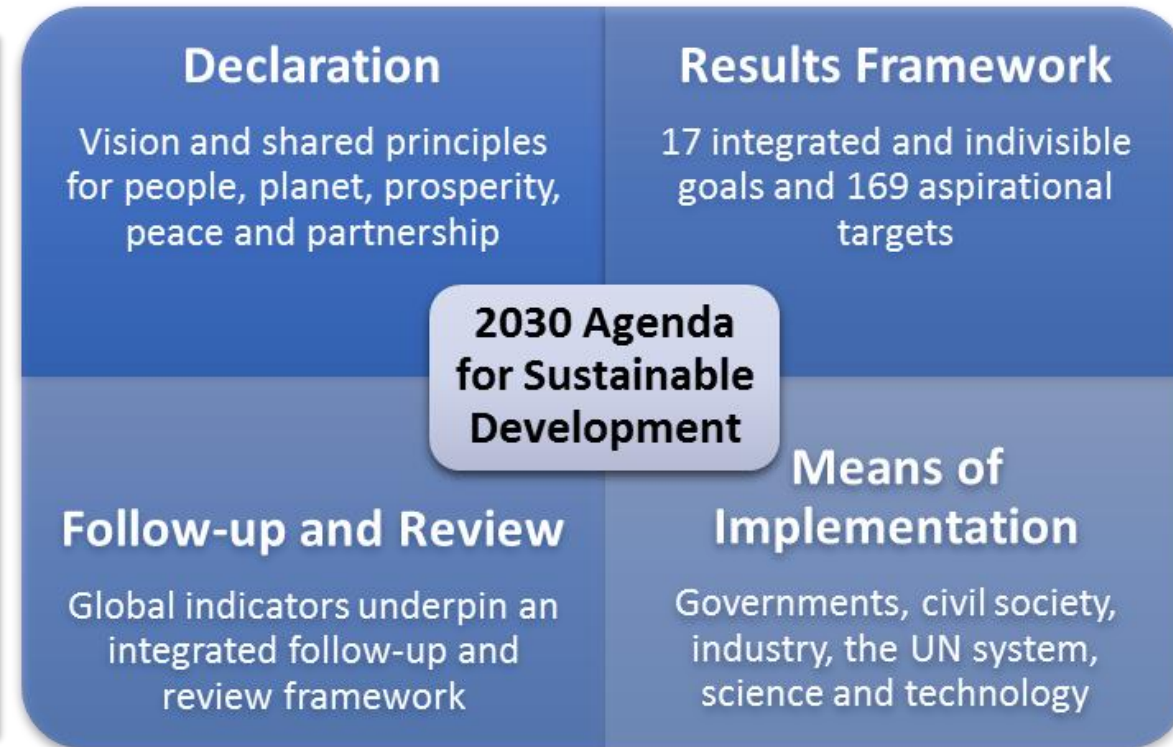
UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

The 2030 Agenda for Sustainable Development



The 2030 Agenda is an Integrated Plan of Action structured in four main parts:

- (i) Vision and principles for transforming our world as set out in the Declaration;
- (ii) Results Framework of 17 SDGs and 169 targets;
- (iii) Means of Implementation through governments, society and global partnership;
- (iv) Follow-up and Review framework comprising a set of global indicators.



The 2030 Agenda for Sustainable Development

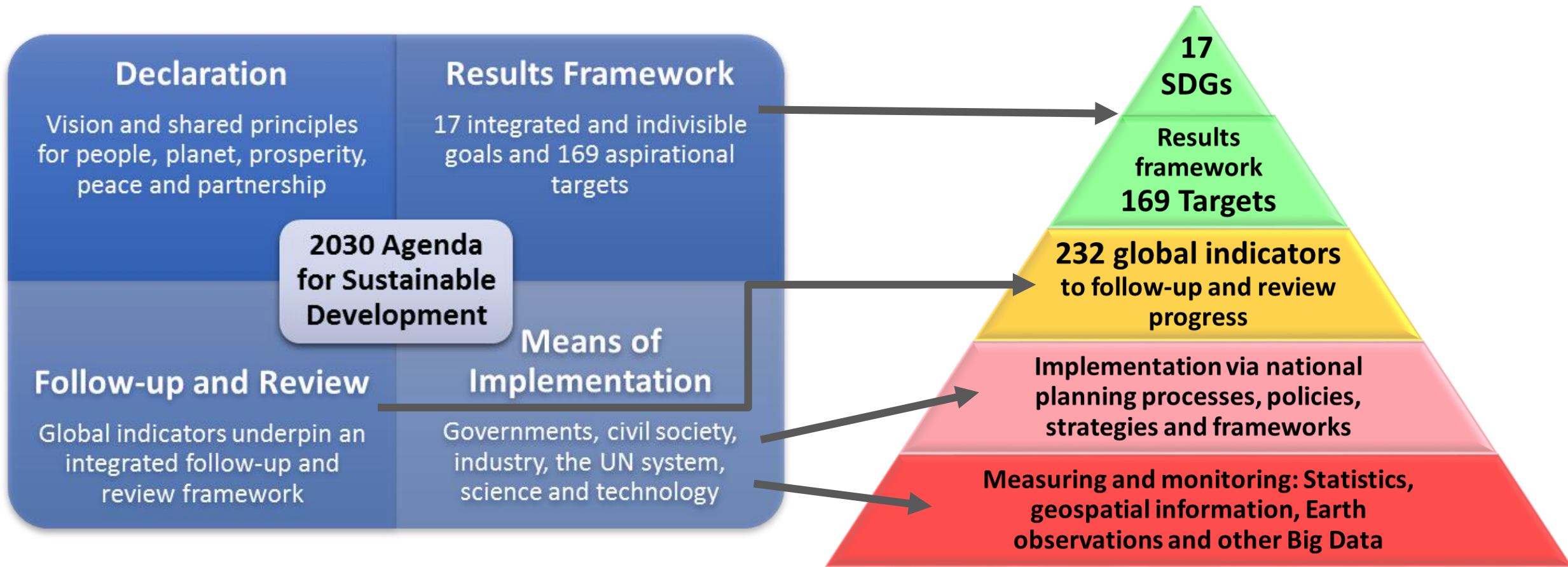


“By 2020, enhance capacity-building support to developing countries, including for LDCs and SIDS, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics...”

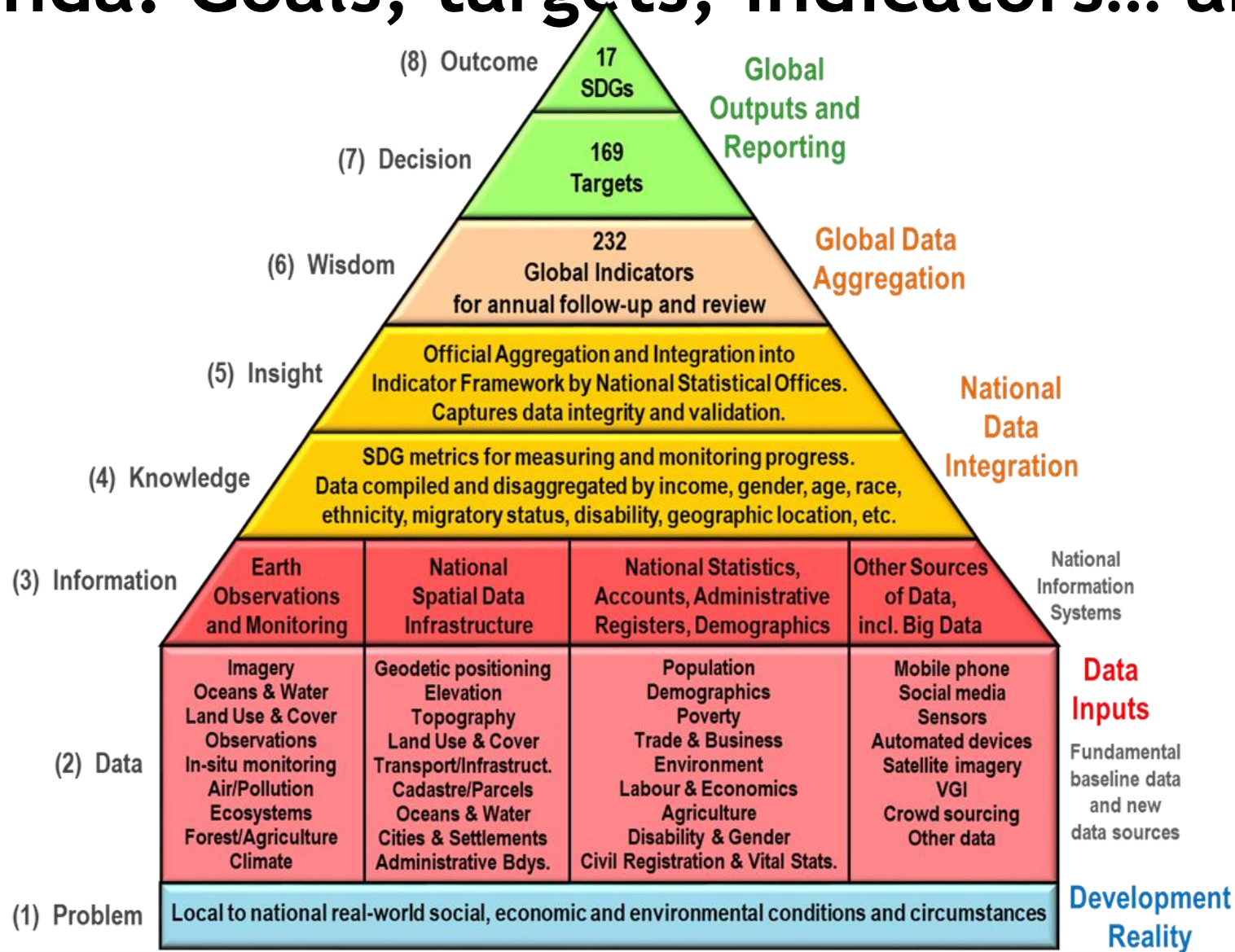
“We will support developing countries, particularly African countries, LDCs, SIDS and LLDCs, in strengthening the capacity of national statistical offices and data systems to ensure access to high quality, timely, reliable and disaggregated data. We will promote transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including Earth observation and geospatial information, while ensuring national ownership in supporting and tracking progress”



2030 Agenda: Goals, targets, indicators... and data!!



2030 Agenda: Goals, targets, indicators... and data!!



14 Global Fundamental Geospatial Data Themes

Shaped by Cadastres and Land Registries



Global Geodetic Reference Frame



Geographical Names



Addresses



Functional Areas



Buildings and Settlements



Land Parcels



Transport Networks



Elevation and Depth



Population Distribution



Land Cover and Land Use



Geology and Soils



Physical Infrastructure



Water



Orthoimagery



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

<http://ggim.un.org/documents/Fundamental%20Data%20Publication.pdf>

Positioning geospatial information to address global challenges

ggim.un.org

Cadastrres and Land Registries: Shaping the SDGs





GOAL 11: MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

TARGETS

- 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.
- 11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.
- 11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.
- 11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.
- 11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels.





GOAL 11: MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

INDICATORS

- 11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing.
- 11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities.
- 11.3.1 Ratio of land consumption rate to population growth rate.
- 11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically.
- 11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters.
- 11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities.
- 11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities.
- 11.a.1 Number of countries that have national urban policies or regional development plans that (a) respond to population dynamics; (b) ensure balanced territorial development; and (c) increase local fiscal space.





HIGH-LEVEL POLITICAL FORUM
ON SUSTAINABLE DEVELOPMENT

VOLUNTARY NATIONAL REVIEWS

Since 2016, a total of 168 countries have now presented at least one Voluntary National Review (VNR). Despite the COVID-19 pandemic, commitment to the 2030 Agenda remains strong, and was evident by the 47 countries that carried out a VNR in 2020, despite the pandemic.

Many VNRs emphasized that, to achieve SDG 11, cities must take action to find effective solutions to ensure housing quality and affordability, improve infrastructure, and reduce pollution. The increase in urban slums remains a problem and the health and well-being of countries' urban dwellers remains a priority. For countries with specific disaster vulnerabilities, this has translated into planning for climate-resilient housing, services and infrastructure.

In 2020, Austria, Bulgaria, Estonia, Finland, and Ukraine presented their VNRs.

<https://sustainabledevelopment.un.org/vnrs/>



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

Executive Summary

When it comes to key technologies, Austria is a frontrunner in electronic identification (eID), electronic document transfer (eDocuments) and the use of registers.



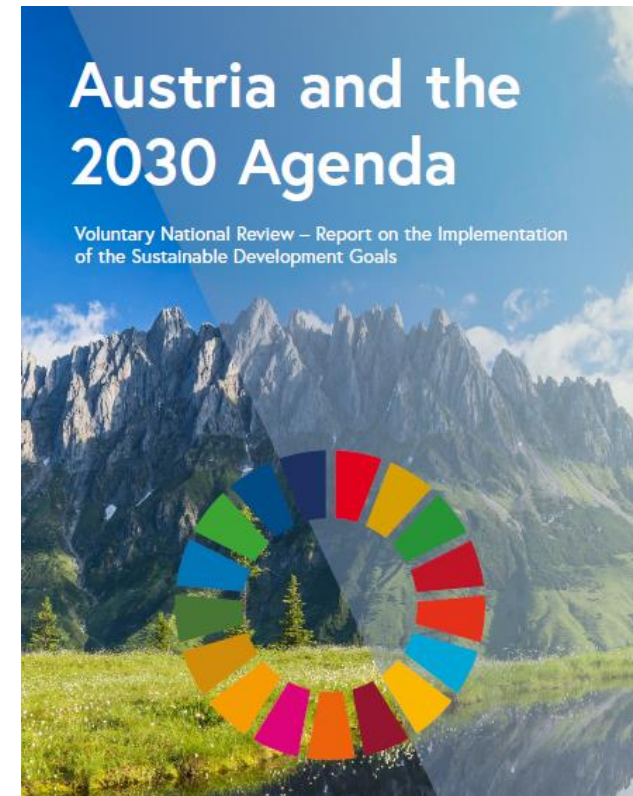
Land consumption for buildings, traffic infrastructure and purposes of recreation and mining rose by **8.9 %** from 2010 to 2018.

Fewer deaths attributed to disasters

The indicator for **deaths attributed to disasters** also showed a decline in recent years from 0.8 (age-standardised rate per 100,000 population) to 0.2 in 2018 (also see SDGs 11 and 13). In Austria, a **national crisis and disaster management system** is in place. Required access to basic services and **control over land** with the relevant legal documents (entry in the land register) are also guaranteed in Austria.



Austria is the **frontrunner** in the European Union with its proportion of land used for organic farming.



Austria and the 2030 Agenda

Voluntary National Review – Report on the Implementation of the Sustainable Development Goals



Forest area as a proportion of total land mass in Austria increased slightly from 46.8% (2010) to **47.2 %** (2018).



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT, AND SUSTAINABLE

Transforming cities is a daunting task that requires long-term policies taking into account the increasing level of urbanization and the need to simultaneously meet the emerging economic, social and environmental demands of people in these settlements.

The functionally improved characteristics of cities make it possible to develop new economic activities that diversify the local economy and reduce risks to the environment.

One of the key goals of regional policy in Bulgaria is the development of a balanced polycentric network of sustainable urban centers. Thirty-nine of the cities in the country receive support from European funds. Many are involved in a number of regional and European initiatives.

Challenges

According to NSI data, as of Dec. 31, 2018, 73.7% of the population live in cities. The challenges cities face are related to the improvement of the current housing conditions, supporting infrastructure and transport links, the construction of green urban spaces, recreation and sports areas, the involvement of different social groups in the active life of the city and the overcoming of the ghettoization of minority communities.

The majority of Bulgarian cities were designed and planned to maintain good living conditions for 10 times less population than today. Urbanization gained momentum in the second half of the 20th century and the population of Sofia increased from about 500 thousand in 1946 to about 1.3 million registered citizens in the capital today. In addition to catching up on infrastructure, attention should also be paid to alternatives to urban life in settlements close to major cities.

At the same time, human-health-related pollution and especially air pollution should be reduced.

Measures taken

The Law on Spatial Development is the main law that regulates the development of urban environment and guarantees its quality and sustainability in relation to climate challenges. Pursuant to it, the purpose of existing landscaped areas cannot be changed.

Other adopted documents that are important for the development of cities and settlements:

- National Regional Development Strategy (2012-2022)

- National Concept for Spatial Development (2013-2025)

- Decentralization Strategy (2016-2025)

- Strategy for Development of the Road Infrastructure (2016-2022)

Given the importance of housing policy as a basic policy of public governance and the need to accelerate the procedures for drafting and approving strategic documents in the housing sector, a draft National Housing Strategy (NHS) has been developed. The overall process was supported by an inter-agency working group with extensive public participation.

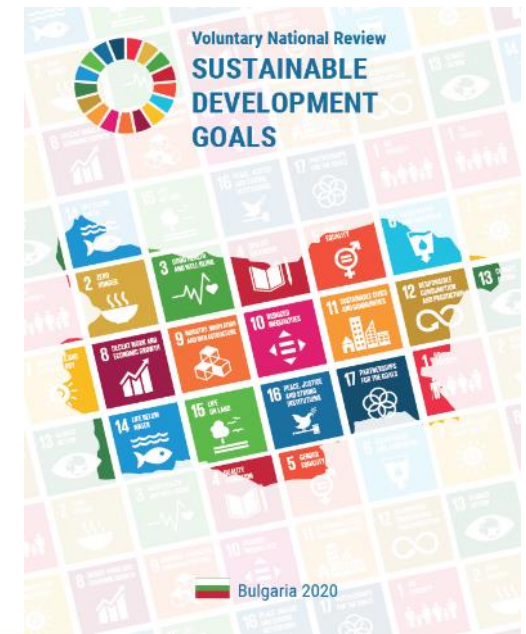
The NHS draft has been developed on the basis of the findings and conclusions made by the project contractor, and they completely overlap with the "Bulgaria – Housing sector assessment" made by a World Bank team.

The NHS draft sets the overall framework for housing development. It will be implemented with national/targeted programs aimed at meeting the specific objectives. The planned program package will focus on developing a national housing system framework and addressing its priority problems, some of which include the implementation of specific activities to improve the housing conditions of vulnerable population groups.

In 2015, the Council of Ministers adopted the Energy Efficiency of Multi-Family Residential Buildings National Programme. The Programme is aimed at renovating multi-family residential buildings with the main purpose to provide better living conditions for citizens in multi-family residential buildings, thermal comfort and higher quality of living environment by implementing energy efficiency measures.

There are 2,022 buildings approved for renovation, and as of April 1, 2019, 1,669 buildings have been renovated and put into operation. The renovation of all 2,022 buildings is expected to result in energy

With the implementation of the National Roma Integration Strategy of the Republic of Bulgaria (2012-2020), the Ministry of Regional Development and Public Works contributes to the social integration of the Roma minority by improving housing conditions through providing a cadastral and urban development basis. Work is underway to build the technical infrastructure for neighborhoods with a compact Roma population and open up new terrains for low housing and social infrastructure sites.





GOAL 11

Make cities and human settlements inclusive, safe, resilient, and sustainable

ESTONIA'S GOALS AND GENERAL SITUATION

The aim of the government is to ensure that the Estonian people feel that they live in a safe and secure country where the fundamental rights and freedoms of all are equally guaranteed.

Spatial planning is a key instrument for creating the conditions for a democratic, long-term, balanced spatial development, land use, quality living and built environment in cities and other settlements that take into account the needs and interests of members of society, promoting environmentally sound and economically, culturally, and socially sustainable development. Spatial planning addresses issues such as housing, transport, roads and streets, cultural heritage, waste management, green spaces, resource efficiency, climate change adaptation, security, and much more. At the same time, the keywords in the preparation of plans are cooper-

ation and involvement, without which it is not possible to establish any plan in Estonia.

The active role of the community and, more broadly, the cooperation of the participants is important for the quality of life and sustainable development of cities and settlements. Particular attention will be paid to security issues. The Estonian Internal Security Development Plan 2020–2030 is being prepared and one of the objectives of it is to create a public space that promotes security. It is planned to increase people's awareness of behaviour in public places and the use of prevention and protection measures, as well as to implement measures in public space planning that promote safe and secure behaviour and discourage risky behaviour.

MEASURES AND ACTIVITIES

INDICATORS

	2016	Latest known status (year)
11.1. Share of architectural monuments in good and satisfactory condition, %	65 (2017)	79 (2018)
11.2. Human casualties in traffic accidents (number per year)	1468	1406 (2019)
11.3. Emission of fine particulate matter (PM < 10 µm), thousand tonnes	11,92	13,92 (2017)
11.4. Access to green areas, % of population	90 (2017)	90 (2018)
11.5. Households satisfied with the condition of their dwellings	89,9	90,8 (2018)
11.6. Share of people commuting by public transport, cycling or walking, %	40,1	38,8 (2019)

5.11.1 CENTRAL GOVERNMENT LEVEL

In order to review the planning processes of the spatial living environment, an inter-ministerial **spatial design expert group** operated at the Government Office in 2017–2018 in cooperation with the Union of Estonian Architects. The main shortcomings were the lacking and fragmented spatial competence at the central government level and the lack of a holistic view. In the final report of the spatial design working group at the Ministry of Finance in 2019, proposals were made for a **more comprehensive approach to spatial policy and more effective** inter-ministerial cooperation, which would ensure the improvement of the quality of infrastructure and related living environment. It was proposed to create a joint agency in the land, regional, and planning sector, introduce the basic principles of high-quality space, and increase spatial competence throughout society.

A large number of Estonian cities are facing problems due to population decline. Therefore, guidelines have been continuously issued to local governments for the preparation of master plans to promote sustainable adaptation to the conditions of a declining population. In 2019, a corresponding **survey of small Estonian**

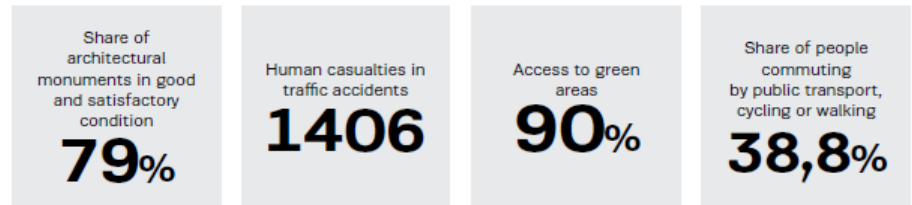
settlements¹⁸ was completed, which, inter alia, makes recommendations to local governments for actions for adaptation with the decline of the population. In 2020, the Ministry of Finance launched a cooperation project with the OECD, the aim of which is to find cross-sectoral ways to adapt to declining populations.

In order to adapt to population changes, the Union of Estonian Architects has been implementing the **"Good Public Space" urban centre revitalisation programme** since 2014 with the support of the state and local governments. In the course of this, public architectural competitions have been organised in Estonian cities for the last five years, after which the renewal of many city centres has taken place with the implementation of the winning works.¹⁹ Approximately twenty local governments are in the queue to improve the quality of the living environment through the activity. The programme contributes to integrated and balanced regional development and the achievement of climate policy objectives, increases the attractiveness of urban areas as living and business environments, and reduces urban sprawl.

The **principles and conditions for granting support to local government housing stock investments** were developed. The aim is to ensure better availability of modern rental accommodation for mobile workers in areas with market failures. The capacity of local governments to provide housing for socio-economically disadvantaged households will also be improved. The measure improves the ability of local governments to invest in housing and the living environment. In addition to the availability of housing, the condition, and energy efficiency of the housing stock across Estonia will improve,

¹⁸ Survey of Estonian small settlements, 2019 – https://planeerimine.ee/static/sites/2/valkeasulate_uuring_2019.pdf

¹⁹ While in 2018, the central squares of Tõrva, Põlva, Valga, and Rapla were opened, in 2019, Võru Square, Kuressaare Square, and Rakvere Pikk Street were also completed. In 2020, it is planned to open the solutions of Kärdla, Jõhvi, and Viljandi, and in 2021, it is planned to open the first stage of Narva (Town Hall Square, Stockholm Square). Ongoing or upcoming competitions concern the centers of Tapa, Võsu, Lihula, and Paide.





INDICATORS

11.1. Share of architectural

2016	Latest known status (year)
65	79

settlements¹⁸ was completed, which, inter alia, makes recommendations to local governments for actions for adaptation with the decline of the population. In 2020, the Ministry of Finance

Make cities and human

The aim of the government is to ensure that the Estonian people feel that they live in a safe and secure country where the fundamental rights and freedoms of all are equally guaranteed.

Spatial planning is a key instrument for creating the conditions for a democratic, long-term, balanced spatial development, land use, quality living and built environment in cities and other settlements that take into account the needs and interests of members of society, promoting environmentally sound and economically, culturally, and socially sustainable development. Spatial planning addresses issues such as housing, transport, roads and streets, cultural heritage, waste management, green spaces, resource efficiency, climate change adaptation, security, and much more. At the same time, the keywords in the preparation of plans are cooper-

ation and involvement, without which it is not possible to establish any plan in Estonia.

The active role of the community and, more broadly, the cooperation of the participants is important for the quality of life and sustainable development of cities and settlements. Particular attention will be paid to security issues. The Estonian Internal Security Development Plan 2020–2030 is being prepared and one of the objectives of it is to create a public space that promotes security. It is planned to increase people’s awareness of behaviour in public places and the use of prevention and protection measures, as well as to implement measures in public space planning that promote safe and secure behaviour and discourage risky behaviour.



ESTONIA'S GENERAL S

The aim of the government is to ensure that the Estonian people feel that they live in a safe and secure country where the fundamental rights and freedoms of all are equally guaranteed.

Spatial planning is a key instrument for creating the conditions for a democratic, long-term, balanced spatial development, land use, quality living and built environment in cities and other settlements that take into account the needs and interests of members of society, promoting environmentally sound and economically, culturally, and socially sustainable development. Spatial planning addresses issues such as housing, transport, roads and streets, cultural heritage, waste management, green spaces, resource efficiency, climate change adaptation, security, and much more. At the same time, the keywords in the preparation of plans are cooper-

Share of architectural monuments in good and satisfactory condition
79%

Human casualties in traffic accidents
1406

Access to green areas
90%

Share of people commuting by public transport, cycling or walking
38,8%

problems due to population decline. Therefore, guidelines have been continuously issued to local governments for the preparation of master plans to promote sustainable adaptation to the conditions of a declining population. In 2019, a corresponding **survey of small Estonian**

https://planeerimine.ee/static/sites/2/valkeasulate_uuring_2019.pdf

¹⁸While in 2018, the central squares of Tõrva, Põlva, Valga, and Rapla were opened, in 2019, Võru Square, Kuressaare Square, and Rakvere Pikk Street were also completed. In 2020, it is planned to open the solutions of Kärdla, Jõhvi, and Viljandi, and in 2021, it is planned to open the first stage of Narva (Town Hall Square, Stockholm Square). Ongoing or upcoming competitions concern the centers of Tapa, Võsu, Lihula, and Paide.



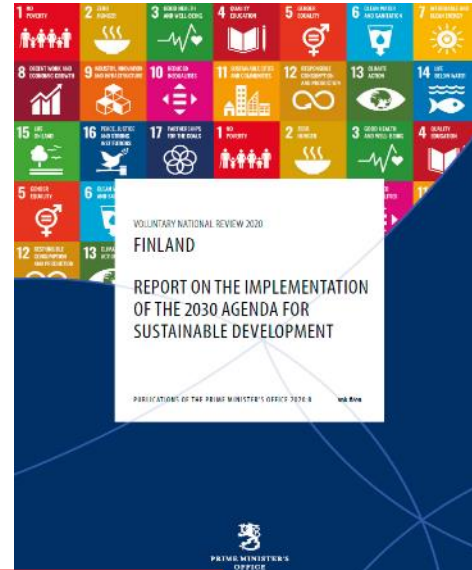
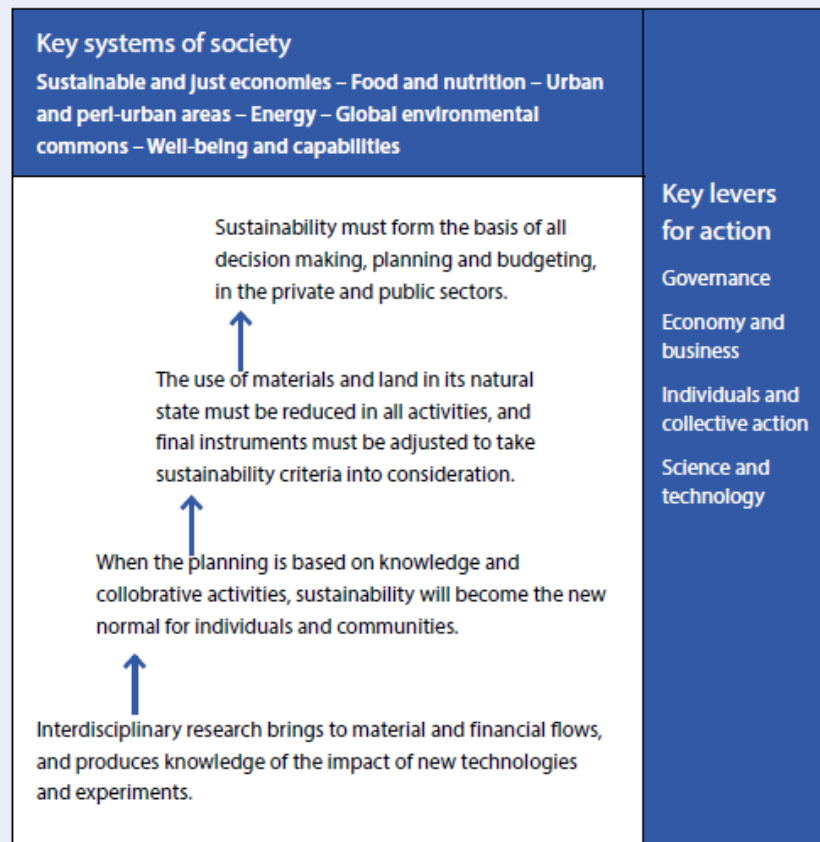


Figure 18. Path towards sustainable development

Transformations needed in six systems and actions in four levers



11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable

Government's assessment

- 11.1 Practically all housing in urban areas is adequate and the number of homeless persons has decreased. 😊📈
- 11.2 94% of the urban population lives within the range of convenient access to public transport. 😊🔄
- 11.3.1 Land consumption related to population growth has been high, but density has increased over the past ten years. 😊📈
- 11.3.2 The Land Use and Building Act ensures everyone's right to participate in land use planning. 😊📈
- 11.4.1 There is well-functioning legislation on cultural and natural heritage. 😊🔄
- 11.5 Disasters seldom happen in Finland and are usually without injuries or substantial economic losses. 😊🔄
- 11.6 The adverse per capita environmental impact of cities is at a low level. 😊🔄
- 11.7.1–11.7.2 The share of open space for public use for all is relatively high. Open spaces are safe for all. 😊🔄
- 11.a National and regional development planning is well established. 😊🔄
- 11.b Risk reduction strategies are implemented by cities and

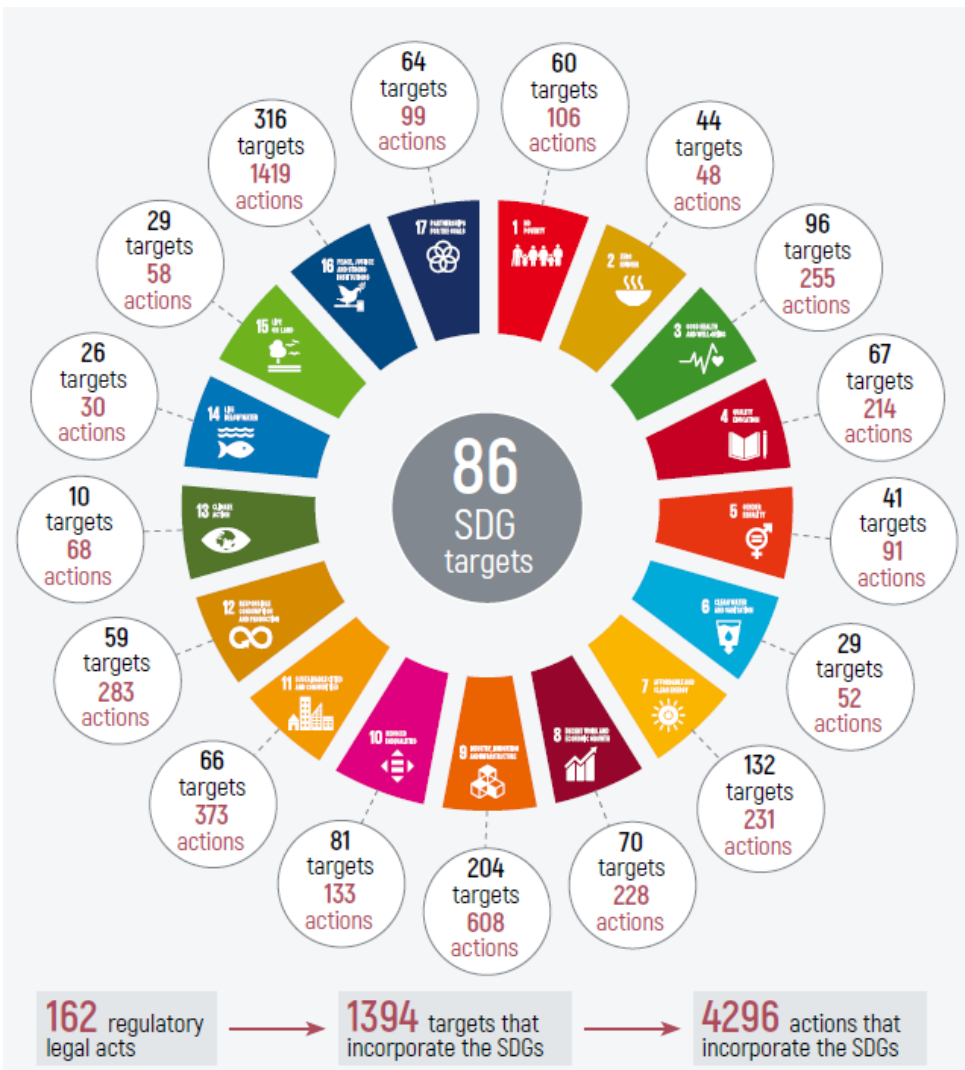
Finland has succeeded in strengthening an approach to policy and planning in which key sectors, such as land use, housing and transportation are planned in a holistic manner in order to ensure sufficient density, energy efficiency, affordability, accessibility and sustainability of the built environment. National, and especially regional, development planning is well established in Finland, covering both urban and rural areas.

For over a decade, Finland has implemented a national strategy to reduce homelessness, and the number of homeless persons has continuously decreased over the last five years. Practically all housing in urban areas in Finland is adequate but, due to price levels, affordability has not always been sufficient in the largest city regions.

Finland is a member of the United Nations Habitat Assembly and active participant at the World Urban Forum. Finnish Government leads Sustainable Buildings and Construction (SBC) programme under UN Environment 10 Year Framework of Programmes on sustainable consumption and production.



Fig. 2. Extent of the SDGs incorporation into strategic planning documents



SUSTAINABLE DEVELOPMENT GOALS UKRAINE

VOLUNTARY NATIONAL REVIEW

GOAL 11

SUSTAINABLE DEVELOPMENT OF CITIES AND COMMUNITIES

Goal/Target: progress and estimate of probability of achievement

SDG/KPI: PROGRESS: CONSISTENT PROBABILITIES

Goal has been achieved or will be achieved

Target will be met, if no additional actions are taken







Target will be met, if no additional actions are taken immediately

Target might not be met, if no additional actions are taken

Target might not be met, if no additional actions are taken immediately

* Indicators 11.1, 11.4, 11.5, 11.6, 11.7 – expert estimations.



TARGET	INDICATOR	2015	2016	2017	2018	2019	2020 (benchmark)	CURRENT STATUS	2025 (benchmark)	2030 (benchmark)
11.3. Ensure protection and safeguarding of the cultural and natural heritage, with involvement of the private sector	11.3.1. Number of cultural and natural heritage sites included in the UNESCO World Heritage List, units	7	7	7	7	7*	9		11	13
	11.3.2. Number of monuments of national importance included in the State Monument List of Ukraine, units	891	891	906	956	992*	1,005		1,155	1,305
	11.3.3. Area of the nature reserve fund of national importance, % of the country area	3.72	4.10	4.10	4.10	4.24*	5.14		7.38	8.85
11.4. Ensure timely public alert about emergencies through innovative technologies	11.4.1. Status of implementation (development, modernization, improvement) of local automated centralized public alert systems, %	0.05	0.05	0.05	0.10	0.20	To be clarified		To be clarified	
11.5. Reduce the adverse impact of pollutants, including on the urban environment in particular, through innovative technologies	11.5.1. Emissions of air pollutants from stationary sources, % to 2015 level	100.0	107.7	90.5	87.8	86.1	To be clarified		90.0	85.0
	11.5.2. Number of cities in which the average annual concentrations of major pollutants in the atmospheric air exceed the average daily maximum permissible concentrations, units	34*	34*	34*	35*	36*	To be clarified		20	15
	Suspended matter (dust)	11	10	9	11	11*				
	Sulfur dioxide	-	-	-	-	1*				
	Carbon monoxide	2	5	4	3	4*				
	Nitrogen dioxide	23	23	21	22	26*				
	Nitrogen oxide	1	2	1	2	2*				






Conference and Plenary Meeting of the Permanent Committee on Cadastre of the European Union (PCC)

Smart Cadastre – shaping the future

Although it may not always be visible on a daily basis...
**Cadastrals and Land Registries ARE STRATEGICALLY
 Shaping the SDGs!**

Thank You 😊

