European Commission

EXTERNAL REPORT

# SCALING UP EFFORTS TOWARDS THE LOCALISATION OF SDGs

# AN ITALIAN EXPERIENCE

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# ABSTRACT

This report analyses the experience of Italian municipalities monitoring the Sustainable Development Goals (SDGs), using the Sustainable Municipalities Network's indicator set. In particular, the report explores the ways in which Italian municipalities have been involved in the identification of data sources to locally monitor the SDGs. It synthetises how those data have been analysed and how the results have been disseminated. The report also describes how the indicator set has been defined, tested and under which conditions a similar experience could be replicated in other European countries. The report also provides recommendations on the steps needed to upscale efforts to localize the SDGs.

The analysis covers both the implementation of the Sustainable Municipalities Network's indicator set and the local contribution to the achievement of the SDGs in the Italian municipalities of the Network. According to the results, the Network of Sustainable Municipalities was able to involve in the monitoring of SDGs a number of local administrations that were not yet localising the SDGs. Therefore, it can be considered as a project replicable in other European countries. From the point of view of the contents of the 2030 Agenda, the 24 analysed municipalities achieved good results with respect to the localisation and progress toward the achievement of the goals.

The report was compiled by an external expert to the European Commission as part of the URBAN 2030-II – LocalSDGs project developed by the Joint Research Centre to support local governments in monitoring the achievement of the 2030 Agenda for Sustainable Development and related SDGs.

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*Disclaimer: the information included in this report has been elaborated by the author and do not represent the official position of the local administrations involved in the* Rete dei Comuni Sostenibili.

*The Appendix includes detailed tables and it is available at:*

*https://publications.jrc.ec.europa.eu/repository/handle/JRC132464*

# EXECUTIVE SUMMARY

## POLICY CONTEXT

The 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) were approved by the 193 members of the United Nations in September 2015 (United Nations 2015). Despite the fact that the 2030 Agenda has been approved by countries, the contribution that municipalities can give to achieving the goals is key because most people live in large, medium and small cities. In Europe, there are at least four cases in which the localisation of the SDGs has been carried out with performance indicators and supported by knowledge providers: two cases in Spain (Basque Country and Navarre), one in Belgium (in particular, in Flanders) and one in Germany.

Italy adopted the National Strategy for Sustainable Development in 2017 (Ministero dell'Ambiente e della Tutela del Territorio e del Mare 2017). In Italy, ASviS (Italian Alliance for Sustainable Development) monitors the SDGs at the regional, provincial and metropolitan level. The ASviS Annual Report (ASviS 2021) analyses the 21 Regions and Autonomous Provinces trough 14 composite indicators, the 107 Provinces with indicators related to 12 of the 17 goals, while for the 14 metropolitan cities it uses 16 quantitative targets.

Beside this, Italian municipalities have many responsibilities with respect to the contents of the 2030 Agenda. Therefore, the Network of Sustainable Municipalities, a new association established in 2021, decided to test a voluntary sustainability monitoring system based on a set of 101 indicators dedicated only to cities. Most of the indicators relate to matters within the competence of municipalities. In addition to quantitative indicators, the set includes several qualitative indicators, which monitor the adoption of local planning tools consistent with the 2030 Agenda.

This report leverages on the experience of the Network of Sustainable Municipalities, to show how it is possible to monitor the status of implementation of local sustainability in cooperation with the municipalities themselves.

The work was carried out involving 24 municipalities of different geographical location, size, social and economic characteristics.

## KEY CONCLUSIONS

This report presents findings on the progress of 24 municipalities towards achieving the SDGs. The report does this by analysing the individual indicators included in the Network of Sustainable Municipalities' monitoring framework and by aggregating them by SDGs and by characteristics of the municipalities involved.

According to the findings of this report it is possible to adapt, also in other countries, the methodology used in Italy to involve municipalities in the local monitoring of SDGs, regardless their size or statistical capacity, under certain conditions.

## MAIN FINDINGS

The most relevant evidence that emerge from the analysis are:

- the willingness of municipalities to provide up-to-date data, considering that the average response rate to the questionnaires distributed by the Network of Sustainable Municipalities was 80.69 percent;
- the willingness of some non-provincial capitals to provide data that were only required from provincial capitals; in particular, this was the case for 11 out of 19 non-provincial capitals;
- that the municipalities involved in the study have approved new strategies in recent years to improve the achievement of the SDGs, for example:
    - zero-land-consumption urban plans;
    - planning of equipped green areas;
    - new modes of waste collection, with personalized pricing;
    - planning for sustainable mobility that prioritizes public transport, walking and cycling;
    - digitization of services dedicated to citizens;

— that positive progress emerged on the 69.73 percent of the indicators calculable (over the 17 goals and 24 municipalities). When considering only indicators on matters under the direct responsibility of municipalities, the percentage of indicators in progress rises to 79.32 percent.

  The most significant progress concerns Goal 8 (Decent work and economic growth), with 96% quantitative indicators presenting a positive trend, and Goal 7 (Affordable and clean energy), with 90%. The lowest percentage of quantitative indicators experiencing a positive trend (42.44%) was observed for Goal 3 (Good health and well-being).

  Considering only the qualitative indicators, all on topics of competence of municipalities, the percentage of indicators with positive trend is 44.76.

— that many more municipalities got involved with the SDGs since this project exists, demonstrating that also in other EU countries the engagement of knowledge platforms can contribute towards a stronger involvement of local authorities, as it was also the case in Germany, Spain and the Flanders.

## RELATED AND FUTURE JRC WORK

The URBAN2030-II project aims to foster the achievement of SDGs in European cities and regions by offering an inspirational framework for the design and implementation of SDG Voluntary Local Reviews. The activities performed within the context of the URBAN2030-II LocalSDGs project allow cities to make the best use of knowledge, networking, and learning activities to localise the 2030 Agenda.

## QUICK GUIDE

The 2030 Agenda for Sustainable Development was approved by the 193 countries of the United Nations in 2015. The monitoring of its Sustainable Development Goals (SDGs) is one of the key features that makes the 2030 Agenda for Sustainable Development a framework that calls for accountability of policies. However, its monitoring framework was designed for the national level. Therefore, adjusting this framework to the local level poses a number of challenges. In many countries, national associations of municipalities tries to fill this gap. This report illustrates the initiative carried out in Italy and inspired by the JRC work, and tries to draw conclusions and recommendations.

# 1. INTRODUCTION

This report was elaborated in the framework of the URBAN2030-II project of the Joint Research Centre. The URBAN2030-II LocalSDGs project focuses on the localisation of the Sustainable Development Goals (SDGs) providing support to Europe cities willing to locally monitor their progress towards the achievement of the SDGs (Siragusa et al. 2020; 2022).

In this context, the present report analyses a set of indicators created for Italian municipalities by the Network of Sustainable Municipalities (*Rete dei Comuni Sostenibili – RCS)* and the data sources used to measure those indicators. It also measures the performance of several Italian municipalities in the achievement of the SDGs (United Nations 2015). Before this project no system for monitoring the 2030 Agenda at the local level had been consistently implemented in Italy. Previous experiences had a limited focus on provincial capitals or single themes, but non of them was potentially scalable to the 7,904 Italian municipalities.

Starting from the work done by RCS, the present study had two main objectives. The first was to understand whether Italian municipalities - and in particular mayors and local administrations - were prepared and willing to assess the performance of their municipality according to the principles and goals of the 2030 Agenda (United Nations 2015). The second was to understand: the challenges encountered in the localisation by Italian municipalities; the potential impact of knowledge platforms like the Network of Sustainable Municipalities to upscale efforts in the local monitoring; how eventually this project could be replicated in other European countries and under which conditions.

## 1.1 The localization of SDGs

Beside the fact that there is not a unique definition for this concept, the following definitions summarise the most important elements concerning localisation:

- localisation is "the process of defining, implementing and monitoring strategies at the local level for achieving global, national, and sub-national sustainable development goals and targets" (Open Working Group of the General Assembly on Sustainable Goals 2014);

- localisation includes the "process of taking into account sub-national contexts in the achievement of the 2030 Agenda, from the setting of goals and targets, to determining the means of implementation and using indicators to measure and monitor progress'" ("Towards the Localization of the SDGs. Local and Regional Governments' Report to the 2019 HLPF: 3rd Report" 2019).

Therefore, it can be said that the localisation of the SDGs is achieved through strategies, projects, and actions that have a local impact and contribute to the global achievement of the SDGs. Integration between different levels of government – local, regional, and national – is central to the 2030 Agenda. The 2030 Agenda emphasises the importance not only of the use of transformative means of implementation, but also of implementing sound systems for monitoring and reporting and, finally, promoting an inclusive approach to the SDGs.

## 1.2 Local monitoring in Italy

In Italy progress towards the SDGs is analysed by the Government in the framework of the National sustainable development Strategy (SNSvS - *Strategia Nazionale di Sviluppo Sostenibile*) (Ministero dell'Ambiente e della Tutela del Territorio e del Mare 2017). The monitoring relies on 43 indicators, and it is currently in the phase of updating and reviewing. Moreover, since 2014, the Italian National Institute of Statistics has been carrying out the project BES[1] (*Benessere Equo e Sostenibile*) – fair and sustainable welfare. This project includes the monitoring of a set of indicators related to national economic planning and financial documents[2].

1 Some of the indicators used by RCS were taken from BES project and it has been used in the past as a model for measuring sustainability policies in some provincial capitals (URBES project - https://www.istat.it/it/archivio/153995 ).

2 https://www.dt.mef.gov.it/it/news/2022/bes_2022.html

Both monitoring efforts rely on indicators primarily measured at the national or regional level. The SNSvS also elaborates results on the regional and metropolitan levels (defined in Art. 114 of the Italian Constitution[3]). Lastly, studies and research work have been focusing only on provinces and, partially, the capitals of provinces. However, before the RCS initiative, guidelines to monitor the SDGs in the 7,904 Italian municipalities were not available.

**Box 1 The Italian experience of the Network of Sustainable Municipalities**

The Network of Sustainable Municipalities (*Rete dei Comuni Sostenibili - RCS*[4]) is an association of municipalities founded in Italy on January 14th, 2021. Three entities promoted its development: Local Italian Autonomies (ALI), Città del bio and the Leganet society srl.

RCS is an association open to all Italian municipalities. Its mission is to support municipalities in the implementation of innovative, concrete, and virtuous tools and practices in line with the 17 SDGs of the 2030 Agenda for Sustainable Development.

RCS has partnerships with associations, foundations, universities, and research centres to promote projects dedicated to sustainable development. RCS is one of over 300 associations that are members of ASviS, the Italian Alliance for Sustainable Development.

RCS supports Italian municipalities in the localisation of the SDGs, with a circular scheme that starts with the planning and identification of local goals, then moves on to the development of projects, the identification of day-to-day actions and their financing, the implementation of good practices, the monitoring of results, the updating of planning and the definition of new goals.

RCS proposes a framework for cities to support their monitoring of progress for the SDGs.

## 1.3 Structure of the report

The report is structured as follows:

- This chapter introduces the research questions and the topic of SDG localisation.
- Chapter 2 describes how the Network of Sustainable Municipalities created the indicator set and describes its main characteristics. It also describes which municipalities were involved in the project and the features of their SDG reports.
- Chapter 3 summarises the progress toward the achievement of the SDGs of the 24 municipalities involved in this study.
- Chapter 4 presents the achievements of the Network of Sustainable Municipalities after the first year of implementation.
- Chapter 5 contains the conclusions.

3 https://www.senato.it/istituzione/la-costituzione/parte-ii/titolo-v/articolo-114
4 https://www.comunisostenibili.eu/

# 2. THE FRAMEWORK OF INDICATORS CREATED BY THE NETWORK OF SUSTAINABLE MUNICIPALITIES

## 2.1 The elaboration of the 2021 indicator set

This section illustrates the steps followed by the Network of Sustainable Municipalities (*Rete dei Comuni Sostenibili – RCS)* to create the framework of indicators to monitor the SDGs in Italian municipalities.

### Phase 1 – Preselection

RCS pre-selected a list of potential indicators to include in its framework according to:

1. The initial analysis of the 169 targets of the 2030 Agenda.
2. The examination of the BES[5] framework (*Benessere Equo e Sostenibile*).
3. The identification of suitable indicators from the *European Handbook for SDG Voluntary Local Reviews* (Siragusa et al. 2020).
4. The review of public and institutional datasets (i.e., the platform "A misura di Comune" of ISTAT[6], the database "Ambiente Urbano" of ISTAT[7], land registry of waste of ISPRA[8], permanent census of ISTAT[9]).
5. The feedback from some small and medium-sized municipalities on potential data availability.

### Phase 2 – Technical discussion and indicator selection

At the end of the first phase, 176 possible indicators were pre-selected. The scientific committee of RCS, with experts of ASviS and representatives of the Joint Research Centre, discussed this preselection. Following the technical discussion, 101 indicators were kept from the initial list. The list of 101 indicators was presented in a public event. No changes or additions to the set of indicators were proposed during this presentation.

The scientific committee of RCS has then approved the 101 indicators set, specifying that a revision could be performed after the first year of application. The 101 indicators adopted in 2021 by RCS are listed in Table 17. Some changes were proposed and considered for the 2022 exercise.

### Phase 3 – Pilot phase with municipalities

After the selection of indicators, the RCS piloted the framework with several municipalities, which joined the network and volunteered to test the use of the 2021 indicator set. The scope of the monitoring carried out in 2021 was to verify the:

- **Availability of data** that rely on national, regional, or municipal sources.
- **Availability of time series** (3-year minimum, aiming at five or more).

5 Some of the indicators used by RCS were taken from BES project and it has been used in the past as a model for measuring sustainability policies in some provincial capitals (URBES project - https://www.istat.it/it/archivio/153995 ).
6 http://amisuradicomune.istat.it/aMisuraDiComune/
7 https://www.istat.it/it/archivio/ambiente+urbano
8 *Istituto Superiore per la Protezione e la Ricerca Ambientale* - Italian Institute for Environmental Protection and Research https://www.catasto-rifiuti.isprambiente.it
9 "Since October 2018 ISTAT has been yearly conducting a sample survey by collecting the main characteristics of Italian resident population and its social and economic conditions at national, regional and local levels." https://www.istat.it/en/permanent-censuses - https://esploradati.censimentopopolazione.istat.it/databrowser/#/it/censtest

- **Coherence of the indicator with the total or partial competence of municipalities**.
- **Applicability of the indicator to every municipality** and not only to metropolitan or provincial capitals.
- **Timeliness,** targeted to shrink the gap between administrative action and its monitoring.

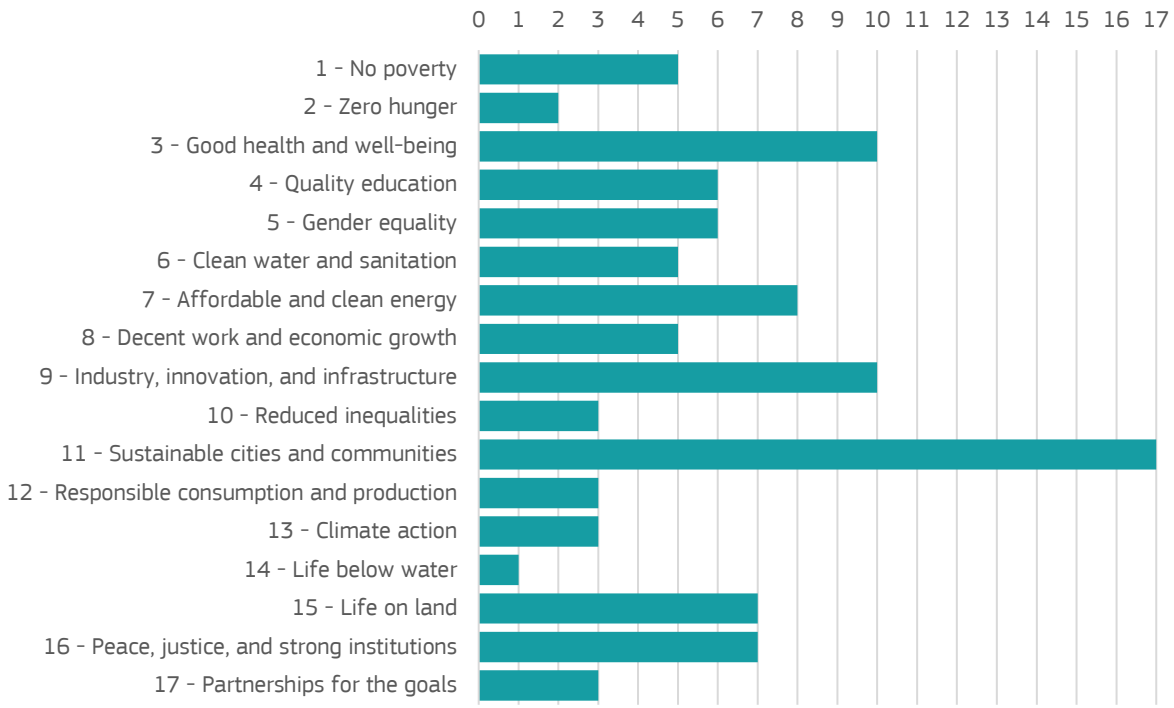
The pilot included data collection, trend calculation, and the compilation of individual standardised statistical reports per each municipality. At the end of the process, some municipalities published their 2021 Reports on their websites. Many municipalities organized public event to present the activities and results to their stakeholders. None of the municipalities used the standardised statistical report produced by the Network of Sustainable Municipalities to complete their Voluntary Local Review at the time of writing.

# 2.2 The 2021 indicator set – main characteristics

## 2.2.1 SDG coverage

The 2021 indicators set proposed by the RCS covers all 17 SDGs. As expected, the SDG with the highest number of indicators identified is *SDG11 – Sustainable Cities and Communities* (17 indicators), as it includes many topics under the direct responsibility of municipalities. The SDG with the lowest number of indicators is *SDG 14 – Life Below Water*, due to the scarcity of consistent and available data in Italy at the local level. An overview of the number of indicators identified per each goal is provided in Figure 1.

***Figure 1 Number of indicators for each SDG in the RCS 2021 indicator set.***




Source: Author's elaboration

## 2.2.2 Data sources

For the 2021 indicator set, data sources are of two types: data provided by municipalities and data extracted from national or regional databases (Table 1). More specifically:

- 46 indicators were calculated from data provided by municipalities exclusively, via a questionnaire.

- 43 indicators were calculated from data retrieved from national or regional databases; of these, 32 were from the various databases of ISTAT, the Italian National Institute of Statistics.
- 12 indicators were calculated with mixed sources, partly with data provided by municipalities and partly with data retrieved from national or regional databases (Questionnaire + other sources).

***Table 1 Data sources used in the RCS 2021 indicator set.***

| Source | Source of information | N. | Web link |
|---|---|---|---|
| Municipal data | Questionnaire | 46 | |
| ISTAT – Italian National Institute of Statistics | ISTAT – A misura di comune | 15 | http://amisuradicomune.istat.it/aMisuraDiComune/ |
| | ISTAT – Ambiente Urbano | 7 | https://www.istat.it/it/archivio/244648 |
| | ISTAT – SDGs | 5 | https://www.istat.it/it/benessere-e-sostenibilit%C3%A0/obiettivi-di-sviluppo-sostenibile/gli-indicatori-istat |
| | ISTAT – Permanent census 2018-2019 | 2 | https://esploradati.censimentopopolazione.istat.it/databrowser/#/it/censtest |
| | ISTAT General database | 2 | https://www.istat.it/ |
| | ISTAT - URBES | 1 | https://www.istat.it/it/archivio/92375 |
| Other national or regional databases than ISTAT | ISPRA | 5 | http://www.ost.sinanet.isprambiente.it/Reportindicatorismry.php |
| | Health ministry | 2 | http://www.dati.salute.gov.it/dati/homeDataset.jsp |
| | ARPA (regional environmental agencies) | 2 | |
| | AGCOM (Communications Guarantee Authority) | 1 | |
| | Customs and monopolies agency | 1 | |
| Mixed sources | Questionnaire + other sources | 12 | |
| **Total** | | **101** | |

Source: Author's elaboration

## 2.2.3 Alignment to other SDG frameworks

The alignment to international or national SDG monitoring frameworks was also specified for all 101 indicators. More specifically, all indicators were classified as directly derived from or similar to the indicators of:

- The Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development
- The indicators included in the BES (*Benessere Equo e Sostenibile*) – fair and sustainable welfare, elaborated by ISTAT.
- The indicators included in the *European Handbook for SDG Voluntary Local Reviews* (Siragusa et al. 2020).

As summarised in Table 2, 42 indicators are directly aligned with the UN SDG indicator framework indicators (15 directly and 27 with proxy indicators), 21 indicators are the same used by the BES (15 directly and 6 with

proxy indicators), and 16 indicators are aligned to those described in the European Handbook for SDG Voluntary Local Reviews (Siragusa et al. 2020) (10 directly and 6 with proxy indicators).

***Table 2 SDG monitoring frameworks and number of indicators used and referenced as proxy***

| SDG monitoring frameworks | Same indicator | Proxy indicator | Total |
|---|---|---|---|
| Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development | 15 | 27 | 42 |
| BES (*Benessere Equo e Sostenibile*) – fair and sustainable welfare | 15 | 6 | 21 |
| European Handbook for SDG Voluntary Local Reviews (Siragusa et al. 2020) | 10 | 6 | 16 |
| **Total** | **35** | **39** | **74** |

Source: Author's elaboration

## 2.2.4 Type of target municipality, territorial scope, and municipal competence

Each indicator target a specific type of municipality, with the distinction in the total set between all municipalities, only provincial capitals, and only coastal municipalities. Moreover, each indicator can be either quantitative or qualitative and relate to different level of competence concerning municipalities:

- Quantitative indicator concerning phenomena of exclusive or prevailing competence of the municipality.
- Qualitative indicator (otherwise called "milestone event") concerning phenomena of exclusive or prevailing competence of the municipality.
- Quantitative indicator concerning phenomena of shared competence among different municipalities (for example: Union of Municipalities, Provinces).
- Quantitative indicator concerning contextual phenomena, for which municipalities have no or very marginal competence.

A summary description of the indicators, by type of municipality, is included in Table 3, while Table 4 includes information on the number of indicators measuring the scope of exclusive competence of municipalities, of groups of municipalities, or which are not in the scope of competence of municipalities.

***Table 3 Type of municipality***

| Type of municipality | N. |
|---|---|
| All municipalities | 73 |
| Provincial capitals | +27 |
| Coastal municipalities | +1 |

***Table 4 Territorial scope***

| Territorial scope | N. |
|---|---|
| Municipal level | 56 |
| Supra-municipal level | 12 |
| Context indicators | 33 |

Source: Author's elaboration

### 2.2.4.1 "Milestone events" as qualitative indicators

"Milestone events" indicators are a specific and innovative feature of the RCS indicator set. These indicators measure:

- The existence or non-existence of sectoral planning instruments, for example, concerning sustainable mobility, the removal of architectural and sensory barriers, the Sustainable Energy and Climate Action Plan (SECAP) and others: there are nine milestone events of this type in the RCS indicator set.

- The approval of specific administrative acts, such as the appointment of a mobility manager coordinator, regulations for common goods, and others: there are six milestone events of this type.

These administrative acts are proxies useful to monitor the policy choices of immediate effect consistent with the objectives of the 2030 Agenda. Their adoption allows for distinguishing municipalities that move forward to medium-term sustainability goals. In a few cases, these are compulsory acts for Italian municipalities. One of these is the Urban Plan for Sustainable Mobility (*Piano Urbano per la Mobilitá Sostanibile – PUMS*), which is mandatory for metropolitan cities and municipalities above 100,000 inhabitants in Italy. In addition, the PUMS is a prerequisite, according to the latest Italian legislation, for municipalities wishing to access state funding for mass rapid transport or cycling projects.[10]

## 2.3 The 2021 monitoring exercise

At the end of July 2021, RCS sent out questionnaires to municipalities members of the network. These questionnaires were shared as editable PDFs technically suitable for automatically extrapolating the entered data.

32 municipalities were initially involved in the survey. Additional 12 municipalities that joined RCS by October 2021 also received the questionnaire. Municipalities that joined at a later stage (from November 2021) were not involved in the 2021 survey but will be involved in that of 2022. These 44 municipalities have a total number of 883,598 residents (as of January 1, 2020). Out of the 44 municipalities, six are provincial capitals: Cuneo, Mantova, Nuoro, Pesaro, Prato, and Rovigo. The largest municipality is Prato, with nearly 200,000 inhabitants; the smallest is Testico, with less than 200 inhabitants.

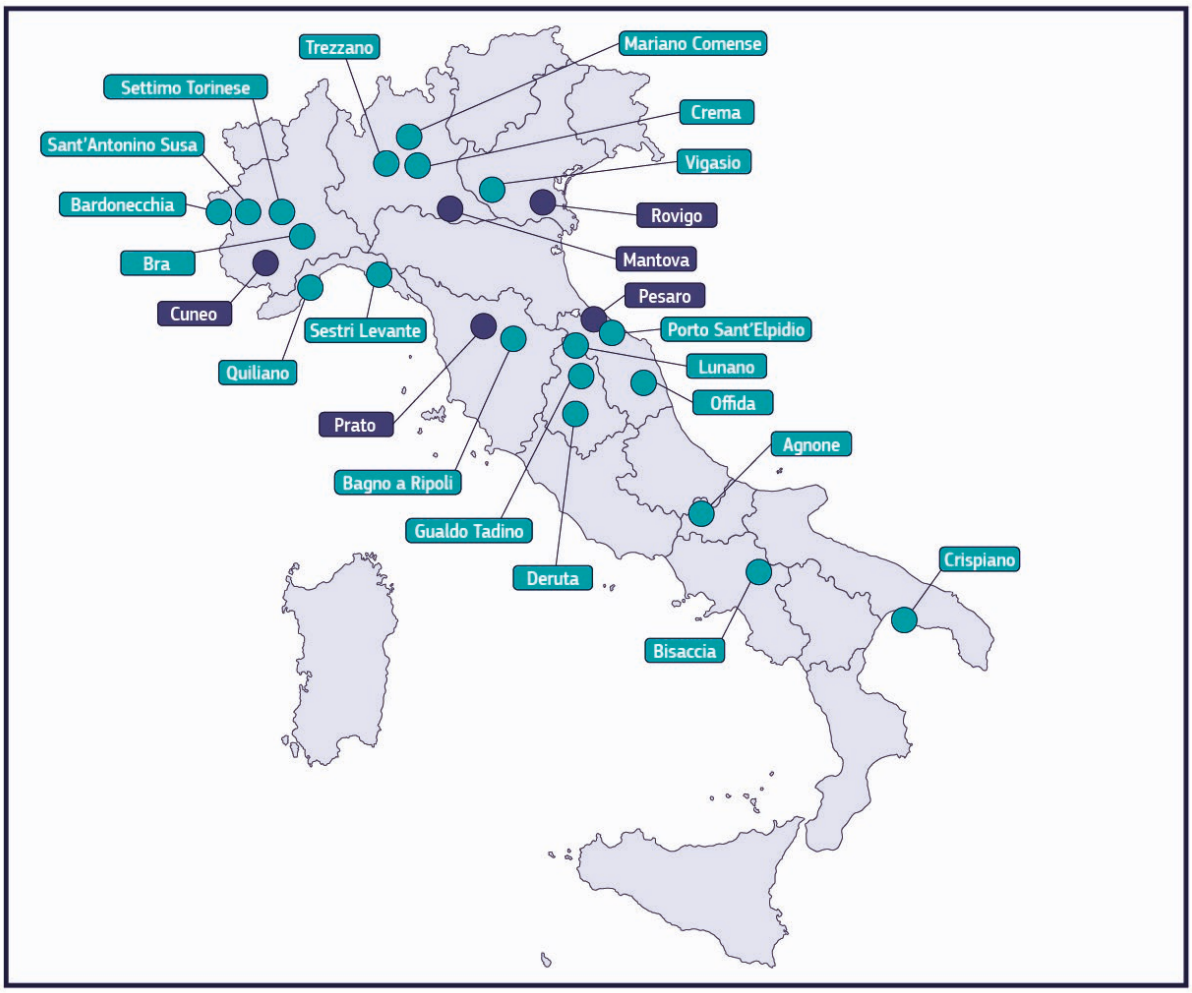
RCS organized a webinar for municipal technicians to explain the questionnaire and how to complete it.

It should be noted that the 2021 framework include indicators that address only the provincial capitals: therefore this type of municipalities had to reply to more questions in the questioner. This is because the national legislation imposes to provincial capitals to retain and collect more indicators than other types of municipalities.

Out of the 44 municipalities that received the questionnaire, only 24 completed and returned it to RCS. Among them, five are provincial capitals. The 24 municipalities have a total population of about 750,000 inhabitants. The average response time was 109 days, ranging from 37 to 262 days. Figure 2 shows the 24 municipalities that completed the questionnaire.

10 https://www.mit.gov.it/nfsmitgov/files/media/documentazione/2022-10/VademecumPUMSver.consolidata20221012.pdf

*Figure 2 Municipalities surveyed by RCS in 2021*




(1) Blue dots represent provincial capitals and green dots represent other municipalities.

Source: Author's elaboration

## 2.3.1 Filling in the questionnaires

In most of the 24 municipalities that replied to the questionnaire, technical experts carried out the compilation. Most of the required data were already available for the municipalities and did not need any special processing. Data are usually available on indicators such as:

- 2.2 – Community gardens.
- 4.5 – Children enrolled in kindergartens
- 11.4 – Pedestrian areas
- 11.3 – Green areas for children.
- 11.9 – Density of bicycle lanes.
- 11.12 – Green cars

In many other cases, municipalities are even obliged to publish on their institutional websites this information, for example:

- 1.1 Additional municipal personal income tax (*Addizionale Irpef comunale*).
- 5.2 and 5.3 Women in decision-making (*Donne in consiglio e giunta comunale*).

- 8.5 – Timeliness of invoice payments.
- 12.2 – Separate waste collection.
- 15.1 – Land consumption.
- 17.1 – Revenue collection capacity.

Municipalities reported some problems in the collection of data for which it was necessary to consult supra-municipal bodies. Concerning the qualitative indicators, the collection of information was very simple, and no municipality reported issues.

### 2.3.2 Data integration

The first step to prepare the 2021 monitoring reports was to integrate the data provided by municipalities with those from other sources. In most of the cases, data were retrieved manually from the online platforms of the entities listed in 2.2.2 because it was not possible to proceed with automated software (e.g., by scraping).

### 2.3.3 Analysis of indicators' performance with the setting of targets or the comparison between municipal, provincial, regional, and national data

In addition to the analysis of the 101 RCS indicators, based on recommendation from ASviS, the Scientific Committee decided to add a more in-depth analysis of 12 specific indicators for provincial capitals and nine for non-provincial capitals. RCS identified adapted targets for eight of those, while made comparisons with data from higher administrative levels (province, region, country) for the other four. In addition, RCS used the Eurostat method to set additional targets (i.e., for goal 7: energy consumed from renewable sources) when no targeted was set by European, national, or regional institutions.[11]

The identification and adaptation of targets followed these criteria, in order of priority:

(a) Values defined by international organisations and/or institutions (UN, European Union, Italian Government, Regional Government, Municipal Government).

(b) Values defined by the experts of the ASviS Working Groups.

(c) Values calculated following Eurostat's methodology (e.g., halving the value of an indicator by half by 2030).

The in-depth analysis involved the following Goals and indicators:

- Goal 3: number of deaths and injuries in road accidents (European target: halving by 2030 compared to 2019)
- Goal 4: percentage of college graduates in the 30/34 age group (European target: 50 percent by 2030). Comparison between provincial, regional, and national
- Goal 5: gender employment gap (European target: halving by 2030 compared to 2020). Comparison between provincial, regional, and national
- Goal 6: efficiency of the water distribution network (ASviS-defined target: 90% by 2030)
- Goal 7: energy consumed from renewable sources (target: 1% average annual increase)
- Goal 8: employment (European target: reach 78% by 2030). Comparison between provincial, regional, and national
- Goal 9: ultra-wideband coverage (European target: 100% by 2026). Comparison between provincial, regional, and national

11 Over 1% average annual increase very positive trend, between 0 and 1% average positive trend, between -1% and 0 average negative trend, below -1% average annual decrease very negative trend

- Goal 11: supply of local public transport (ASviS target: average annual increase of 1% from 2004 to 2030)
- Goal 12: waste production per capita (target defined by Regional Waste Plans)
- Goal 12: percentage of separate waste collection (target defined by Regional Waste Plans)
- Goal 13: $CO_2$ reduction produced in the municipality (target defined by Sustainable Energy and Climate Action Plan - SEPACs, if approved)
- Goal 15: land consumption (European target: zero new land consumption by 2050)

### 2.3.4 Report drafting

RCS wrote a report for each municipality that replied to the questionnaire. The reports have the same structure, decided by the Scientific Committee. They are composed of the following sections:

— What is the Network of Sustainable Municipalities.

— The 2030 Agenda and the Sustainable Development Goals (SDGs).

— Possible commentary signed by the mayor.

— Description of the methodology used to calculate trends (Eurostat method).

— Assessment of trends for each quantitative indicator, dividing them by territorial scope.

— Overview of trends, making explicit the percentage of quantitative indicators with a positive trend over the total number of indicators assessable.

— Assessment of the situation of each qualitative indicator (milestone events).

— Summary framework of qualitative indicators.

— Any descriptive note on specific aspects.

— Textual commentary on the main aspects that emerged.

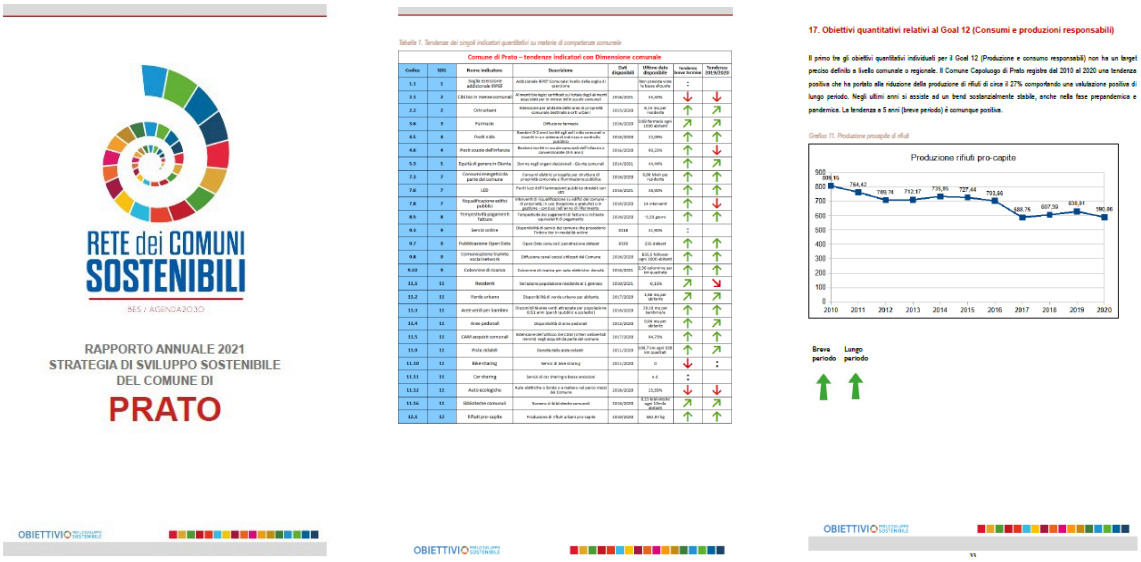
— Tips and suggestions for improving the indicators.

— 12 examples of targets' assessment and vertical comparisons across different administrative levels.

— Appendix: list of RCS indicators.

The Report is designed to address public administrators, municipal technicians, stakeholders, and citizens. Administrators and technicians can explore the status and progress of the municipality, and gain insights useful for political decisions. Reading the report, stakeholders and citizens can increase their knowledge and awareness of sustainable development in their territories and can make proposals for improvement. Each municipality may decide to include in the report an introduction or foreword signed by the mayor, and notes accompanying the analysis of indicators. Figure 3 shows the cover and some inside pages of the Prato Municipality Report.

***Figure 3 Inside pages of the Prato Municipality Report***




Source: Rete Comuni Sostenibili

Some municipalities have published the 2021 Report on their websites, allowing the public to access the full text. This is the case of, for example, Cuneo[12] and Crispiano[13].

Given that RCS monitoring only started in 2021, so far none of the municipalities has used the Report produced by the Network of Sustainable Municipalities to complete a proper Local Voluntary Review. The Municipality of Crispiano has considered developing a full SDG Voluntary Local Review (VLR). A VLR is indeed not only the statistical analysis, but also a process that encompass both the monitoring and the analysis of the achievements with respect to the SDGs at local level. VLRs include the discussion on achievements, shortcomings, and strategies for sustainable development.

## 2.3.5 Communication and dissemination activities

After receiving the individual RCS SDG monitoring reports, many municipalities organised events to present them to the public. For example:

- Offida (Marche)[14] organized a public event attended by public administrators, associations, and citizens.
- Crispiano (Puglia) presented the Report as part of a two-day event dedicated to local sustainability.
- Settimo Torinese (Piemonte) organized two events. The first is with City Council Commissions, the second is a public event with citizens.
- Quiliano (Liguria) organized a public assembly, inviting associations, experts, and citizens.
- Prato (Toscana)[15] organized a whole day called "SDGs Marathon", in which the 2021 Report was presented.
- Gualdo Tadino (Umbria) organised a public event inviting economic categories and associations.
- Bardonecchia (Piemonte) held an event attended by administrators and technicians from the municipality.

12 https://www.comune.cuneo.it/fileadmin/comunecuneo/content/ammorganiz/pianificazionestrategica/agendalocale2030/cuneo101indicatorisostenibilita.pdf
13 http://dati.comune.crispiano.ta.it/dataset/reti-dei-comuni-sostenibili-bes-agenda2030
14 Video recording: https://www.youtube.com/watch?v=YT0gAWZutPA&t=6s
15 Video recording: https://www.youtube.com/watch?v=w0fbei4nhE0&t=15s

- Sant'Antonino di Susa (Piemonte) organised a public event where also citizens and administrators from neighbouring municipalities were invited.

- Trezzano sul Naviglio (Lombardia) organised a public assembly, inviting associations, experts, and citizens.

# 3. ASSESSMENT OF THE ACHIEVEMENT OF THE SDGS IN THE MUNICIPALITIES PARTICIPATING IN THE NETWORK OF SUSTAINABLE MUNICIPALITIES

This chapter analyses the results from the 2021 monitoring exercise conducted by RCS with 24 municipalities. To aggregate results for the 101 indicators and related data points, the 24 municipalities were classified according to the following criteria:

1. Type of municipality: Provincial Capitals, no-provincial Capitals, Coastal municipality
2. Population size: municipalities with less than 5,000, municipalities with between 5,000 and 15,000, municipalities with more than 15,000 inhabitants.
3. Geographical location: Northern, Central, and Southern Italy.

The results were then assessed according to these elements:

- The ability of the municipalities to provide up-to-date and reliable data.
- Analysis of qualitative indicators on phenomena within the municipalities' competence.
- Trends of quantitative indicators on phenomena within the municipalities' competence.
- Trends of quantitative context indicators.
- Difference between trends on quantitative context indicators and trends on phenomena within the municipalities' competence.

An overall analysis was also performed by calculating the share of indicators with a positive trend out of the total number of calculable indicators. Each indicator had equal weight in the calculation of this share: each indicator had equal importance, and no weighted averages or composite indicators were calculated. The method used is replicable over time; therefore, it will be possible to study the evolution of the contribution of Italian municipalities.

## 3.1 Methods for trend calculation

### 3.1.1 Trend calculation for quantitative indicators

The methodology used to calculate progress and trends in quantitative indicators is consistent with Eurostat methods used to monitor the SDGs at EU level (inter alia Eurostat 2022), as follows:

↑ Significant progress

↗ Moderate progress

↘ Moderate regress

↓ Significant regress

: Trend that cannot be calculated (none or less than 3 data points).

More in detail, if target is set, trends are calculated as follows:

↑ Achievement of at least 95% of the set target.

↗ Achievement of the set target between 60% and 95%.

↘ Achievement of the established target between 0 and 60%.

↓ Regression of the indicator from the first year of the series.

: Trend that cannot be calculated (none or less than 3 data points).

If no target is set, as in the case of RCS quantitative indicators, trends are calculated as follows:

↑ average annual progress of at least 1% (≥1%).

↗ average annual progress between zero (inclusive) and 1% (≥0% and <1%).

↘ average annual regress between -1% and zero (<0% and >-1%).

↓ average annual regress beyond -1% (inclusive) (≤-1%).

: trend that cannot be calculated (none or less than 3 data points).

### 3.1.2 Trend calculation for qualitative indicators

The trend calculation method was developed ad hoc for qualitative indicators, including "Milestone events". For the evaluation of planning instruments[16], the following criteria were adopted:

▶▶ Presence of the instrument or advanced stage of implementation or monitoring.

▶ Process initiated in the last 5 years but not completed, or act approved more than 5 years ago.

◀ Process initiated more than 5 years ago and not yet concluded.

◀◀ Process not initiated.

## 3.2 Calculated indicators

As illustrated above, not all quantitative indicators could be calculated, because of lack of sufficient data points (none or less than 3 data points). Table 5 reports the number of quantitative indicators calculated out for the 24 municipalities.

***Table 5 Quantitative indicators calculated***

| Type of indicator | Municipal indicators | Supra-municipal indicators | Context indicators | Total |
|---|---|---|---|---|
| Total Indicators | 725 | 172 | 659 | 1,556 |
| Calculated Indicators | 585 | 101 | 272 | 958 |
| Share of indicators calculated | 80.69% | 58.72% | 41.27% | 61.57% |

Source: Author's elaboration

Overall, the percentage of quantitative indicators calculated was 61.57 percent. Quantitative indicators on municipal matters were calculated for more than 80 percent, which represents a significant result in terms participation of municipalities in the data collection. As for indicators on matters of supra-municipal competence, the calculated indicator rate is almost 60 percent. For context indicators, mainly calculated using data from national or regional institutions, the author was able to calculate only 41 percent due to the lack of recent data.

16 Depending on the type of instruments and related legislation, the adoption and approval of master plans, mobility plans, etc. may take months or years.

## 3.3 Insights into quantitative indicators

Table 6 shows the share of indicators with positive trend and indicators with negative trend breakdown between provincial capital municipalities and non-provincial capital municipalities. Provincial capitals have the highest percentage of positive indicators compared to other municipalities, at an average across the 24 municipalities of about 70 per cent.

***Table 6 Indicators with positive trend and indicators with the negative trend by provincial capital municipalities and non-provincial capital municipalities***

| Municipality type | Number of municipalities | Positive trend | Negative trend |
|---|---|---|---|
| Provincial capital | 5 | 71.95% | 28.05% |
| Non-provincial capital | 19 | 68.70% | 31.30% |

Source: Author's elaboration

With respect to the indicators' types, a synthesis is provided in Table 7. First, it illustrates a wide gap between quantitative indicators on matters of municipal competence and context indicators. For provincial capitals there was a positive trend in 81.29% of indicators on matters of municipal competence, more than a 20-percentage point gap compared to context indicators. For non-provincial capitals, the gap widens to more than 25 points.

***Table 7 Positive and negative trends by Provincial capital and non-capital and by territorial scope***

| Indicator type | Provincial Capital | | Non-provincial Capital | |
|---|---|---|---|---|
| | Positive trend | Negative trend | Positive trend | Negative trend |
| Municipal | 81.29% | 18.71% | 78.60% | 21.40% |
| Supra-municipal | 65.31% | 34.69% | 75.00% | 25.00% |
| Context | 60.61% | 39.39% | 42.20% | 57.80% |

Source: Author's elaboration

By classifying the 24 municipalities according to the geographical location, coherently with Annex 2, it emerges that municipalities in Central regions had a positive trend in a slightly higher percentage than in the Northern regions and almost eight points higher than in the Southern regions. Some results with respect to indicator trends are described in Appendix[17].

***Table 8 Positive and negative trends according to the geographical location***

| Area | Number of municipalities | Positive trend | Negative trend |
|---|---|---|---|
| North | 13 | 69.83% | 30.17% |
| Centre | 8 | 71.57% | 28.43% |
| South | 3 | 63.89% | 36.11% |

Source: Author's elaboration

In Southern regions, quantitative indicators on municipal matters have a less positive trend than in the Centre and the North. The opposite happens for supra-municipal indicators. The largest gap is in context indicators: in

17 https://publications.jrc.ec.europa.eu/repository/handle/JRC132464

the South only 37 percent have a positive trend, compared with nearly 57 percent in Central Italy. With respect to indicator type, the result is reported in Table 9.

***Table 9 Positive and negative trends by territorial scope and northern, central, and southern municipalities***

| Indicator type | North | | Centre | | South | |
|---|---|---|---|---|---|---|
| | Positive trend | Negative trend | Positive trend | Positive trend | Negative trend | Positive trend |
| Municipal | 80.42% | 19.58% | 80.00% | 80.42% | 19.58% | 80.00% |
| Supra-municipal | 69.49% | 30.51% | 70.59% | 69.49% | 30.51% | 70.59% |
| Context | 45.89% | 54.11% | 56.57% | 45.89% | 54.11% | 56.57% |

Source: Author's elaboration

Municipalities were then divided into three groups according to the population size: less than 5,000 inhabitants, between 5,000 and 15,000, and over 15,000 inhabitants. There is not too much difference between small municipalities and larger municipalities, although in municipalities with more than 15,000 inhabitants the trend is positive in a slightly higher percentage of quantitative indicators.

***Table 10 Positive and negative trends by class of inhabitants***

| Number of inhabitants | Number of municipalities | Positive trend | Negative trend |
|---|---|---|---|
| < 5,000 | 6 | 66.35% | 33.65% |
| > 5,000 & < 15,000 | 5 | 67.90% | 32.10% |
| > 15,000 | 13 | 71.43% | 28.57% |

Source: Author's elaboration

For quantitative indicators on municipal matters, the difference is not large, although there is a higher percentage in larger municipalities, while municipalities with populations between 5,000 and 15,000 have the lowest share. Vice versa is the case for supra-municipal indicators, where municipalities with populations between 5,000 and 15,000 have the highest share of positive trends. The most striking gap is in the context indicators, where there is a very large difference between medium and large municipalities compared to small ones, which suffer more than others from the general situation (Table 11). This is significant, considering that most Italian municipalities fall right into this range summarises the data.

***Table 11 Positive and negative trends in quantitative indicators by class of inhabitants and territorial scope***

| Indicator type | Less than 5,000 | | Between 5,000 and 15,000 | | Over 15,000 | |
|---|---|---|---|---|---|---|
| | Positive trend | Negative trend | Positive trend | Negative trend | Positive trend | Negative trend |
| Municipal | 78.72% | 21.28% | 73.58% | 26.42% | 81.36% | 18.64% |
| Supra-municipal | 66.67% | 33.33% | 81.82% | 18.18% | 69.33% | 30.67% |
| Context | 32.69% | 67.31% | 51.11% | 48.89% | 53.14% | 46.86% |

Source: Author's elaboration

## 3.4 Insights into qualitative indicators

During data processing, it was decided to change the type of four indicators from quantitative to qualitative.

The indicator 9.4 measures the number of digital services, out of a set of defaults, available on the *PagoPA app* that enables digital payment of fees, taxes, penalties, etc. , while indicator 9.5 measures the number of digital services, out of a set of defaults, present on the *IO app* dedicated to public services accessible with *SPID* (Public Digital Identity System[18]). For both indicators 9.4 and 9.5, the shift to qualitative type was due to the fact that the number of services on which the indicators were calculated was very limited. Therefore, it was preferred to convert these in categorical variables. The following criteria were adopted to analyse indicators 9.4 and 9.5:

- ▶▶ 50% or more of services activated
- ▶ equal to or more than 25% and less than 50% of services activated
- ◀ services activated less than 25%
- ◀◀ no services activated

Indicator 9.7 originally measured the number of datasets and/or downloads accessible through open data platforms. This indicator was changed in a qualitative one because very few municipalities kept track of the number of downloads of datasets, but they had information on the presence or absence of published datasets. Therefore, Indicator 9.7 now measures the presence or absence of datasets accessible through open data platforms by using only two classes:

- ▶▶ at least one dataset
- ◀◀ no dataset

Indicator 12.3 measures the activation of unit pricing[19] for payment of waste service. This indicator was changed in a qualitative type because it was preferred to monitor the transition to unit pricing rather than the number of users involved, more specifically, indicator 12.3 can now take only the following values:

- ▶▶ Unit pricing activated
- ◀◀ Unit pricing not activated

Keeping in mind that the sample of 24 municipalities cannot be representative of the situation of all Italian municipalities, an overview of the results for qualitative indicators is reported in Table 12. Looking at the number of municipalities that provided data is possible to notice that, in some cases, this number is bigger than the number of provincial capital municipalities. Therefore, it is possible to infer that also municipalities that were not requested to provide data still provided information for some indicators.

18 https://www.spid.gov.it/en/

19 Unit pricing, also known as variable rate pricing or pay-as-you-throw, is a system under which residents pay for municipal waste management services per unit of waste collected rather than through a fixed fee.

*Table 12 Trends of qualitative indicators for 24 municipalities*

| Code | SDG | Name | Description | Respondent Municipalities | ⏭ | ▶ | ◀ | ⏮ | Positive | Negative |
|---|---|---|---|---|---|---|---|---|---|---|
| 3.9 | 3 | Actions against noise pollution | Approval of the acoustic zoning plan or similar instruments against noise pollution | 24 | 2 | 19 | 0 | 3 | 87.50% | 12.50% |
| 5.4 | 5 | Gender | Gender budgeting | 24 | 0 | 2 | 0 | 22 | 8.33% | 91.67% |
| 5.5 | 5 | Initiatives to combat violence against women | Presence of at least one among: anti-violence centre, shelter for women, family mediation desk | 9 | 9 | 0 | 0 | 0 | 100.00% | 0.00% |
| 7.4 | 7 | SEAP/SECAP approval | Presence of CO2 reduction planning tool and emissions' monitoring | 14 | 11 | 3 | 0 | 0 | 100.00% | 0.00% |
| 7.7 | 7 | Plan for building energy regeneration | Approval of plan for energy regeneration of school and municipal buildings | 24 | 2 | 8 | 0 | 14 | 41.67% | 58.33% |
| 9.2 | 9 | Digital Transition Plan | Approval of digital transition plan or local digital agenda | 24 | 1 | 14 | 0 | 9 | 62.50% | 37.50% |
| 9.4 | 9 | Services in PagoPA app | Services and fees payable via PagoPA | 24 | 12 | 6 | 3 | 3 | 75.00% | 25.00% |
| 9.5 | 9 | Services in IO app | Digital services included in the national IO app | 24 | 2 | 7 | 8 | 7 | 37.50% | 62.50% |
| 9.6 | 9 | Big data usage | Approval of plan for the use of urban big data | 5 | 0 | 0 | 0 | 5 | 0.00% | 100.00% |
| 9.7 | 9 | Open Data publishing | Municipal open data: download dataset | 24 | 6 | 3 | 0 | 15 | 37.50% | 62.50% |
| 10.3 | 10 | Architectural barriers' removal plan | Presence of a Plan for the Elimination of Architectural Barriers | 24 | 2 | 9 | 0 | 13 | 45.83% | 54.17% |
| 11.6 | 11 | City Mobility Manager | Appointment of the coordinator of Mobility Managers appointed by companies and organisations with more than 100 employees | 5 | 2 | 0 | 0 | 3 | 40.00% | 60.00% |
| 11.7 | 11 | Sustainable mobility | Presence of urban planning tools for sustainable mobility | 7 | 5 | 1 | 0 | 1 | 85.71% | 14.29% |
| 11.17 | 11 | 5G | Adoption of Antenna Plans or planning tools for 5G | 24 | 2 | 9 | 0 | 13 | 45.83% | 54.17% |
| 12.3 | 12 | Punctual charging Waste tax | Punctual pricing in waste collection and disposal service | 24 | 2 | 0 | 0 | 22 | 8.33% | 91.67% |
| 15.2 | 15 | Zero Land Consumption Plan | Land use plans that do not provide for further land use | 24 | 6 | 2 | 0 | 16 | 33.33% | 66.67% |
| 15.4 | 15 | Urban Green Master Plan | Presence of urban green planning tools | 24 | 2 | 6 | 0 | 16 | 33.33% | 66.67% |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (Master Plan \| Green infrastructure) | | | | | | |
| ***16.2*** | **16** | Pact for urban security | Signing of the Urban Security Pact with the Ministry of the Interior or Prefecture | 6 | 5 | 0 | 0 | 1 | 83.33% | 16.67% |
| ***17.2*** | **17** | Common Goods Regulation | Presence of regulations for the shared administration of common goods | 24 | 1 | 4 | 0 | 19 | 20.83% | 79.17% |
| ***17.3*** | **17** | BES and SDGs in the Unified Planning Document | Inclusion of Agenda 2030 / BES objectives within the Unified Planning Document, with annual monitoring systems | 24 | 6 | 0 | 0 | 18 | 25.00% | 75.00% |

Source: Author's elaboration

## 3.5 Availability, quality, replicability, and scalability of collected data.

As mentioned previously, the set of indicators used for the 2021 monitoring was experimental, with the objective of assessing for each individual indicator the availability, quality, replicability, and scalability of the collected data.

The most critical issues with respect to data availability concern indicators retrieved from ISTAT and other national or regional public entities because they are not always timely (i.e., *Literacy and numerical proficiency level of students* and *Per-capita income*). For example, indicators collected from the "ISTAT - A misura di Comune" platform were available only for 2 years and not very recent. Data available only years later after the collection reduce their potential use for policy. A possible solution, even if not optimal, could be to proceed with specific agreements to obtain such data, free of charge, in a processable form. Tables in the Appendix[20] provide an overview, indicator by indicator, of the availability of data, the last year available, and the issues that emerged.

With respect to the quality of the data, the authors considered indicators retrieved from ISTAT and ISPRA reliable. On those provided by municipalities, verifications have been made with respect to possible errors, outliers, or anomalies. Almost all identified cases were typing mistakes, reversal of years, and misunderstanding of the unit of measurement. All cases were resolved during the data analysis.

The potential replicability of the method used by RCS in other national contexts depends on several elements. In particular:

- Competencies of municipalities (or comparable levels of administration).
- Difference, if any, between the competencies of capital municipalities of higher administrative levels (such as the Italian Provinces or Regions) versus other municipalities.
- Regulatory obligations of municipalities.
- Analysis of the National Strategies for Sustainable Development against the targets identified for municipalities (to better calibrate qualitative indicators).
- Public data availability for context indicators.

Having resolved some specific features, which will be discussed in chapter 4.3, the set is immediately scalable to hundreds of municipalities, potentially reaching all 7,904 Italian municipalities.

20 https://publications.jrc.ec.europa.eu/repository/handle/JRC132464

The first point to ensure the scaling up to a larger number of municipalities is **the implementation of the management platform**, which is necessary to better automate many steps of the data processing and readable information extraction.

The second point is to **stimulate the participation** of a larger number of municipalities in the project. In November 2022, the number of municipalities participating in RCS increased from 44 to 70. The objective of RCS is to reach 100 municipalities in 2023. About 450 municipalities, in addition to those already adhering, have expressed interest in joining RCS and have requested information. A possible incentive could be to reward municipalities participating in specific funding programmes with higher scores, only if they agree to monitor the SDGs.

The third point is **the integration of the newly created knowledge in local strategies**. Mayors and municipal councillors can be more involved in the monitoring of progress, for example, through discussions in the governing bodies of municipalities (thematic commissions, municipal councils). This is the case of the Municipality of Settimo Torinese, which decided to bring its 2021 Report for discussion in the relevant Council Commission. The aim is to create a closer connection between the monitoring and local strategies, integrating the knowledge created with indicators into the strategic planning documents of municipalities. This is also the case of the Municipalities of Prato and Mantova, which have included their 2021 Report in the Unified Planning Document 2022-2024, a fundamental mandatory act of planning. RCS advises each municipality to vote formally its Report through discussion and acknowledgement by the City Council.

The fourth point is **citizen involvement** via communication activities, dissemination, and presentation of the 2021 Report.

The fifth point considers **resources**. The national governments or regions could provide funding dedicated to municipalities for SDG monitoring activities and facilitating the hiring of competent and dedicated staff. This could include supporting the drafting of Voluntary Local Reviews.

**Box 2 The German SDG-Portal project**

In Germany, the SDG-portal[21] publishes 120 indicators for municipalities with more than 5,000 inhabitants, based on national databases. In the "SDG Indicators for municipalities" project, municipalities were involved by the German government only in the implementation phase of the system, but not in the provision of data[22]. This implies that the current knowledge base might be further integrated, along the lines of the Italian experience presented in this report, with data provided voluntarily by individual municipalities.

**Box 3 The case of Flanders**

In the region of Flanders, Belgium, an experiment was launched involving the monitoring of qualitative and quantitative SDG indicators at the municipal level[23]. These indicators were calculated through national data and local data, provided by the municipalities themselves. This makes that experience like the Italian Network of Sustainable Municipalities. However, in the case of Flanders the analysis and representation of the data was left to the municipalities (for example, the municipalities of Willebroek and Harelbeke implemented platforms for the dissemination of results). Starting from the Italian experience a standard template of Report could be made available to the different municipalities so that each one could compile it for its own territory.

21 https://sdg-portal.de/en/
22 More info is available here: About the project - SDG Portal (sdg-portal.de)
23 https://www.local2030.org/library/620/Local-Indicators-for-the-2030-Agenda-Sustainable-Development-Goals.pdf

# 4. CONSIDERATIONS ON DATA GAPS, METHODOLOGICAL ISSUES, AND RECOMMENDATIONS

## 4.1 The relationship with municipal experts

No monitoring would have been possible without the involvement of municipalities' experts. When joining the RCS, municipalities provided the name and contact information of a political representative (mayor or councillor) and a technical contact point[24].

As for the support needed from municipalities to fill in the questionnaire, 13 Municipalities out of the 44 to which the questionnaire was sent, used the communication channels (e-mail, phone calls and messages) activated by RCS to share concerns and questions. 11 municipalities filled in the questionnaire without requesting any support, while 20 out of 44 municipalities did not fill in the questionnaire due to lack of staff or underestimation of the project. Solving the second aspect is one of the goals RCS has set for 2023.

The most frequently asked questions from municipalities concerned:

- Ways to edit and save the editable PDF file, due to different software used by municipalities.
- Possibility of entering even unsolicited data, e.g., from non-capital municipalities regarding data requested only from provincial capitals; this question was answered positively.
- Request to hold virtual meetings with the entire municipal council or technical staff to specify data entry methods and project objectives; this question was answered positively.
- How to specify local aspects, for example, the associated management with other neighbouring municipalities of some municipal services; this instance was answered by proposing the writing of specific notes, to be attached to the Report.
- Advice on how to retrieve some data within the scope of the municipality's activities.
- Units of measurement of some requested data.
- How to deal with total or partial absence of the required data for a single indicator.

In two cases, the mayors directly collected the data and filled in the questionnaire. In another case, the mayor reported that he was unable to return the completed questionnaire due to the absence of personnel he/she considered competent. In nine cases, the questionnaire was returned completed without any questions or requests.

In general, the approach of municipal technicians was very cooperative, as RCS monitoring was also seen as a tool to enhance the performance of offices, to bring out insufficiently known information on the demand and supply of services, and to set up planning tools based on data. The approach of the mayors and councillors involved was also positive and proactive as the monitoring project was seen as an opportunity to let citizens know the results of the administrative action.

Some municipalities analysed the set of indicators so thoroughly that they even propose possible new indicators and additional data sources.

[24] This role is usually held by the technical representatives appointed by the municipalities: the municipal secretary, manager or officer for the environment office, manager, or statistical officer

## 4.2 Proposals for improving the set of indicators

At the conclusion of the first year of monitoring, the Scientific Committee analysed the 2021 set of indicators and, based on the critical issues that emerged and described earlier, approved some changes.

Six indicators were removed due to lack of data:

- 3.5: Hospital inpatient beds, only available at the provincial level.
- 8.2: Number of employees, redundant since the framework also includes data on the employment rate.
- 8.4: NEETs, available only for very few municipalities.
- 11.3: Green areas for children, data provided by few municipalities.
- 11.1: Low-emission car sharing, data not held by municipalities.
- 15.6: Vegetation, data not available.

The Scientific Committee reclassified three additional indicators as qualitative instead of quantitative:

- 1.1: Additional Municipal personal income tax (Addizionale IRPEF comunale): exemption threshold level. The question that will be asked to municipalities will be, "What Additional Municipal personal income tax applies below 12,000 euros?"; the interpretation will be as follows: Below 0.25 = very positive, between 0.26 and 0.5 = positive, between 0.51 to 0.75 = negative, above 0.75 = very negative[25];
- 5.5: Initiatives to combat violence against women, as already made explicit in the previous table, but with a renewed interpretation: Two or three services: very positive, One service: positive, Zero but in activation: negative, Zero and not planned: very negative. These services can also be of supra-municipal level (Union of Municipalities for example).
- 8.5: Timeliness of invoice payment. In the 2021 measurement, municipalities were not very efficient (paying bills on average 4-5 months after the due date) but with positive assessment for shortening even by very few days compared to previous years. From this, the evaluation of the qualitative indicator will be as follows: Negative indicator (payment before due date) = very positive, Within 14 days after due date = positive, Between 15 and 30 days = negative, Over 30 days = very negative.

Six indicators initially considered only for provincial capital municipalities have been extended to all municipalities, given the extensive data availability:

- 2.1: Organic food in municipal canteens
- 5.5: Initiatives to combat violence against women
- 7.3: Total energy consumption by municipality
- 7.4: SEAP/ SECAP[26] approval
- 7.6: LED lighting points of public street lighting
- 9.10: Electric vehicle charging stations.

Six indicators that were conceived to be collected from all municipalities have been restricted to provincial capital municipalities only:

- 3.4: Nursing homes
- 4.3: Literacy proficiency
- 4.4: Numerical competence
- 6.4: Water dispersion
- 11.8: Local public transport
- 11.14: $PM_{10}$

Five indicators have been added, in the attempt to fill some gaps. Those are *Organic Farming*, *Nutrition education and combating food waste*, *City toponymy*, *Energy communities*, and *Milestone events*. The *Milestone events* were included to study the evolution of milestone events with a positive trend over time. An attempt to

25 The maximum Additional Municipal personal income tax is 0.8%.
26 Sustainable Energy Action Plan (SEAP) / Sustainable Energy and Climate Action Plan (SECAP)

give a quantitative assessment to the set of qualitative indicators. Table 13 illustrates the key elements of these new indicators.

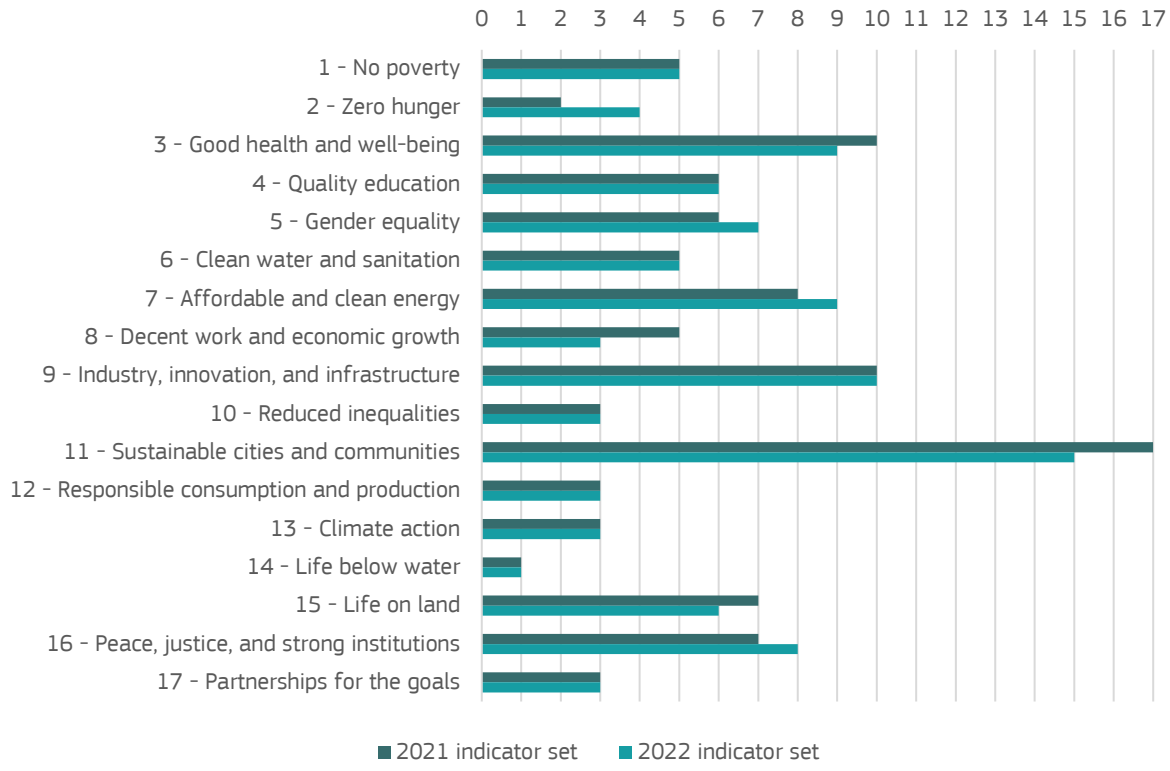
***Table 13 New indicators for RCS 2022 monitoring***

| Code | SDG | Name | Description | Formula | Source | Geographical level | Territorial scope |
|---|---|---|---|---|---|---|---|
| 2.3 | 2 | Organic Farming | Organic area or in organic conversion | Percentage of organic or in-conversion agricultural areas out of total agricultural area | Sinab / Regions / Mipaaf | All municipalities | Context indicator |
| 2.4 | 2 | Nutrition education and combating food waste | Initiatives in schools on nutrition education and combating food waste. | a. No Initiative (very negative) / b. Only invitation to schools to address the issue (negative) / c. Distribution of information materials (positive) / d. Events that involved at least 5% of the elementary and middle school population (very positive) | Questionn aire | All municipalities | Municipal level / Milestone events |
| 5.7 | 5 | City toponymy | Gender equity in new toponymic designations | Toponymic dedications to women / toponymic dedications to men (in the year) | Questionn aire | All municipalities | Municipal level |
| 7.9 | 7 | Energy communities | Commitment of the municipality to the activation of energy communities in the territory | a. Preliminary study underway / b. Approval of a Resolution welcoming Energy Communities / c. Energy community process started in the municipal territory / d. Presence of at least one energy community in the municipal territory | Questionn aire | All municipalities | Municipal level / Milestone events |
| 16.8 | 16 | Milestone events | Overall summary indicator on milestone events. | Percentage of set sentinel events with positive assessment out of total assessable events | RCS | All municipalities | Municipal level |

Source: Author's elaboration

In addition, dual sources have been eliminated: each indicator will have a single source either through a questionnaire or through databases. Finally, an agreement is being worked out with ISTAT to obtain more up-to-date data with respect to 18 indicators. Against this reworking, Figure 4 illustrates the key differences between the 2022 and 2021 indicator sets.  Table 14, Table 15, and illustrate by the territorial scope, geographical level, and source.

*Figure 4 Changes between the 2021 and the 2022 RCS indicator set, by SDG*




Source: Author's elaboration

*Table 14 Changes between the 2021 and the 2022 RCS indicator set, by territorial scope*

| Territorial scope | Set 2022 | Set 2021 | gap |
|---|---|---|---|
| All municipalities | 74 | 73 | +1 |
| Provincial capital municipalities | 25 | 27 | -2 |
| Coastal municipalities | 1 | 1 | = |
| **Total** | **100** | **101** | **-1** |

Source: Author's elaboration

*Table 15 Changes between the 2021 and the 2022 RCS indicator set, by geographical level*

| Geographical level | Set 2022 | Set 2021 | gap |
|---|---|---|---|
| **Municipal level** | 37 | 41 | -4 |
| **Municipal level / Milestone events** | 20 | 15 | +5 |
| **Supra-municipal level** | 12 | 12 | = |
| **Context indicators** | 31 | 33 | -2 |
| **Total** | **100** | **101** | **-1** |

Source: Author's elaboration

***Table 16 Changes between the 2021 and the 2022 RCS indicator set, by source.***

| Source | | 2021 Set | 2022 Set | Difference |
|---|---|---|---|---|
| Municipal data | Questionnaire | 58 | 58 | = |
| ISTAT – Italian National Institute of Statistics | ISTAT – A misura di comune | 16 | 14 | -2 |
| | ISTAT – Ambiente Urbano | 6 | 6 | = |
| | ISTAT - SDGs | 5 | 5 | = |
| | ISTAT - Permanent census 2018-2019 | 2 | 3 | +1 |
| | ISTAT – General database + URBES | 3 | 2 | -1 |
| Other national or regional databases than ISTAT | ISPRA | 5 | 5 | = |
| | Regional agency for environmental protection *Agenzia Regionale per la Protezione dell'ambiente (ARPA)* | 2 | 2 | = |
| | Communications Regulatory Authority - *Autorità per le Garanzie nelle Comunicazioni (AGCOM)* | 1 | 1 | = |
| | Customs and monopolies agency | 1 | 1 | = |
| | Ministry of Health | 2 | 1 | -1 |
| | Rete Comuni Sostenibili | 0 | 1 | +1 |
| | SINAB Sistema d'informazione Nazionale sull'Agricoltura Biologica | 0 | 1 | +1 |
| | **Total** | **101** | **100** | **-1** |

Source: Author's elaboration

An additional RCS idea is to identify a wider subset of quantitative indicators on which municipal-level targets could be set, for example to 2030. These targets could be included in the DUPs (*Documento Unico di Programmazione* – Single programming document) or otherwise approved by local governing entities. In this way, evaluation of trends would take place in the presence and no longer in the absence of targets for this group of indicators, as indicated by Eurostat.

## 4.3 2022 Monitoring exercise: modalities and timing

The 2022 monitoring exercise started in July 2022. As a preliminary activity, a webinar was held for all member municipalities and those interested in joining to explain the new set of indicators and how to fill in the new questionnaire. In November 2022, questionnaires were sent out via the new digital platform Era (see Annex 1). Building on the experience of 2021, RCS asked municipalities to return the questionnaire within 60 days. Drafts of the 2022 Reports will be sent to municipalities 15 days after completing the Questionnaires. The municipalities will then be able to report any errors in the data, trend calculations, or request more details, add comments, or correct errors. In the 2022 monitoring, contingent times has given for this exchange - no more than 10 days.

Given the positive past experiences, external communication actions of the results obtained, and presentation of the Report will be encouraged, through: Press releases and conferences, discussion and acknowledgement by the City Council, discussion in the competent Municipal Commission, presentation and discussion with stakeholders, presentation and discussion with citizens, thematic meetings, dissemination through RCS and municipal social channels.

68 municipalities joined the 2022 monitoring exercise, including eight provincial capitals and the Metropolitan city of Turin. Together, they are inhabited by 3,704,742 citizens. As of November 2022, 69 municipalities had joined RCS and 438 municipalities were interested in joining. For the adhering municipalities 27.5 per cent are in northern regions, 46.4 per cent in central Italy and 26.1 per cent in the south. While 38.8 per cent of the

municipalities interested in membership are in the North of Italy, 27.6 per cent in the Centre, and 33.6 per cent in Southern regions.

# 5. CONCLUSIONS

Sustainability issues and the 2030 Agenda for Sustainable Development (United Nations 2015) have been at the centre of the action by national and local institutions for several years in Italy. Even though since 2015 several Italian policymakers developed multilevel actions aligned with the SDGs, no Italian local government had published a Voluntary Local Review before 2021.

Only in the last couple of years, several regions and metropolitan cities published their VLRs on the UN website, where a global repository is hosted. More specifically, the Metropolitan City of Florence published its VLR in 2021. In 2022 several Regions publish Voluntary Regional Reviews: Autonomous Region of Sardinia, Emilia-Romagna, Liguria, Abruzzo, Marche, Lazio, and Umbria Regions and also some Metropolitan Cities: Bologna, Genoa, Rome, Bari, Messina, and Reggio Calabria. However, no Italian municipality has yet published its VLR on the UN website.

In 2021, the RCS started to address the monitoring of the 2030 Agenda in Italy at the local level. This new network and, more importantly, its offer of services, tools, and training activities for municipalities, has expanded the number of municipalities involved in SDG monitoring in Italy. In addition, if in 2021, 24 municipalities participated in the monitoring, RCS's goal is to further increase the number of municipalities involved in 2023.

Several features of the RCS have fostered local governments participation: availability of a knowledge base on sustainability issues; implementation of a digital platform for filling out questionnaires that guarantees traceability and secure storage of data; strong emphasis on dissemination of preliminary results; creation of a network of relationships among the municipalities participating in the Network, with the sharing of best practices; collaboration with ASviS, which has increased the credibility of the entire project.

The publication and communication of the results from the 2021 monitoring, although it involved only 24 municipalities, enabled RCS to spread the content of its activities more widely, attracting additional municipalities. As many as seven municipalities joined the project in May and June 2022 alone.

Thus, the Italian context, already aware of the relevance of sustainable development as a model for local institutions as well, has welcomed the experience of the Sustainable Municipalities Network.

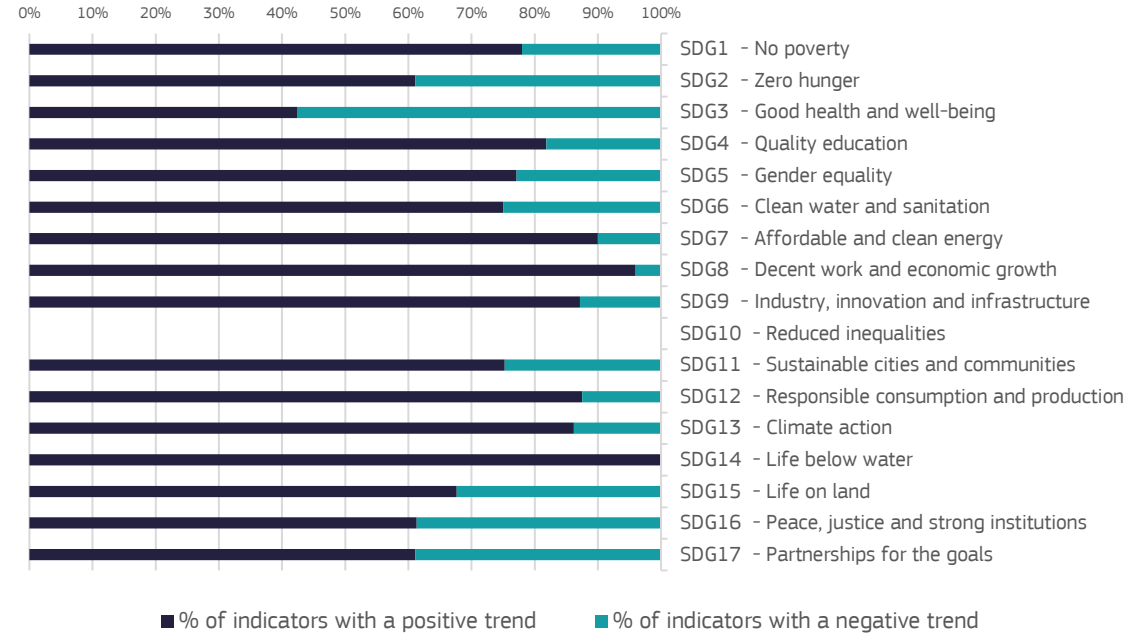
Some municipalities after having participated to the monitoring exercise promoted by the Network of Sustainable Municipalities, also started working on the elaboration of a first VLR (Crispiano, Ancona and others).

The commitment of municipalities participating in the network has been key to its success. Administrators and technicians from the 24 municipalities involved in the project collaborated intensively. The data provided by the municipalities filled much of the knowledge needed to calculate the indicators. In fact, the indicators on municipal or supra-municipal competencies calculated were 80.69 percent of the total. Considering all indicators, including context indicators, the percentage of indicators calculated is 61 percent. Moreover, given that the set of indicators was representative of all 17 SDGs, and given the high response rate, the results can be considered a reliable method for measuring municipal policy progress toward the 2030 Agenda and its Goals.

Indicator trends were analysed from the perspective of the 17 SDGs across the 24 municipalities involved in this project.

Figure 5 shows the results for each goal. The percentage refers to all quantitative indicators. The best performance was achieved in Goal 8 (Decent work and economic growth), with 96% of indicators with a positive trend, and in Goal 7 (Industry, innovation, and infrastructure), with 90% of indicators with a positive trend. More work needs to be done concerning the monitoring of Goal 10.

***Figure 5 Trends by goal (2021 monitoring exercise)***




Source: Author's elaboration

When assessing the trends is necessary to keep in mind that those municipalities involved in the project are already among the most committed, and also that trends have been calculated on indicators for which there was an availability of data allowing so. Therefore might refer to dimensions already better addressed by local administrations.

The final research question explored under what conditions the Italian experience could be adapted to other European countries.

Measuring achievement of the SDGs at local level, given the experience described in this report, can be replicated in other European countries if municipalities are involved in the process. It has to be also considered that their involvement promotes an awareness of their responsibility in achieving a sustainable future.

The involvement of both local administrators, starting with mayors, and municipal technicians is crucial. Politicians need to be convinced and aware that monitoring is an opportunity for transparency, participation, and potential consensus growth. Technicians should perceive monitoring as an occasion to improve further the knowledge available locally.

The experience also shows that the membership of new municipalities in the Network of Sustainable Municipalities project has occurred through the emulation of neighbouring municipalities. In the first year, it can be assumed that municipalities that joined the network were already sensitive and virtuous on the issue of sustainability. In the second-year, the new municipalities that joined the network because perceived the project as an opportunity.

The potential replicability of the initiative presented in this report in other European countries and beyond might consider the steps illustrated in Figure 6.

*Figure 6 Suggested steps to replicate the RCS approach*


Source: author's elaboration

The Italian experience of the Network of Sustainable Municipalities has identified a possible framework and method to scale up the number of municipalities measuring their contribution to achieving the Sustainable Development Goals.

Many of the targets related to the 17 SDGs need the contribution of local communities to be achieved. However, this report reinforce the notation that the 2030 Agenda for Sustainable Development and its SDGs can be achieved only if institutions at all levels give their contribution. Moreover, improvement and monitoring are two sides of the same coin, since hardly we can improve on issues that cannot be monitored in a holistic way.

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# LIST OF ABBREVIATIONS AND DEFINITIONS

| | |
|---|---|
| AGCOM | *Autorità per le Garanzie nelle Comunicazioni* - Authority for Communications Guarantees |
| ALI | *Autonomie Locali Italiane* - Local Italian Autonomies |
| ARPA | *Agenzia Regionale Per l'Ambiente* - Regional Environment Agencies |
| AsviS | *Alleanza Italiana per lo Sviluppo Sostenibile* - Italian Alliance for Sustainable Development |
| BES | *Benessere Equo e Sostenibile* - Equitable and Sustainable Well-being |
| ISPRA | *Istituto Superiore per la Protezione e la Ricerca Ambientale* - Italian Institute for Environmental Protection and Research |
| ISTAT | Italian National Institute of Statistics |
| JRC | Joint Research Centre |
| PEBA | *Piani di Eliminazione delle Barriere Architettoniche* - Plan for the Elimination of Architectural Barriers |
| PUMS | *Piani Urbani per la Mobilitá Sostenibile* - Urban Plan for Sustainable Mobility |
| RCS | *Rete dei Comuni Sostenibili* - Network of Sustainable Municipalities |
| SDGs | Sustainable Development Goals |
| SEAP | Sustainable Energy Action Plan |
| SECAP | Sustainable Energy and Climate Action Plan |
| SNSvS | *Strategia Nazionale di Sviluppo Sostenibile* - National strategy of sustainable development |
| SPID | Sistema Pubblico di Identità Digitale - Public Digital Identity System |
| VLR | Voluntary Local Review |

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# ANNEXES

**Annex 1. Brief description of Era, the collaborative digital platform based on blockchain technology**

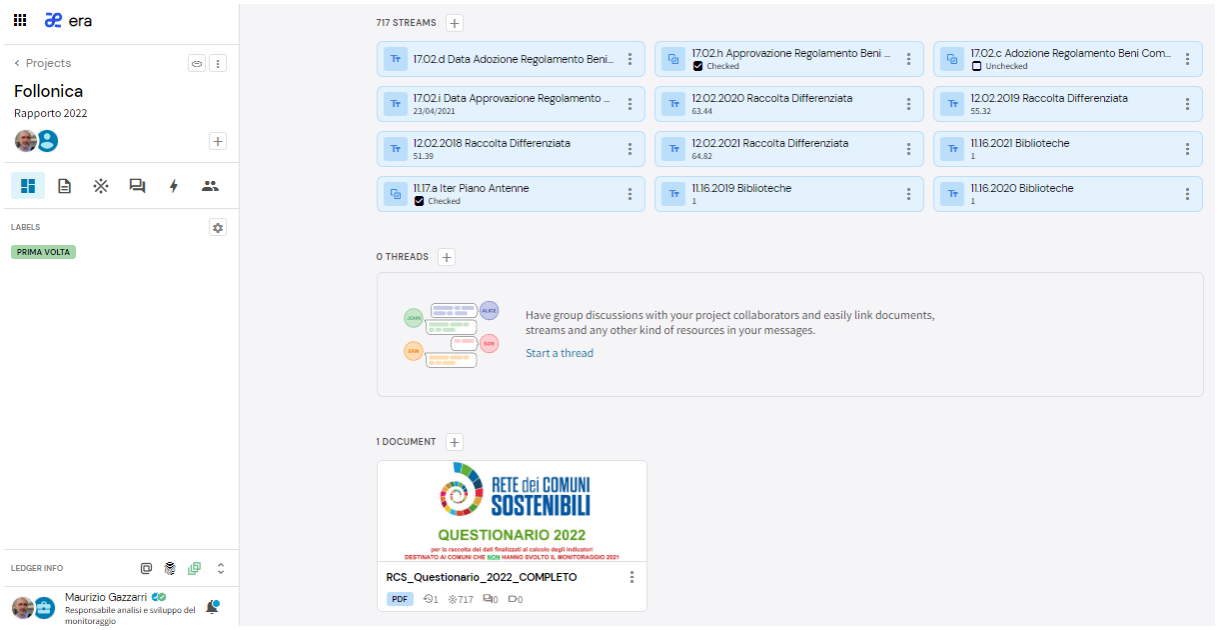
In June 2022, the Era platform, implemented by the company Traent (http://era.traent.com/), was publicly presented. In its beta phase, the platform was used and tested by four municipalities: Prato, Cuneo, Settimo Torinese, and Crispiano. The Era platform guarantees some specific features:

- It allows municipal technicians to fill the questionnaire online, also in a cooperative way.
- It allows municipalities to chat easily and immediately with the RCS, asking questions or giving improvement advices.
- It tracks and certifies, through blockchain technology, each piece of data used to calculate indicators; this factor is essential to ensure the robustness, quality, and source of data, even in the face of public scrutiny.
- It enables the sharing of useful documentation, in support of the data.
- It helps RCS member municipalities relate to each other, sharing best practices.
- It allows RCS to inform member municipalities about calls and funding opportunities on Agenda 2030 issues.
- It allows municipalities to download their data, facilitating further processing.
- Given its flexibility, it is adaptable to any international context and can potentially be used by existing or emerging RCS-like organizations in other countries in Europe and beyond.

An additional software is being implemented now, to enable a more automated processing of data and the preparation of Reports for each municipality. This will ensure scalability from a few dozen to hundreds of municipalities.

Figure 7 shows the screenshot in Era of one of the projects related to an RCS member municipality.

***Figure 7 The Era digital platform***



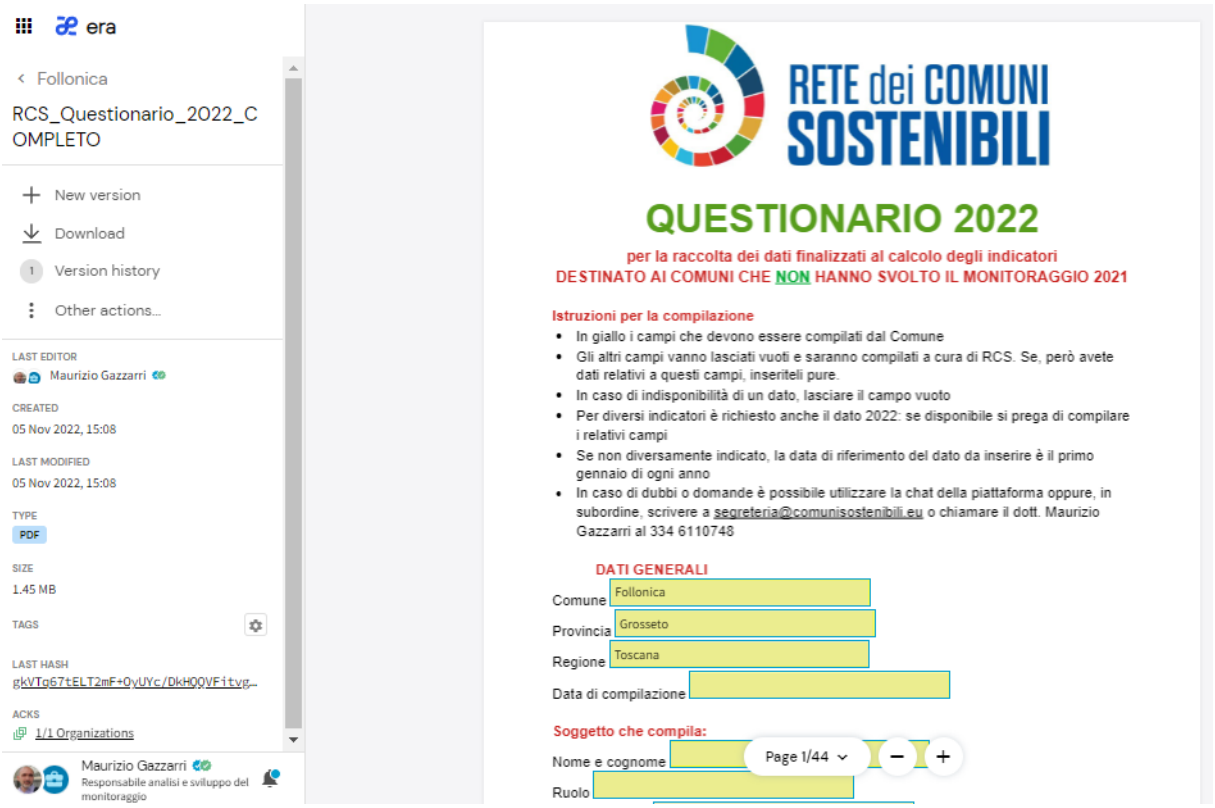

Source: ERA platform

The general data are on the left-hand side including the name of the municipality, and who can edit the questionnaire. On the top right are the streams of individual data, each managed with blockchain; in the centre

are the treads, i.e., the communications between RCS and the municipality's administrators and technicians; at the bottom is the questionnaire to be completed, which appears as in Figure 8.

The questionnaire is completed by the municipality's technicians and RCS. Data can be exported in a processable format. For each data point, the time of creation and any change, the name of the person who entered the data, and any useful information are stored (all with blockchain technology, therefore verifiable, and traceable).

***Figure 8 The RCS questionnaire in the ERA platform***




Source: ERA platform

**Annex 2. Geographical classification of the Italian Regions**

Northern regions: Valle D'Aosta, Piemonte, Liguria, Emilia-Romagna, Lombardia, Veneto, Trentino-Alto Adige, and Friuli-Venezia Giulia.

Central regions: Toscana, Marche, Lazio, Umbria.

Southern regions: Abruzzo, Basilicata, Molise, Campania, Puglia, Calabria, Sicilia, Sardegna.

## Annex 3. 2021 Sustainable Municipalities Network Indicators

*Table 17 2021 Sustainable Municipalities Network Indicators*

| *Code* | SDG | Indicator | Description | Source | Available Years | Municipality type | Territorial scope |
|---|---|---|---|---|---|---|---|
| *1.1* | **1** | Additional municipal personal income tax exemption threshold | Additional Municipal personal income tax (Addizionale IRPEF comunale): exemption threshold level | Questionnaire | At least last 5 years | Municipality | Municipal |
| *1.2* | **1** | Family income | Families with equivalent gross income below the amount of the social allowance | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *1.3* | **1** | Personal income | IRPEF taxpayers with total income below € 10,000 | ISTAT - A misura di Comune | 2014-2016-2017 | Municipality | Context |
| *1.4* | **1** | Social housing | Families benefiting from social housing compared to those entitled to it | Questionnaire | At least last 5 years | Municipality | Supra-Municipal |
| *1.5* | **1** | Work intensity | Low labour intensity of registered households | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *2.1* | **2** | Organic food in municipal schools' canteens | Certified organic food out of total food purchased for municipal schools' canteens | Questionnaire | 2017 | Provincial Capital | Municipal |
| *2.2* | **2** | Community gardens | Extent per inhabitant of municipally-owned areas designated as Community gardens | ISTAT - A misura di Comune + Questionnaire | 2014-2020 | Municipality | Municipal |
| *3.1* | **3** | Mortality rate | Mortality rate | Questionnaire | At least last 5 years | Municipality | Context |
| *3.2* | **3** | Fertility | Fertility rate | Questionnaire | At least last 5 years | Municipality | Context |
| *3.3* | **3** | Elderly dependency | Elderly dependency ratio | Questionnaire | At least last 5 years | Municipality | Context |
| *3.4* | **3** | Nursing homes | Places in assisted nursing homes | Questionnaire | At least last 5 years | Municipality | Supra-Municipal |
| *3.5* | **3** | Hospital beds | Beds in ordinary inpatient care for acute cases | Health Ministry | 2010/2019 | Municipality | Context |
| *3.6* | **3** | Pharmacies | Distribution of pharmacies | Questionnaire | At least last 5 years | Municipality | Municipal |
| *3.7* | **3** | Road accident injuries | Road accident injury index | ISTAT | 2014/2017 | Municipality | Context |
| *3.8* | **3** | Noise pollution | Noise controls in which at least one exceeding of limits was detected | ISTAT - A misura di Comune | 2015-2016 | Municipality | Context |
| *3.9* | **3** | Actions against noise pollution | Approval of the acoustic zoning plan or similar instruments against noise pollution | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *3.10* | **3** | Gambling | Diffusion of gambling | Customs and Monopolies Agency | 2015-2017 | Municipality | Context |
| *4.1* | **4** | High school graduates | High school graduates 25-64 years old | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *4.2* | **4** | Graduates | Graduates 30-34 years old | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *4.3* | **4** | Alphabetical competence | Students' level of literacy competence | ISTAT - A misura di Comune | 2017 | Municipality | Context |
| *4.4* | **4** | Numerical competence | Numerical competence level of students | ISTAT - A misura di Comune | 2017 | Municipality | Context |
| *4.5* | **4** | Children enrolled in kindergartens | Children 0-2 years old enrolled in municipal kindergartens | Questionnaire | At least last 5 years | Municipality | Municipal |
| *4.6* | **4** | Children enrolled in pre-schools | Children enrolled in municipal pre-schools or affiliated schools (3-5 years) | Questionnaire | At least last 5 years | Municipality | Municipal |
| *5.1* | **5** | Gender gap | Gender gap in employment rate | ISTAT Permanent Census 2018-2019 | 2018-2019 | Municipality | Context |
| *5.2* | **5** | Women in the Municipal Council | Women representation at local level - Municipal councils | ISTAT - A misura di Comune + Questionnaire | 2014/2021 | Municipality | Context |
| *5.3* | **5** | Women in the Municipal Board | Women in decision-making bodies - Municipality Board | ISTAT - A misura di Comune + Questionnaire | 2014/2021 | Municipality | Municipal |
| *5.4* | **5** | Gender budgeting | Gender budgeting | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *5.5* | **5** | Initiatives to combat violence against women | Presence of at least one among: anti-violence centre, shelter for women, family mediation desk | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |
| *5.6* | **5** | Family planning centres | Presence of family planning centres | Health Ministry | 2019 | Municipality | Context |
| *6.1* | **6** | Water supply | Water supplied per capita | ISTAT SDGs | 2012-2016, 2018 | Provincial Capital | Supra-Municipal |
| *6.2* | **6** | Water purification | Waste water purification rate | ISPRA | 2016 | Provincial Capital | Supra-Municipal |
| *6.3* | **6** | Water dispersion | Dispersion of drinking water | ISTAT - A misura di Comune | 2012-2013, 2014-2016 | Municipality | Supra-Municipal |
| *6.4* | **6** | Water quality | Water bodies achieving ecological quality (high and good) out of total water bodies of surface water (rivers and lakes) | Regional Environment Agencies | to be verified region by region | Municipality | Context |
| *6.5* | **6** | Water rationing | Adoption of rationing measures (reduction or suspension) of water for domestic use | ISTAT - Ambiente Urbano | 2016-2017 | Provincial Capital | Supra-Municipal |
| *7.1* | **7** | Energy consumption | Per capita consumption of electricity demanded from distribution networks | ISTAT - Ambiente Urbano | 2014-2019 | Provincial Capital | Context |
| *7.2* | **7** | Methane gas consumption | Methane gas per capita withdrawn from distribution networks | ISTAT - Ambiente Urbano | 2014-2019 | Provincial Capital | Context |
| *7.3* | **7** | Total energy consumption by the municipality | Per capita electricity consumption for municipally owned buildings and lighting | Questionnaire | At least last 5 years | Provincial Capital | Municipal |
| *7.4* | **7** | SEAP/SECAP approval | Presence of CO2 reduction planning | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | tools and emissions' monitoring | | | | |
| *7.5* | **7** | Photovoltaic | Share of photovoltaic energy in total energy consumption | ISTAT - Ambiente Urbano | 2015-2018 | Provincial Capital | Context |
| *7.6* | **7** | LED public lighting | Public street lighting points with LEDs | ISTAT - Ambiente Urbano + Questionnaire | 2016/2021 | Provincial Capital | Municipal |
| *7.7* | **7** | Energy regeneration | Approval of plan for energy regeneration of school and municipal buildings | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *7.8* | **7** | Redevelopment of public buildings | Requalification interventions of municipal buildings - owned, in use concluded in the reference year | ISTAT - Ambiente Urbano + Questionnaire | 2016/2020 | Provincial Capital | Municipal |
| *8.1* | **8** | Employment | Registered 25-64 year olds employed | ISTAT Censimento Permanente 2018-2019 | 2018-2019 | Municipality | Context |
| *8.2* | **8** | Production system | Number of employees | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *8.3* | **8** | Stable employment | Transformation from temporary to stable employment | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *8.4* | **8** | NEET | Young people aged 15-29 Not in Education, Employment, or Training (NEET) | ISTAT - URBES | 2001-2011 | Provincial Capital | Context |
| *8.5* | **8** | Timeliness of invoice payments | Timeliness of payments of the public administration to contractors | Questionnaire | At least last 5 years | Municipality | Municipal |
| *9.1* | **9** | High Technology | Production specialisation in high-tech sectors | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *9.2* | **9** | Digital Transition Plan | Approval of digital transition plan or local digital agenda | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *9.3* | **9** | Online services | Availability of municipality services entirely provided online | ISTAT - Ambiente Urbano | 2015/2018 | Provincial Capital | Municipal |
| *9.4* | **9** | Services in PagoPA app | Services and fees payable via PagoPA | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *9.5* | **9** | Services in IO app | Digital services included in the national IO app | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *9.6* | **9** | Big data usage | Approval of plans for the use of urban big data | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |
| *9.7* | **9** | Open Data publishing | Municipal open data platform: download dataset | Questionnaire | At least last 5 years | Municipality | Municipal / Milestone event |
| *9.8* | **9** | Communication via social networks | Dissemination of social channels used by the municipality | Questionnaire | At least last 5 years | Municipality | Municipal |
| *9.9* | **9** | Broadband | Building units reached by broadband and ultra-broadband (>30 Mbps) | ISTAT - A misura di Comune + AGCOM | 2015-2016-2020 | Municipality | Supra-Municipal |
| *9.10* | **9** | Charging stations for electric cars | Electric cars' charging stations: density | ISTAT - Ambiente Urbano + Questionnaire | 2016/2021 | Provincial Capital | Municipal |
| *10.1* | **10** | Per capita income | Gross income per capita | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *10.2* | **10** | Inequality | Ratio of the total equivalent income received by the 20% of the population with the highest income to the 20% of households with the lowest income | ISTAT - A misura di Comune | 2014-2015 | Municipality | Context |
| *10.3* | **10** | Architectural barrier removal plan | Presence of Plans for the Elimination of Architectural Barriers | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *11.1* | **11** | Residents | Change in resident population on 1 January | Questionnaire | 2010/2020 | Municipality | Municipal |
| *11.2* | **11** | Urban green areas | Availability of urban green areas per inhabitant | ISTAT - A misura di Comune + Questionnaire | 2017/2020 | Municipality | Municipal |
| *11.3* | **11** | Green areas for children | Availability of equipped green areas for population 0/11 years (public and school parks) | Questionnaire | At least last 5 years | Municipality | Municipal |
| *11.4* | **11** | Pedestrian areas | Availability of pedestrian areas | ISTAT - A misura di Comune + Questionnaire | 2013/2020 | Municipality | Municipal |
| *11.5* | **11** | Minimum environmental criteria in municipal procurement | Extension of the use of CAM (minimum environmental criteria) in procurement by the municipality | Questionnaire | At least last 5 years | Municipality | Municipal |
| *11.6* | **11** | City Mobility Manager | Appointment of the coordinator of Mobility Managers appointed by companies and organisations with more than 100 employees | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |
| *11.7* | **11** | Sustainable mobility | Presence of urban planning tools for sustainable mobility | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |
| *11.8* | **11** | Local public transport (LPT) | Seat-km per inhabitant offered by LPT | ISTAT - A misura di Comune / ISTAT - Ambiente Urbano | 2014/2016 | Municipality | Supra-Municipal |
| *11.9* | **11** | Bicycle lanes | Density of bicycle lanes | ISTAT - A misura di Comune + Questionnaire | 2011/2020 | Municipality | Municipal |
| *11.10* | **11** | Bike sharing | Bike sharing services | ISPRA + Questionnaire | 2011/2020 | Provincial Capital | Municipal |
| *11.11* | **11** | Car sharing | Low-emission car sharing services | ISPRA | 2013/2018 | Provincial Capital | Municipal |
| *11.12* | **11** | Green cars | Electric or hybrid or natural gas cars in the municipal fleet | Questionnaire | At least last 5 years | Municipality | Municipal |
| *11.13* | **11** | NO2 | Average annual NO2 concentration | ISTAT SDGs | 2013/2018 | Provincial Capital | Context |
| *11.14* | **11** | $PM_{10}$ | Urban air quality - $PM_{10}$ exceedances | ISTAT - A misura di Comune | 2014/2016 | Municipality | Context |
| *11.15* | **11** | $PM_{2.5}$ | Annual average concentration of $PM_{2.5}$ | ISTAT SDGs | 2012-2014/2018 | Provincial Capital | Context |
| *11.16* | **11** | Municipal libraries | Number of municipal libraries | Questionnaire | At least last 5 years | Municipality | Municipal |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *11.17* | **11** | 5G | Adoption of Antenna Plans or planning tools for 5G | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *12.1* | **12** | Waste per capita | Urban waste production per capita | ISPRA + Questionnaire | 2010/2020 | Municipality | Municipal |
| *12.2* | **12** | Separate waste collection | Percentage of separate waste collection | ISPRA + Questionnaire | 2011/2020 | Municipality | Municipal |
| *12.3* | **12** | Unit pricing for waste service | Unit pricing for waste collection and disposal service | Questionnaire | At least last 5 years | Municipality | Municipal / Milestone event |
| *13.1* | **13** | Energy requalification | Energy requalification of municipally-owned buildings | Questionnaire | At least last 5 years | Municipality | Municipal |
| *13.2* | **13** | Flood risk | Population exposed to flood risks | ISTAT SDGS | 2015, 2017 | Provincial Capital | Supra-Municipal |
| *13.3* | **13** | Landslide risk | Population exposed to landslide risks | ISTAT SDGS | 2015, 2017 | Provincial Capital | Supra-Municipal |
| *14.1* | **14** | Coastal water quality | Quality classification of the ecological status of coastal marine waters | Regional Environment Agencies | To be verified region by region | Coastal Municipality | Supra-Municipal |
| *15.1* | **15** | Land consumption | Land consumption | ISPRA | 2015/2017 | Municipality | Supra-Municipal |
| *15.2* | **15** | Zero Land Consumption Plan | Land use plans that do not provide for further land use | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *15.3* | **15** | Fragmentation | Fragmentation index due to urbanisation and infrastructure processes | ISPRA | 2015 | Municipality | Municipal |
| *15.4* | **15** | Urban Green Master Plan | Presence of urban green planning tools (Master Plan \| Green infrastructure) | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *15.5* | **15** | Total Green | Density of protected natural areas and urban green areas on municipal surface area | ISTAT - Ambiente Urbano | 2017-2018 | Provincial Capital | Municipal |
| *15.6* | **15** | Vegetation | Vegetation index | ISPRA | 2017-2019 | Municipality | Municipal |
| *15.7* | **15** | Planting | Increase in trees planted by the municipal administration | Questionnaire | At least last 5 years | Municipality | Municipal |
| *16.1* | **16** | Election turnout | Turnout in the first round of municipal elections | Questionnaire | at least last two elections | Municipality | Context |
| *16.2* | **16** | Urban security Pact | Signing of the Urban Security Pact with the Ministry of the Interior or Prefecture | Questionnaire | 2020 | Provincial Capital | Municipal / Milestone event |
| *16.3* | **16** | Municipal Police | Number of municipal/local police officers | Questionnaire | At least last 5 years | Municipality | Municipal |
| *16.4* | **16** | Video surveillance | Municipal video surveillance cameras connected with law enforcement agencies | Questionnaire | At least last 5 years | Municipality | Municipal |
| *16.5* | **16** | Predatory crimes | Total predatory crimes: house burglaries, robberies and pickpocketing | ISTAT | 2017-2018 | Provincial Capital | Context |
| *16.6* | **16** | Assistance to individuals with disability | Assistance to individuals with a physical and mental disability | Questionnaire | At least last 5 years | Municipality | Municipal |
| *16.7* | **16** | Home care for the old people | Old people people treated in integrated home care | Questionnaire | At least last 5 years | Municipality | Municipal |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *17.1* | **17** | Revenue collection capacity | Revenue collection capacity of the municipal administration | Questionnaire | At least last 5 years | Municipality | Municipal |
| *17.2* | **17** | Common Goods Regulation | Presence of regulations for the shared administration of common goods | Questionnaire | 2020 | Municipality | Municipal / Milestone event |
| *17.3* | **17** | BES and SDGs in the Unified Planning Document | Inclusion of Agenda 2030 / BES objectives within the Unified Planning Document, with annual monitoring systems | Questionnaire | 2020 | Municipality | Municipal / Milestone event |

Source: Author's elaboration

## Annex 4. Municipalities participating in the 2021 monitoring exercise

*Table 18 Municipalities participating in the 2021 monitoring exercise*

| *N.* | Municipality | Province | Region | Inhabitants |
|---|---|---|---|---|
| *1* | Bisaccia | AV | Campania | 3,685 |
| *2* | Sestri Levante | GE | Liguria | 18,149 |
| *3* | Quiliano | SV | Liguria | 7,061 |
| *4* | Mariano Comense | CO | Lombardia | 24,851 |
| *5* | Crema | CR | Lombardia | 34,504 |
| *6* | Trezzano | MI | Lombardia | 21,062 |
| *7* | Mantova | MN | Lombardia | 48,835 |
| *8* | Offida | AP | Marche | 4,895 |
| *9* | Porto Sant'Elpidio | FM | Marche | 25,646 |
| *10* | Lunano | PU | Marche | 1,474 |
| *11* | Pesaro | PU | Marche | 95,152 |
| *12* | Agnone | IS | Molise | 4,966 |
| *13* | Bra | CN | Piemonte | 29,592 |
| *14* | Cuneo | CN | Piemonte | 56,311 |
| *15* | Bardonecchia | TO | Piemonte | 3,148 |
| *16* | Sant'Antonino Susa | TO | Piemonte | 4,169 |
| *17* | Settimo Torinese | TO | Piemonte | 47,006 |
| *18* | Crispiano | TA | Puglia | 13,262 |
| *19* | Bagno a Ripoli | FI | Toscana | 25,556 |
| *20* | Prato | PO | Toscana | 194,223 |
| *21* | Deruta | PG | Umbria | 9,413 |
| *22* | Gualdo Tadino | PG | Umbria | 14,614 |
| *23* | Rovigo | RO | Veneto | 49,985 |
| *24* | Vigasio | VR | Veneto | 10,259 |

Source: Author's elaboration

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