SDGs Implementation in Italy: A Comparative Assessment of Subnational Strategies for Sustainable Development

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Abstract. Currently, many countries are committed to achieving the Sustainable Development Goals (SDGs) included in the United Nations Agenda 2030. The subnational governments are playing a key role in SDGs implementation at local level. In Italy, the "National Strategy for Sustainable Development" (NSDS) for 2017–2030 defined an integrated system of objectives and actions for guiding policies and interventions towards SDGs. Italian subnational governments (Regions and Autonomous Provinces) must adapt the NSDS to their contexts through local-specific strategies, according to different territorial features and priorities. This paper provides a comparative assessment between four Italian subnational Strategies for Sustainable Development – Liguria and Marche Regions, Autonomous Region of Sardinia and Autonomous Province of Trento – in order to highlight differences and similarities in vision, approaches and implementation mechanisms for embedding SDGs across local strategies, action plans and programs. Thus, the main aim is to provide a first detailed insight of the implementation strategies for SDGs in Italy and to contribute to the growing knowledge in the field of strategic and operational planning related to sustainable development.

Keywords: 2030 agenda · Sustainability assessment · SDGs implementation · Strategy for sustainable development · Subnational policies

1 Introduction

In 2015, the 17 Sustainable Development Goals (SDGs) of the UN 2030 Agenda [1], provided a unified framework for addressing the main global challenges such as poverty, climate change, food security, economic crisis, resource scarcity, environmental degradation, and biodiversity loss.

These universal goals can be achieved by each member state through a process of SDGs localization that allows to move from global to the national and subnational levels of government [2–4]. The 2030 Agenda, in fact, recognise the central role of the local action in addressing sustainable development and, therefore, in SDGs progress. Thus, «despite the need for global outcomes, most implementation will be local» ([5], p. 1483). The importance of context-specific indicators has been highlighted by many academics

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O. Gervasi et al. (Eds.): ICCSA 2022 Workshops, LNCS 13379, pp. 627–638, 2022.
https://doi.org/10.1007/978-3-031-10545-6_42

and practitioners [6–13] that have also highlighted influence that the local action can have in shaping the global [12, 14].

Italy is one of the 193 world Countries that have signed the 2030 Agenda in September 2015 and after just over two years, on the 22 December 2017, the Italian government has approved their National Strategy for Sustainable Development (NSSD) [15] as the main tool for the implementation of the SDGs within the Italian territory for the period 2017/2030 [16].

The NSSD established a set of strategic priorities and objectives, articulated into the five pillars of 2030 Agenda (People, Planet, Prosperity, Peace, and Partnership) which must be pursued by Italian subnational governments – Regions and Autonomous Provinces with law-making powers – through local adapted policy and interventions [17–19]. Through a cascade mechanism, subnational governments are accountable for developing local strategies based on specific local priorities and for the setting-up related indicators to measure and monitor their progress towards SDGs.

Since 2018 and 2019, the Italian Ministry of the Environment and Protection of the Territory and the Sea (now Ministry for Ecological Transition) has supported through specific collaboration agreements Regions and Autonomous Provinces in the development of their own local strategies and in the definition of a regulatory framework consistent with the financial framework of the European Cohesion Policy for the 2021–2027 programming period [20], one of the main economic tools for the implementation of NSSD [21–23].

Until now, among the 20 Regions and two Autonomous Provinces (Trento and Bolzano) into which the Trentino Alto-Adige Region is divided, 11 subnational Strategies are formally approved (Bolzano, Emilia-Romagna, Lazio, Liguria, Lombardia, Marche, Piemonte, Sardinia, Toscana, Trento, Veneto) and 10 are under development (Abruzzo, Basilicata, Calabria, Campania, AR Friuli Venezia Giulia, Molise, Puglia, Sicilia, Umbria, Valle D'Aosta) [24].

This study analyzes and compares four of these strategies – Liguria and Marche Regions, Autonomous Region of Sardinia and Autonomous Province of Trento – that provide a significant sample of the strategies approved so far, to evaluate similarities and differences in the SDGs implementation.

Thus, encompassing the universal nature of the 2030 Agenda, the main aim of this study is to contribute to advancing knowledge about different approaches and actions carried out by subnational governments for the adaptation of global goals to local realities and contexts.

2 Methodology

2.1 Data Collection

This study analyses and compares four selected Strategies for Sustainable Development elaborated by different Italian subnational governments (see Table 1).

Table 1. The characteristics of the four selected Italian subnational governments.

Local government	Inhabitants (2021)	Surface (km2)	Density (inh/km2)	Municipalities
Liguria Region	1.518.495	5.416,15	280,36	234
Marche Region	1.498.236	9.401,18	159,37	225
Autonomous Region of Sardinia	1.590.044	24.099,45	65,98	377
Autonomous Province of Trento	542.166	6.206,87	87,35	166

These strategies are easily comparable with one another regarding their structures, implementation mechanisms and monitoring procedures (see Fig. 1 and Table 2).

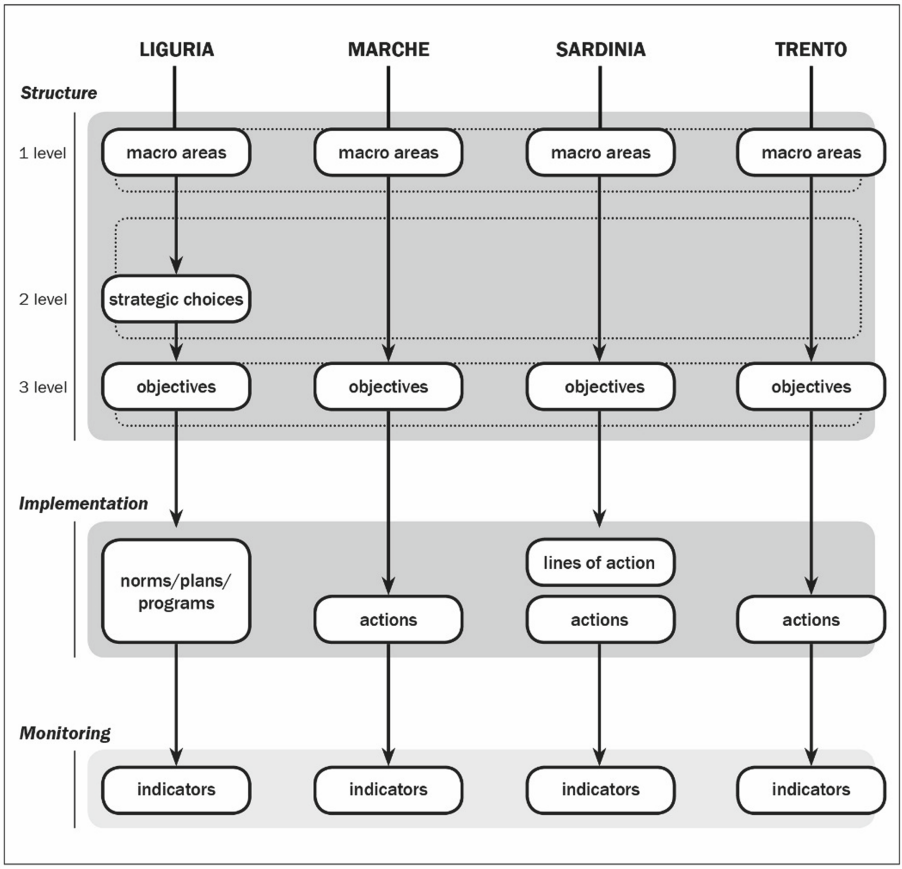


Fig. 1. A graphic representation of the structure and contents of the selected strategies.

Each of the four strategies is articulated in strategic macro-areas:

Table 2. The four selected Italian subnational Strategies for Sustainable Development: structure, implementation mechanisms and monitoring procedures (data sources: [25–29].

Subnational government	Date	Strategic macro areas	Implementation Choices/Themes/Objectives/Actions		Monitoring: Indicators
Liguria Region	29.Jen 2021	(1) People; (2) Planet; (3) Prosperity; (4) Pace	13 Choices 49 Objectives	369 Norms/ Plans/Programs	111
Marche Region	13.Dec 2021	(1) Resilience; (2) Climate change; (3) Ecosystem services; (4) Equity; (5) Economic develop	19 Objectives (+ 4 related to selected vectors of sustainability)	59 Actions (+ 31 related to selected vectors of sustainability)	98
Autonomous Region of Sardinia	8.Oct 2021	(1) Smarter; (2) Greener; (3) More connected; (4) More social; (5) Closer to citizens	34 Objectives	104 Lines of action 587 Actions	102
Autonomous Province of Trento	15.Oct 2021	(1) Smarter; (2) Greener; (3) More connected; (4) More social; (5) Closer to citizens	20 Objectives	177 Actions	119

– Liguria Strategy refers to four of the five strategic macro areas defined by the 2030 Agenda: People, Planet, Prosperity, Peace;
– Sardinia and Trento Strategies are aligned with the five pillars of the EU Cohesion Policy for 2021–2027: Smarter, Greener, More Connected, More Social, Closer to Citizens;
– Marche Strategy is structured into five region-specific macro-areas: Resilience; Climate change; Ecosystem services; Equity; Sustainable Economic development.

Each strategic macro-area (1 level) is divided in themes and/or strategic choices (2 level) and/or objectives (3 level). For each of these, implementation mechanisms (e.g., norms, plans, programs, actions) and procedures for monitoring the extent and impacts of these mechanisms (e.g., specific indicators) are provided.

These different structures and contents depend on subnational priorities derived from the data analysis provided by local "Positioning Reports" that provided a preliminary full assessment of the distance to the SDGs at regional or provincial level.

2.2 Data Analysis

This study analyses and compares a selection of Italian subnational Strategies for Sustainable Development. For each strategy it applies the following assessment criteria:

1. Systemic Vision: Are all SDGs addressed?
2. Balanced Approach: Have all SDGs the same weight?
3. Implementation: Are all SDGs associated with an adequate number of objectives?

To this end, for each selected strategy we used descriptive statistics to evaluate:

– Which SDGs are addressed by different macro-areas;
– How many SDGs was addressed in different strategic macro-areas;
– How often each SDGs was addressed by different objectives in relation to the total number of objectives defined by each strategy. This assessment was carried out on the basis of information and data provided by official documents (see "data source" column in Table 2).

3 Results and Discussion

3.1 Systemic Vision of SDGs

All 17 SDGs were addressed only by one of the five selected Italian subnational Strategies (Sardinia), while one of these (Marche) doesn't consider the SDG 16 "Peace, Justice and Strong Institutions" and other two (Liguria and Trento) don't consider the SDG 17 "Partnership for the Goals" (see Fig. 2).

However, these two SDGs are implicitly linked to all Strategies because these are developed through a multi-stakeholder consultation process that leaded to different Public Administrations, private-owned organizations and citizens working together to define a shared vision and corresponding strategies (Target 17.7), accommodating competing interests and enhancing policy coherence for sustainable development (Target 17.14). Thus, this "global partnership for sustainable development" allowed to mobilize and share knowledge, expertise, and financial resources to support the achievement of the SDGs (Target 17.16) and to develop effective, accountable, and transparent public institutions (Target 16.6). Only the Sardinia Strategy has evaluated the contribution of all strategic macro-areas in the achievement of SDG 16 and 17.

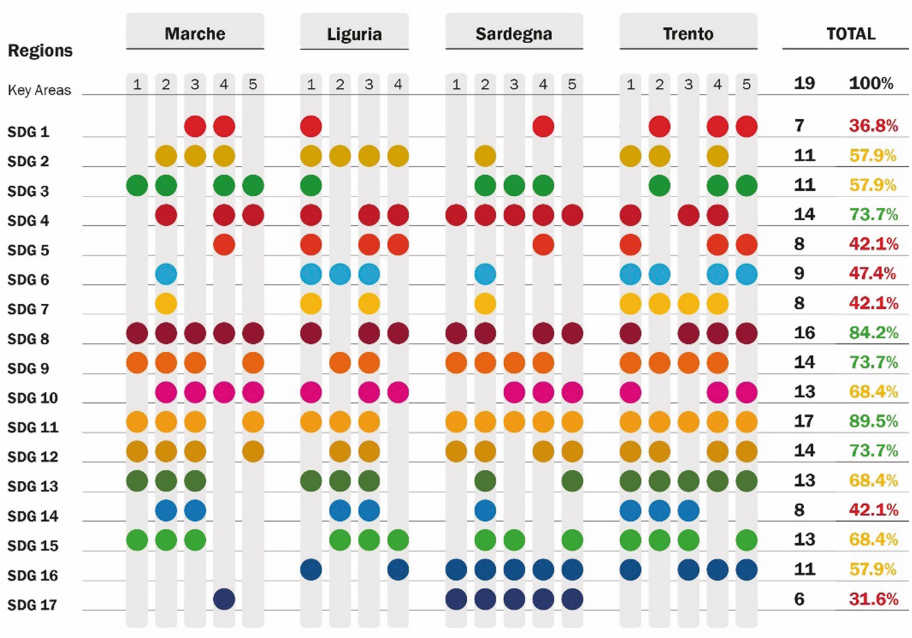


Fig. 2. Interrelations between SDGs and the subnational Strategies: a detailed overview of the different Goals which are associated to each strategic macro area of the four selected subnational strategies (graphically indicated with coloured dots) and the overall relevance of single SDGs expressed in number and in percentage. (Color figure online)

3.2 Balanced Approach to SDGs

The analysis of the four selected Strategies reveals different weights that are given to various SDGs (see Fig. 2). Overall, the SDG 11 "Sustainable Cities and Communities" (89.5%) and the SDG 8 "Decent work and economic growth" (84.2%) are the most prevailing goals. All the five macro-areas of the Marche Strategy contribute to achieve the SDG 8 and all the five macro-areas of Sardinia and Trento Strategies the SDG 11.

With 73.7% SDG 4 "Quality Education", SDG 9 "Industry Innovation and Infrastructure" and SDG 12 "Responsible production and Consumption" are in an intermediate position. All the five macro-areas of the Sardinia Strategy have an impact on the SDG 4. In addition to the SDG 17 already discussed above, the SDG 1 "No Poverty" (36.8%), the SDG 5 "Gender Equality", the SDG 7 "Clean Water and Sanitation" and the SDG 14 "Life below Water" are among the goals that are less addressed by all strategies. Compared to the others, the Trento Strategy seems to make the greater effort to achieve these SDGs.

3.3 SDGs Implementation

Overall, most objectives outlined by selected strategies, have an impact on SDG 11: about the 79% in the Marche Strategy, 35% in Trento Strategy and the 26.5% in Liguria and Sardinia strategies (see Table 3).

Table 3. Summary of metrics deduced from confusion matrices in cases of supervised classification

Strategic Macro areas	SDGs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
LIGURIA	Objectives Tot: 49	10%	18%	10%	14%	**26%**	22%	6%	20%	12%	12%	**26%**	18%	6%	14%	22%	12%	0%
(1) People	10	5	4	5	3	**7**	4	1	2		3	**2**					1	
(2) Planet	17		2				6			1		**7**	2	2	3	9		
(3) Prosperity	16		3		2	**2**	1	2	7	5	1	**4**	7	1	4	1		
(4) Pace	6				2	**4**			1		2					1	5	
MARCHE	Objectives Tot: 19	17%	21%	**42%**	21%	5%	17%	5%	**42%**	**40%**	21%	**79%**	**63%**	**37%**	17%	**42%**	0%	5%
(1) Resilience	4			**3**					**2**	**2**		**4**	**2**	**3**		**2**		
(2) Climate	5			**2**			2	1		**1**		**5**	**5**	**3**	1	**3**		
(3) Ecosystem	4	1	3				1		**2**	**1**	1	**3**	**3**	**1**	2	**3**		
(4) Equity	3	2	1	**2**	2	1			**2**	**1**	2	**2**						1
(5) Economic	3			**1**	2				**2**	**1**	1	**2**	**2**					
SARDINIA	Objectives Tot: 34	3%	6%	**29%**	**29%**	15%	6%	9%	**44%**	**35%**	23,5%	**26%**	**38%**	15%	15%	**29%**	26%	**38%**
(1) Smarter	4				**1**				**4**	**2**		**1**	**1**				2	**2**
(2) Greener	13		2	**3**	**2**		2	3	**2**	**4**		**1**	**8**	4	5	**8**		**3**
(3) Connected	4			**2**	**2**				**1**	**3**	3	**3**				**1**	1	**2**
(4) Social	9	1		**5**	**4**	5			**5**	**3**	4	**3**	**1**				2	**4**
(5) Closer	4				**1**				**3**		1	**1**	**3**	1		**1**	4	**2**
TRENTO	Objectives Tot: 20	**45%**	**30%**	20%	**30%**	**50%**	25%	25%	**50%**	**40%**	20%	**35%**	**30%**	**55%**	20%	**45%**	**30%**	0%
(1) Smarter	5	**2**	**1**		**2**	**2**	1	1	**5**	**1**	1	**2**	**2**	**2**	2	**3**	**1**	
(2) Greener	4	**1**	**1**	1			2	1		**1**		**2**	**1**	**4**	1	**4**		
(3) Connected	2				**1**			2	**1**	**1**		**1**		**2**	1	**1**	**1**	
(4) Social	6	**3**	**4**	3	**3**	**6**	1	1	**3**	**1**	5	**1**	**2**	**2**			**2**	
(5) Closer	3	**3**		1		**2**	1		**1**		3	**1**	**1**	**1**		1	**2**	

After SDG 11, the goals accorded the most importance are SDG 8, SDG 9, SDG 12 and SDG 15 "Life on land". Besides these goals, SDG 3 "Good health and Well-being", SDG 4 and SDG 5 "Gender Equality" and SDG 13 "Climate Action". Finally, SDG 1 and SDG 16 in Trento and SDG 17 in Sardinia (see Table 3).

Furthermore, the analysis shows the integrated nature of many subnational objectives that allow to achieve different goals, according to the interrelated nature of SDGs. The number of SDGs related to a single subnational objective varies from one to nine.

In the Trento Strategy one of 20 total objectives is linked with nine SDGs, 5 to seven SDGs and 8 to five SDGs.

In the Marche Strategy five of 19 total objectives are linked with six SDGs, 4 with five SDGs and 6 with four SDGs, while only 4 objectives with three or two SDGs.

In the Sardinia Strategy 11 objectives of the 34 totals are linked with five SDGs, 13 with four SDGs; only 4 are related with two SDGs.

In Liguria only 4 objectives of the 49 totals are linked with five SDGs and 3 with 4 SDGs, most of these (respectively 17 and 15) are related with 3 or 2 SDGs and 10 with a single SDG.

4 Discussion and Conclusions

Subnational strategies for Sustainable Development can play a key role to achieve all 17 SDGs at subnational level. Nevertheless, in different regional or provincial contexts certain SDGs are addressed and prioritized more than others. As shown by the results presented in Sect. 3, the four Italian subnational strategies assign different importance to specific SDGs for delivering local needs and the major environmental, economic, social, and political concerns, as highlighted in Fig. 3.

Considering the strategic macro-areas, the most prevailing goals are the SDG 2 in Liguria, SDG 8 in Marche, SDG 11 and SDGs 13 in Trento, while in Sardinia several goals – SDGs 4, 11, 16 and 17 – have the same importance. In general Liguria and Trento strategies present an equilibrate balance between different goals while the differences are more evident in Marche and Sardinia strategies. If instead considering the objectives, differences between SDGs are low in Liguria strategy (range from 6% to 27%), greater in Sardinia (range from 6% to 44%) and Trento (range from 20% to 50%) strategies, and more pronounced in Marche strategy (range from 5% to 79%).

The study described in this paper starts with the data collection and the analysis of a representative sample of Italian subnational strategies. Although the sampling was limited to four strategies, in fact, their complex articulation and the significant number of macro-areas and objectives included in the analysis nevertheless offer a first comprehensive review on the status of SDGs implementation in Italy conducted by subnational governments. It addresses the three research questions that are aimed at creating a comprehensive understanding of different approaches, structures and actions towards SDGs by verifying if all SDGs: (1) are addressed by each strategy; (2) have the same weight in different strategic macro areas; (3) are associated with a high or low number of objectives.

The findings of this study highlight differences and similarities in the way that sub-national governments interpret and translate SDGs into operational actions towards achieving local objectives. The participatory approach adopted by regional and provincial administrations, in fact, creates an opportunity to meet local needs more effectively, and allows to increase the responsiveness of public investments to local priorities using clear objectives and measures [30–32].

Furthermore, these results could be useful to address further questions on SDGs implementation also in other subnational contexts. SDGs, in fact, are a common basis for tackling many global issues and a shared framework for sustainability reporting and accounting which can be easily adapted to different territorial realities with their own characteristics and dynamics.

The overview of the different strategies that we have presented, on one hand, constitutes a guide for evidence-based monitoring and impact assessment of subnational

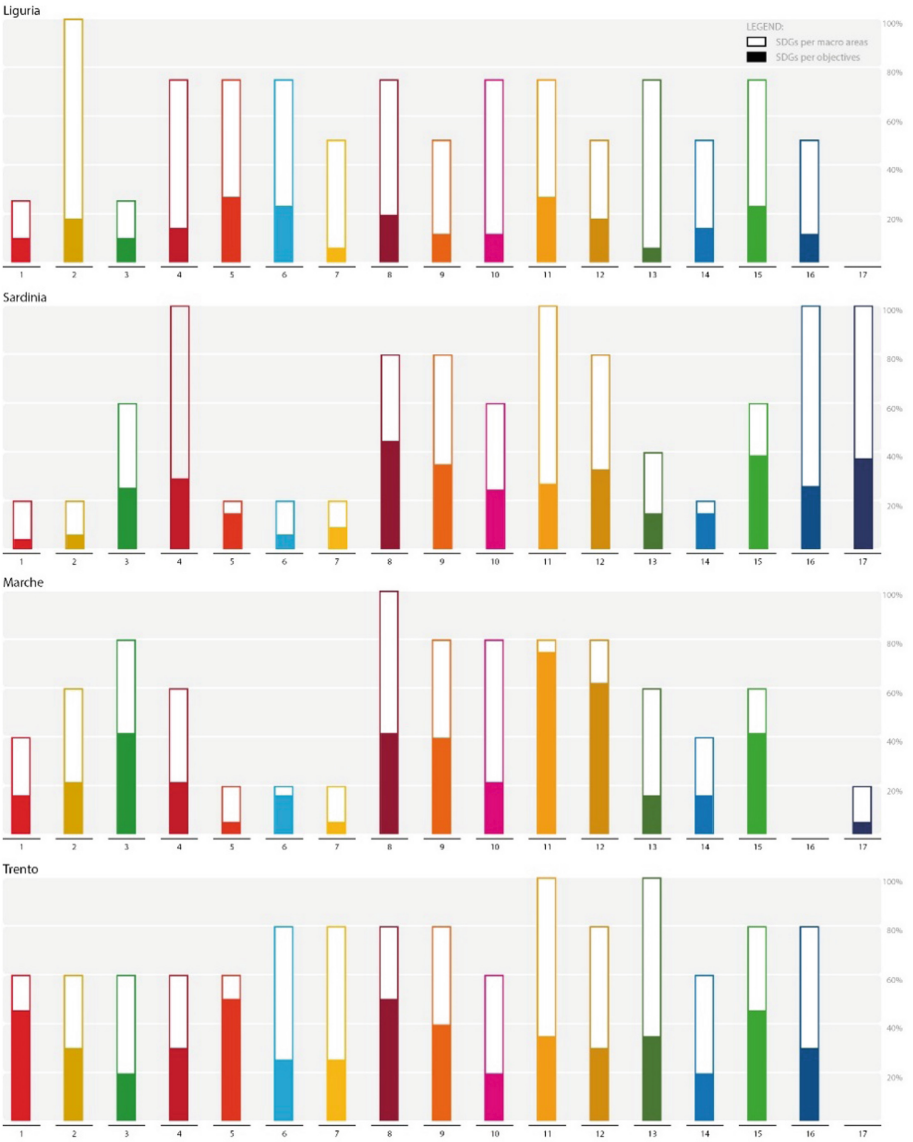


Fig. 3. Relation between SDGs and the macro areas and objectives of different strategies, the values are expressed in percentage (based on data in Fig. 2 and Table 3).

initiatives (policies, programs, plans and projects) that indicates what we are doing and what we should do for orienting the decision-making process towards SDGs. On the other hand, this articulated whole suggests a set of different "best practices" that can be revised and applied to other territorial realities to achieve specific SDGs, allowing for innovative solutions.

This aspect would be important to include in future research. The direct and transparent comparison between the objectives and the results obtained by different strategies could lead to the recognition of the most feasible and effective measures to cover all the SDGs at the subnational level.

Ultimately, this study aims at bringing the attention to the potential value of a comparative analysis of different strategies for sustainable development for stimulating the dialogue between different subnational governments in order to expand their knowledge and minimizing costs and optimizing results to accelerate efforts to build strong governance mechanisms.

References

1. United Nations: Resolution A/RES/70/1. Transforming our World: The 2030 Agenda for Sustainable Development. United Nations, New York, NY, USA (2015)
2. UCLG: Towards the Localization of the SDGs. Sustainable and Resilient Recovery Driven by Cities and Territories (2021). https://gold.uclg.org/sites/default/files/hlpf_2021.pdf. Accessed 10 Apr 2022
3. Biggeri, M.: Editorial: a "Decade for Action" on SDG localisation. J. Hum. Dev. Capabilities **22**, 706–712 (2021). https://doi.org/10.1080/19452829.2021.1986809
4. Jones, P., Comfort, D.: A commentary on the localisation of the sustainable development goals. J. Public Aff. **20**, e1943 (2020). https://doi.org/10.1002/pa.1943
5. Smith, M.S., et al.: Advancing sustainability science for the SDGs. Sustain. Sci. **13**(6), 1483–1487 (2018). https://doi.org/10.1007/s11625-018-0645-3
6. Satterthwaite, D.: Who can implement the sustainable development goals in urban areas? In: Griffith, C., et al. (eds.) Urban Planet: Knowledge towards Sustainable Cities, pp. 408–410. Cambridge University Press, Cambridge (2018)
7. Saiu, V., Blečić, I., Meloni, I., Piras, F., Scappini, B: Towards a SDGs based Neighbourhood Sustainability Evaluation Framework: a tool for assessing sustainability at the urban micro-scale. In: Abastante, F., et al. (eds) The Future of Urban Regeneration Through Value Systems for Innovation. Springer (forthcoming)
8. Steiniger, S., et al.: Localising urban sustainability indicators: The CEDEUS indicator set, and lessons from an expert-driven process. Cities **101**, 102683 (2020). https://doi.org/10.1016/j.cities.2020.102683
9. Allen, C., Metternicht, G., Wiedmann, T.: Initial progress in implementing the Sustainable Development Goals (SDGs): a review of evidence from countries. Sustain. Sci. **13**(5), 1453–1467 (2018). https://doi.org/10.1007/s11625-018-0572-3
10. González-Torre, P.L., Suárez-Serrano, E.: A framework for implementing and reporting United Nations sustainable development goals in Spanish higher education institutions. Int. J. Sustain. Higher Educ. (2022). ahead-of-print: https://doi.org/10.1108/IJSHE-03-2021-0118
11. United Nations: Compendium of National Institutional Arrangements for implementing the 2030 Agenda for Sustainable Development. United Nations, New York (2019)
12. Jiménez-Aceituno, A., Peterson, G.D., Norström, A.V., Wong, G.Y., Downing, A.S.: Local lens for SDG implementation: lessons from bottom-up approaches in Africa. Sustain. Sci. **15**(3), 729–743 (2019). https://doi.org/10.1007/s11625-019-00746-0
13. Croese, S., Green, C., Morgan, G.: Localizing the sustainable development goals through the lens of urban resilience: lessons and learnings from 100 resilient cities and cape town. Sustainability 12 (2020)

14. European Commission: Delivering the Sustainable Development Goals at local and regional level (2018). https://ec.europa.eu/info/sites/default/files/delivering-sdgs-local-regional-level.pdf. Accessed 21 Jul 2021
15. MATTM: Strategia Nazionale per lo Sviluppo Sostenibile (2017). https://www.mite.gov.it/sites/default/files/archivio_immagini/Galletti/Comunicati/snsvs_ottobre2017.pdf. Accessed 11 Apr 2022
16. Khussamov, R., Galiy, E., Anisimov, E., Ershova, L., Nemkov, D.: National Strategies for Sustainable Development G-7: Trends 2010–2020. In: E3S Web of Conferences. EDP Sciences, Les Ulis, France (2020)
17. Saiu, V., Blečić, I., Cocco, G., Meloni, I.: Urban Sustainability and SDGs Implementation between Regional strategy and Local Practice: Case of Sardinia. In: Filho, W.L. (ed.) SDGs in the European Region. Springer (forthcoming)
18. Saiu, V., Blečić, I., Meloni, I.: Making sustainability development goals (SDGs) operational at suburban level: potentials and limitations of neighbourhood sustainability assessment tools. Environ. Impact Assess. Rev. 96 (2022). https://doi.org/10.1016/j.eiar.2022.106845
19. Richiedei, A., Pezzagno, M.: Territorializing and monitoring of sustainable development goals in Italy: an overview. Sustainability **14**, 3056 (2022). https://doi.org/10.3390/su14053056
20. European Commission: EU cohesion policy: Priorities for 2021–2027 (2021). https://ec.europa.eu/regional_policy/en/policy/how/priorities. Accessed 19 Jan 2022
21. Cavalli, L., et al.: Sustainable development goals and the European Cohesion Policy: an application to the autonomous Region of Sardinia. J. Urban Ecol. **7** (2021). https://doi.org/10.1093/jue/juab038
22. Cavalli, L., et al.: The contribution of the European cohesion policy to the 2030 agenda: an application to the autonomous Region of Sardinia. SSRN Journal (2020). https://doi.org/10.2139/ssrn.3706003
23. Assumma, V., Datola, G., Mondini, G.: New cohesion policy 2021–2027: the role of Indicators in the assessment of the SDGs targets performance. In: Gervasi, O., et al. (eds.) ICCSA 2021. LNCS, vol. 12955, pp. 614–625. Springer, Cham (2021). https://doi.org/10.1007/978-3-030-87007-2_44
24. AsviS: I territori e gli Obiettivi di sviluppo sostenibile (2021). https://asvis.it/public/asvis2/files/Rapporto_ASviS/Rapporto_2021/Rapporto_ASviSTerritori2021.pdf. Accessed 26 Jan 2022
25. Provincia Autonoma di Trento: Strategia Provinciale per lo Sviluppo Sostenibile (2021). https://agenda2030.provincia.tn.it/content/download/8212/151863/file/SproSS%20def_15.10.2021.pdf. Accessed 4 Jan 2022
26. Regione Marche: Strategia Regionale per lo Sviluppo Sostenibile (2021)
27. Regione Autonoma della Sardegna: Sardegna2030. La Strategia della Regione Sardegna per lo Sviluppo Sostenibile (2021). https://delibere.regione.sardegna.it/protected/57127/0/def/ref/DBR57095/. Accessed 4 Oct 2021
28. Regione Autonoma della Sardegna: Sardegna2030. Report di posizionamento Obiettivi di Sviluppo Sostenibile Agenda 2030 ONU (2021). https://delibere.regione.sardegna.it/protected/57127/0/def/ref/DBR57095/
29. Regione Liguria: Strategia regionale per lo Sviluppo sostenibile (2019). https://www.regione.liguria.it/homepage/ambiente/sviluppo-sostenibile/strategia-regionale-sviluppo-sostenibile.html. Accessed 29 Mar 2022
30. Saiu, V.: The three pitfalls of sustainable city: a conceptual framework for evaluating the theory-practice gap. Sustainability **9**, 2311 (2017). https://doi.org/10.3390/su9122311

31. Saiu, V.: Evaluating outwards regeneration effects (OREs) in neighborhood-based projects: a reversal of perspective and the proposal for a new tool. Sustainability **12**, 10559 (2020). https://doi.org/10.3390/su122410559
32. Blečić, I., Saiu, V.: Il futuro della rendita (ripetere Sullo). Archivio di Studi Urbani e Regionali (2020). https://doi.org/10.3280/ASUR2020-129-S1001