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Report

The SDSN Italia SDGs City Index two years later: update Report

Laura Cavalli, Luca Farnia, Giulia Lizzi, Ilenia Romani, Mia Alibegovic, Fondazione Eni Enrico Mattei

Sergio Vergalli, Fondazione Eni Enrico Mattei e Università degli Studi di Brescia

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SDSN Italia

Abstract

After two years from the publication of the SDSN Italia SDGs City Index (FEEM, 2018), the following Report presents data updated to 2020 as the Italian capitals of provinces are concerned, proposing a comparison of them, where possible and subjected to appropriate methodological considerations, after two years.

Through the collection of data for 103 Italian municipalities-capitals of provinces, and based on 46 elementary indicators about 16 out of 17 Sustainable Development Goals (SDGs), the following Report intends to be a tool to increase the awareness of civil societies on the sustainability level of their territories, and at the same time to support local administrators in their decision making, providing not only a screenshot of their cities' distance to the targets of the 2030 Agenda, but also a comparison, if possible, among performances in a two-year timeframe.

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Acronyms

ASviS Alleanza Italiana per lo Sviluppo Sostenibile - Italian Alliance for Sustainable Development

CO_2 Carbon Dioxide

FEEM Fondazione Eni Enrico Mattei

FPA Forum Pubblica Amministrazione – Public Administration Forum

ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale – The Italian Institute for Environmental Protection and Research

MEF Ministero dell'Economia e delle Finanze – Ministry of Economy and Finance

NEET Not (engaged) in education, employment or training

OECD Organisation for Economic Co-operation and Development

SDGs Sustainable Development Goals

SDSN Sustainable Development Solutions Network

urBES Benessere Equo e Sostenibile in ambito Urbano-Metropolitano – Fair and Sustainable Wellness in the Urban-Metropolitan area

01 Introduction

By now the consideration of local territories, whether they are cities, provinces or regions, as fundamental in the achievement of the 17 Sustainable Development Goals defined in the 2030 Agenda of the United Nations, represents a shared belief. The Agenda, unanimously approved in 2015 by 193 countries, represents a policy plan of action with 17 Goals (SDGs), 169 targets and more than 230 elementary indicators, designed to meet the global challenges of our time.

In order to respond to the needs of the signatory countries and to adapt to their territorial, social and economic characteristics, from the very beginning the UN member states were asked to draft their own National Strategy for Sustainable Development, which in Italy was presented to the Council of Ministers on October 2, 2017 and was approved by the Inter-ministerial Committee for Economic Planning (CIPE) on December 22, 2017. Considering the heterogeneity of our peninsula, to which not by chance we usually refer as "geography of economic and social determinants", one single strategy, in order to be effective, is not enough; for this reason, it is important that all the Regions, and with them also their Provinces and Cities, establish their own planning agenda to be implemented and monitored over time.

In order to support local administrators along this journey, but also to increase awareness of civil societies on the sustainability level of their territories, Fondazione Eni Enrico Mattei first elaborated an index to measure the distance to targets of Italian municipalities-capitals of provinces (Cavalli and Farnia, 2018), then an interregional comparison able to derive the relevant regional placement, with respect to the average of all Italian regions, on each one of the 16 out of 17 Sustainable Development Goals (Cavalli et al., 2019) and finally a tool useful to Italian provinces and metropolitan areas (Cavalli et al., 2020).

Going forward in the process of measuring and monitoring local sustainability in Italy, Fondazione Eni undertook the promise of providing an update, every two years, of the above-mentioned tools, whether data are available and a comparison among them appropriate, in order to inform civil societies and local institutions on which are the milestones and the issues still affecting their territories.

The present Report aims at providing a screenshot of the sustainability levels of Italian municipalities-capitals of provinces, on the basis of the 2018 SDSN Italia SDGs City Index, thus sharing its methodology as well as the final objective of the analysis, and underlying similarities and differences of the data gathered and the results presented from 2018 to date only if the elementary indicators are actually comparable.

Italy in today's global context

If two years ago in the document "Global responsibilities: implementing the Goals" (SDSN, 2018), Italy ranked in 29th position among UN countries as regards sustainability levels, according to the more recent "Sustainable Development Report 2019" (SDSN and Bertelsmann Stiftung, 2019) containing the "SDG Index and Dashboard", Italy stands in 30th place in the ranking including 162 countries, moving backward of position from the previous analysis. The main issues affecting Italy's standing in the 2018 Report especially concerned SDGs 9 (Industry, innovation and infrastructure), 12 (Responsible consumption and production), 13 (Climate action) and 14 (Life below water); concretely better appeared the situation of Goal 1 (No poverty), 3 (Good health and well-being), 5 (Gender equality), 6 (Clean water and sanitation), 7 (Affordable and clean energy) and 15 (Life on land). After two years these results have not changed considerably: Italy is still far away from the achievement of a full sustainability on the same Goals 9, 12, 13 and 14, but it gets better in Goals 3, 6, 7, 15 and surprisingly also in Goal 16 (Pace, justice and strong institutions).

Citing again an international source, including in this case only the countries belonging to the Organization for Economic Cooperation and Development (OECD), from the 2019 edition of the Report "Measuring distance to the SDG targets", it emerges how the OECD countries are on average closer to the achievement of SDGs 6 (Clean water and sanitation), 7 (Affordable and clean energy), 11 (Sustainable cities and communities), 12 (Responsible consumption and production), 13 (Climate action), 14 (Life below water) and 15 (Life on land). To summarize, the overall performance is better on those Goals more related to green economy, but also to the access to basic services, to the preservation of coastal zones, and to the protection of ecosystems; it is worse concerning inequalities, educational and occupational outcomes, with strong criticalities as far as youth unemployment and gender disparity, but also relatively to violence and security. According to the OECD Report, based on 131 available indicators offering a coverage of 105 out of 169 UN targets, Italy has so far reached only 12 of them; however, at the same time, it is very close to the achievement of many others. Very positive are the results on water quality, on the access to clean and affordable energy and on the sustainable use of the ecosystems (target 6.3, 7.1, 15.1); it remains still very far away from the achievement of at least 8% of the targets, mainly linked to teacher training, violence against women, and the percentage of NEET (target 4.c, 5.2, 8.6).

Many national sources as well affirm how our country is actually very far away from the achievement of a full sustainability. Among others, the Italian Alliance for Sustainable Development (ASviS), in its 2019 Report, "L'Italia e gli Obiettivi di Sviluppo Sostenibile", pursues a detailed reflection on the Italian trends of the last years, showing multiple open issues also concerning those Goals our country looks closer to achieve. Besides the fact that Italy clearly neglected those 21 targets out of the 169 of the Agenda expiring in 2020, the situation has deteriorated also regarding the virtuous Goals 1 (Zero poverty), with a recent increase in absolute and relative poverty, 14 (Life below water) and 15 (Life on land) – respectively upon the conservation and lasting use of seas and marine resources and upon the protection of terrestrial ecosystems. The Report at hand also confirms the criticalities in the sector of industry and infrastructure (Goal 9), mainly linked to the waste of water resources; also the pressures concerning Goal 8 (Decent work and economic growth) are increasing, with high percentages of youth unemployment and many regions in real economic suffering, mainly in the South of the country, and those concerning Goal 11 (Sustainable cities and communities), considering the current slowness of our country in making homogeneous progresses over the national territory in this regard. Improvements, also confirmed by the 2019 ISTAT Report, are registered in Goal 4 (Quality education), Goal 7 (Affordable and clean energy), Goal 12 (Responsible consumption and production) and Goal 16 (Peace, justice and strong institutions).

Finally, it is worth reminding how Italy is showing much effort in the dissemination of sustainable development as well as in the awareness of civil society. In this regard, in August 2019 the Law over the introduction of school civic education was approved (Legge 20 agosto 2019, n. 92), which in article 3 explicitly mentions the 2030 Agenda as part of the "specific achievements for the improvement of competencies and particular learning objectives", as evidence of the importance at present granted to the topic of sustainable development.

The role of cities: reaching the SDGs while promoting quality

As many times reminded, the process of the 2030 Agenda localization is essential to make its guidelines efficient based on each territory's specificity. The universal character of the 17 Sustainable Development Goals, actually, does not preclude the primary necessity of contextualizing its contents to a territorial level; rather, it recognizes the peculiarity of some local situations very different from one another. For this reason, the scaling down of the Agenda at local level takes place depending on the characteristics and the specific needs of the different territories (UNDP, 2016) and through the formulation, implementation and monitoring of ad hoc strategies. In this sense, a global development not declined in single realities could not be sufficient to reach the very desired change of paradigm (Cavalli, 2018); instead, local administrations, urban and rural communities play a major role in the achievement of the SDGs and in the overcoming of the obstacles existing at local level (UN Economic and Social Council, 2018).

It is important to underline how referring to the localization and the territorial scaling down of the 2030 Agenda implies recognizing the strengths and weaknesses of all the areas under consideration, in this case the urban ones. This means, on one hand, to modernise and support the most difficult and vulnerable realities, and, on the other, to rethink the megalopolis in order to make them more inclusive and sustainable. In fact, Goal 11 (Sustainable cities and communities) includes them both, also considering how by 2050 urban agglomerates, which are growing in the most developed countries as well as in those

deemed emerging or developing, will host ¾ of our humanity.

Cities play a major role in the path towards the achievement of sustainable development and it is important to analyse all their dimensions and facets, priorities and criticalities, to define and promote strategies able to make them more sustainable. In thinking and planning those strategies one must consider their inner nature of do-ut-des: in fact, the services they offer, from energy to occupation, education, security and health, depend on a precise and fragile system made of public administrations, citizens, companies and facilities. It is a complicated interweaving that functions thanks to different actors and sectors, with many and diverse needs.

Just considering (and thanks to) this network, cities are fundamental in the localization of the 2030 Agenda and, in order to reach the 17 SDGs in an integrated manner, they request a greater effort by those living in and governing them. The latter, actually, have the responsibility to systematize decisions from the top to the bottom and vice versa, with the aim of multiplying the resources and amplifying the impact capacity. Incorporating in this process an overall appropriate programming implies the consideration of a long-term framework, extended enough to introduce improvements in the wellbeing of citizens and in the quality of the city – quality of services, quality of the air, just to mention some. The policies of local administrators, as well as the daily choices of citizens, have to be guided by a sense of responsibility towards the future – in other words, by a vision of an integrated sustainability.

Objectives and methodology of the analysis

If the Report "Per un'Italia sostenibile: l'SDSN Italia SDGs City Index" calls itself a starting point and a stimulus for a reflection over the role of cities in the achievement of a full sustainability, the following update Report tries to make a step forward. Starting from the same indicators used for the analysis of the old City Index, the data for each one of them have been updated, where more recent ones were available, and supported by additional, new indicators able to further extend the analysis and provide a more precise representation of the results. The following analysis tries to study only those elementary indicators, that are not normalized, able to guarantee a reliable comparison of the results.

The objective is the same: on one hand to increase awareness of communities regarding sustainable development, on the other to provide a tool that can support local administrators in their policy making, in order for mayors, but also for higher institutions, to acquire awareness on the sustainability levels of their territories. Moreover, the following Report, likewise the first one published by Fondazione Eni Enrico Mattei in November 2018, aims at being useful for local operators to make them easily identify other cities with similar situations and challenges, thus facilitating the dialogue on a national scale over the manner through which is possible to catalyse progress and to face in an integrated fashion the problems our cities are called to solve.

The methodology used is the same of the first City Index (Cavalli and Farnia, 2018), which included, in essence:

1. The analysis of the 2030 Agenda as presented by the United Nations, therefore at an international level, then intersected with the National Strategy for Sustainable Development and the Urban Strategy;
2. The recognition of the sustainability indices existing at international and national level;
3. The identification of a set of elementary indicators (environmental, economic and social ones), data collection and elaboration of necessary information;
4. The creation of elementary indicators, both specific for each SDG and for the composite.

The analysis that conducted to the drafting of this Report considered the sustainability level of 103 cities-capitals of provinces, on the basis of 46 elementary indicators for 16 out of 17 SDGs with the exception, for comparability reasons, of Goal 14 (Life under water).
It is reminded how, despite the current Report uses a methodology that obviates to the deficiency of specific national quantitative targets, this lack does not enable a full measurement of the sustainability being material for the territory under consideration (Cavalli and Farnia, 2018). Despite the attempt to find targets aligned to the international ones and declined to the local level, the necessity to define national targets that are universally recognized persists

The data of the Report "SDSN Italia SDGs City Index" and of its update "SDSN Italia SDGs City Index two years later", with the collaboration of AICCRE, the Italian Association for the Council of European Municipalities and Regions, have converged in the project "SDGs Portal" of the Bertelsmann Stiftung. The Portal provides the community with a first and intuitive impression of the current status of their territories in the path towards sustainable development. Thanks to the visual representation of the results it is possible to make: a comparison after years (short, medium and long-run), an inter-city comparison (through individual or average values compared to other cities), a comparison among targets or current or planned data (respectively to final or interim targets). Thanks to this project, available for our cities-capitals of provinces both in Italian and in English, the users are able to obtain a first and intuitive screenshot of the current level of Italian cities in their path towards the achievement of the Sustainable Development Goals as defined by the United Nations.

02 Results

Before illustrating the results from the updated data of the SDSN Italy SDGs City Index, it should be recalled that, once again and years later, these are not presented with the intention of establishing a ranking of Italian cities-capital of provinces; on the contrary, the present Report intends to contribute to the definition of a dissemination and awareness instrument on the themes of sustainable development, as well as a support tool for local administrators, and public and private institutions, when choosing the most appropriate policies to be implemented. In this respect, the ultimate aim is that of identifying the priorities of each territory, detecting the strengths and weaknesses, and supporting their communities and administrations along the path towards full sustainability, integrating each Goal of the 2030 Agenda for Sustainable Development.

Amongst the 103 Italian cities-capital of provinces analysed, we can immediately notice that the average sustainability belongs to the yellow and orange “traffic light” range - hence standing within 20% and 80% of full sustainability. As shown by the composite index, obtained simultaneously considering all the basic indicators which constitute the individual Goals, setting at 100% the full accomplishment of the UN Agenda’s international targets, the average Italian city has reached the 53%. Specifically, there isn’t any city, amongst those analysed, which has reached more than 80% of overall sustainability (thus in the green range), and none which has reached less than 20% (thus in the red range): therefore, there is a real need for a greater and active involvement in the local sphere if we want to fully implement these Goals.

In general, the cities’ results and their distribution in the traffic light ranges are necessarily influenced by the choice of the indicators, and these, in turn, are influenced by data availability at municipal scale, or, in their absence, at provincial or regional scale.

Going into the details of the individual Goals, in the Italian cities SDG 1 (No poverty) is the one with the best results, with 54 cities-capital of provinces having reached the best outcome (green traffic light) and only five with the red traffic light. Immediately after we have SDG 6 (Clean water and sanitation) and SDG 17 (Partnership for the Goals) both with 29 cities in the green-traffic light range, and 62 and 51 cities, respectively, in the yellow range, for an overall result of a 60% targets’ achievement for both Goals. Critical issues emerge primarily in Goal 7 (Affordable and clean energy), in which as much as 44 cities have a red traffic light, and only one has a green. A similar situation applies for Goal 2 (Zero hunger), in which the red cities are 32, followed by 39 in orange, hence only with a 36% of targets’ achievement. A bad situation also concerns Goal 9 (Industry, innovation and infrastructure) in which 26 cities are in the red range, hence with a sustainability achievement lower than 20%, and 52 cities slightly above, within 20% and 50% of full sustainability (orange range). As far as SDGs 3 (Good health and well-being), 4 (Quality education), 8 (Decent work and economic growth) and 10 (Reduced inequalities), no city belongs to the best range, being most of them within the yellow range (Goal 3, 8, 10) and the orange one (Goal 4).

Those goals having at least one city with a sustainability level above 80% are Goal 11 (Sustainable cities and communities), with one city in green, none in red, and the remaining ones distributed between 20% and 80% of full sustainability - hence with yellow and orange traffic lights, so is Goal 5 (Gender equality) with a total of 91 cities with sustainability levels above 50% , and Goal 13, with 88 cities between the yellow and green range. Good results also for Goal 12 (Responsible consumption and production), Goal 15 (Life on land) and Goal 16 (Peace, justice and strong institutions), with most of the cities being between the yellow and orange range, but still with several virtuous cities - especially regarding Goal 12, which presents 16 cities with green traffic lights - and hardly any in the red range – 2 cities in Goal 12 and 3 in Goal 16. Lastly, Goal 15 features 60 cities, hence more than half of the sample, in the yellow range, thus with sustainability levels between 50% and 80%.

The information included in the Dashboard is dual: on one hand it provides the graphic and qualitative identification of the results, with a four-colour legend resembling a traffic light (from green = close to the achievement of the target, to red = far from it), on the other hand the quantitative percentage of the achievement of the individual Goals’ targets for every city-capital of province. In the first column the cities are listed in alphabetical order, while the following 16 columns display each SDG.

What one immediately notices from the observation of the Dashboard, is, again the heterogeneous nature of the Italian territory, not coincidentally referred to as “geography of economic and social determinants”, which arises from a situation such that a city-capital of province particularly virtuous in an SDG, maybe is a long way from the achievement of another SDG.

Figure 1. SDSN Italia SDGs City Index (percentages of achievement of the SDGs)

City	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION	13 CLIMATE ACTION	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG	17 PARTNERSHIPS FOR THE GOALS
AGRIGENTO	33,5%	4,5%	39,6%	20,7%	45,9%	61,0%	60,9%	32,4%	15,4%	38,3%	74,8%	77,6%	73,7%	60,5%	24,5%	72,8%
ALESSANDRIA	86,2%	60,7%	40,5%	26,8%	60,8%	64,6%	65,7%	38,1%	21,6%	23,3%	45,0%	51,3%	69,1%	52,0%	57,6%	46,0%
ANCONA	88,8%	28,6%	62,2%	52,1%	67,6%	71,5%	42,7%	60,8%	62,8%	54,7%	58,2%	61,6%	81,5%	27,8%	66,5%	61,5%
AOSTA	93,5%	71,2%	43,5%	46,2%	71,2%	87,9%	6,1%	44,0%	7,1%	47,0%	65,7%	77,1%	69,1%	51,5%	63,8%	60,2%
AREZZO	90,2%	84,7%	66,8%	28,5%	67,6%	56,5%	20,8%	56,8%	23,6%	56,3%	68,8%	39,1%	69,9%	53,0%	90,8%	26,9%
ASCOLI PICENO	77,4%	28,0%	67,0%	33,7%	66,3%	80,8%	49,0%	62,7%	29,8%	40,3%	67,6%	73,6%	80,2%	34,7%	55,3%	59,2%
ASTI	84,8%	63,3%	52,4%	42,8%	52,4%	78,9%	15,4%	43,3%	15,4%	45,2%	40,7%	75,4%	68,6%	52,8%	74,2%	70,3%
AVELLINO	63,4%	0,0%	52,7%	29,8%	66,8%	76,5%	38,3%	62,9%	27,8%	51,8%	57,2%	88,4%	93,1%	44,8%	57,3%	82,0%
BARI	51,5%	8,0%	53,7%	37,0%	50,9%	64,9%	38,1%	33,8%	52,5%	55,9%	60,5%	41,2%	49,7%	32,2%	29,8%	72,1%
BELLUNO	100,0%	58,8%	72,2%	42,7%	68,3%	57,4%	7,6%	77,9%	38,1%	24,9%	61,4%	91,9%	67,8%	42,9%	52,2%	50,0%
BENEVENTO	46,4%	0,0%	56,3%	28,3%	65,3%	33,7%	33,1%	41,1%	21,6%	36,3%	63,9%	81,2%	93,1%	45,7%	49,2%	69,4%
BERGAMO	89,1%	50,0%	47,5%	50,5%	66,4%	85,3%	30,4%	73,8%	46,3%	55,9%	52,4%	73,4%	69,3%	52,1%	71,0%	87,8%
BIELLA	86,6%	40,9%	61,5%	50,2%	73,5%	69,2%	25,6%	52,1%	9,2%	50,4%	60,0%	74,2%	69,2%	51,6%	69,9%	80,0%
BOLOGNA	93,3%	71,2%	57,4%	52,8%	88,3%	83,9%	26,8%	70,2%	69,0%	59,2%	61,9%	50,4%	41,2%	2,4%	59,6%	64,9%
BOLZANO	90,1%	51,7%	63,8%	47,0%	75,6%	86,9%	41,2%	69,1%	52,5%	62,7%	60,6%	71,3%	76,4%	51,9%	77,3%	94,6%
BRESCIA	84,4%	50,2%	53,5%	36,9%	59,3%	82,0%	55,9%	63,7%	67,0%	55,9%	44,7%	66,0%	68,1%	38,9%	58,5%	87,5%
BRINDISI	33,9%	8,0%	52,9%	36,0%	42,0%	79,8%	100,0%	22,4%	40,1%	41,5%	65,1%	45,9%	49,3%	50,8%	33,8%	45,7%
CAGLIARI	61,4%	50,0%	69,8%	41,7%	78,6%	65,6%	17,4%	45,0%	100,0%	53,8%	55,2%	40,0%	49,0%	56,0%	28,9%	95,8%
CALTANISSETTA	21,0%	4,5%	28,3%	23,6%	38,9%	63,0%	15,0%	14,5%	0,0%	49,8%	66,2%	48,1%	73,8%	50,4%	37,4%	37,4%
CAMPOBASSO	63,0%	3,4%	75,1%	15,2%	74,2%	40,4%	10,6%	52,6%	31,9%	45,8%	55,4%	47,5%	62,1%	40,6%	46,5%	74,6%
CATANIA	7,6%	4,5%	34,9%	17,0%	44,8%	8,0%	41,6%	6,8%	46,3%	43,5%	60,8%	5,9%	73,6%	51,2%	29,7%	92,3%
CATANZARO	39,7%	6,1%	51,5%	30,3%	61,3%	50,1%	10,3%	45,0%	40,1%	52,0%	54,9%	83,8%	78,6%	37,7%	35,9%	56,1%
CHIETI	75,0%	11,4%	62,1%	31,7%	58,2%	20,2%	38,6%	60,4%	42,2%	58,0%	54,2%	65,1%	82,8%	25,1%	67,9%	49,6%
COMO	84,2%	69,9%	60,4%	47,9%	67,1%	69,9%	8,0%	65,7%	44,3%	55,9%	30,2%	77,0%	68,6%	57,9%	62,2%	77,6%
COSENZA	22,4%	6,1%	48,2%	22,6%	62,8%	81,3%	9,8%	32,2%	48,4%	34,7%	63,9%	75,2%	79,8%	29,4%	25,0%	69,9%
CREMONA	96,9%	71,5%	50,9%	47,3%	63,5%	85,6%	25,9%	64,1%	21,6%	51,9%	52,3%	75,2%	45,4%	52,9%	63,8%	89,8%
CROTONE	1,1%	6,1%	63,9%	20,0%	38,0%	49,9%	15,2%	16,0%	19,5%	41,6%	55,5%	38,9%	74,9%	50,0%	26,7%	41,3%
CUNEO	94,2%	36,7%	51,5%	39,1%	59,9%	61,2%	73,0%	55,8%	29,8%	50,4%	60,7%	73,4%	68,9%	54,1%	84,5%	75,9%
ENNA	49,5%	4,5%	49,0%	23,9%	49,6%	61,2%	27,0%	30,8%	15,4%	44,1%	79,3%	61,1%	73,8%	50,9%	43,1%	79,7%
FERRARA	93,4%	76,9%	56,9%	54,3%	76,0%	60,3%	54,8%	60,2%	21,6%	50,0%	61,7%	68,8%	14,4%	47,0%	81,6%	37,4%
FIRENZE	86,0%	59,1%	59,5%	45,5%	85,2%	69,7%	3,8%	67,8%	71,1%	58,6%	51,6%	43,6%	51,2%	3,3%	63,2%	67,1%
FOGGIA	33,1%	8,0%	55,7%	30,9%	44,8%	90,5%	77,1%	19,5%	36,0%	50,2%	66,6%	40,1%	49,9%	50,3%	29,6%	89,6%
FORLÌ	83,6%	61,4%	68,4%	55,0%	67,0%	78,4%	56,4%	54,8%	29,8%	56,9%	67,3%	29,2%	16,2%	51,5%	64,1%	62,8%
FROSINONE	62,9%	37,9%	60,4%	31,9%	53,6%	52,0%	31,0%	43,7%	27,8%	50,0%	52,0%	25,1%	75,7%	45,1%	49,2%	69,7%
GENOVA	81,1%	35,9%	49,8%	32,5%	69,9%	85,9%	0,9%	49,3%	81,4%	56,2%	46,5%	50,4%	65,5%	35,1%	61,0%	50,0%
GORIZIA	75,4%	33,0%	59,1%	55,5%	67,2%	68,2%	31,8%	48,5%	19,5%	60,8%	59,2%	75,4%	58,7%	66,0%	60,0%	83,3%
GROSSETO	77,6%	38,6%	67,9%	39,7%	68,3%	57,4%	19,5%	52,3%	15,4%	51,7%	61,7%	38,0%	76,2%	53,6%	46,9%	23,5%
IMPERIA	75,6%	35,2%	56,0%	37,6%	55,1%	74,4%	8,4%	32,0%	29,8%	50,5%	44,8%	45,8%	69,2%	50,2%	52,7%	48,4%
ISERNIA	52,5%	3,4%	69,8%	35,4%	72,5%	67,5%	10,4%	47,5%	11,2%	37,2%	60,8%	77,3%	61,7%	23,3%	27,7%	74,1%
L'AQUILA	88,5%	11,4%	71,6%	37,9%	76,6%	63,8%	20,2%	60,4%	95,9%	47,7%	68,9%	49,7%	82,0%	50,7%	50,6%	25,6%
LA SPEZIA	86,3%	35,2%	71,9%	38,4%	55,6%	60,6%	12,2%	54,7%	73,2%	53,4%	61,0%	75,0%	62,5%	27,3%	55,8%	84,6%
LATINA	62,7%	31,5%	63,6%	37,0%	50,3%	16,0%	65,1%	47,0%	15,4%	37,9%	62,6%	36,4%	75,1%	50,9%	40,6%	45,6%
LECCE	41,2%	8,0%	61,8%	52,3%	70,4%	57,5%	60,7%	44,7%	19,5%	52,5%	75,0%	69,5%	50,4%	50,5%	39,6%	85,2%
LECCO	96,3%	67,4%	65,8%	45,4%	72,0%	84,3%	9,6%	70,8%	29,8%	55,9%	37,2%	73,1%	69,6%	51,1%	75,7%	86,1%
LIVORNO	84,8%	45,9%	58,9%	41,9%	55,3%	88,1%	11,7%	51,4%	34,0%	56,9%	66,7%	59,9%	75,5%	50,8%	73,7%	41,3%
LODI	100,0%	46,7%	61,9%	43,1%	66,6%	75,4%	28,8%	67,5%	9,2%	55,9%	55,2%	86,7%	65,0%	56,5%	75,2%	90,5%
LUCCA	89,3%	38,6%	57,4%	51,9%	66,6%	39,5%	12,6%	58,8%	25,7%	8,6%	47,4%	66,9%	62,5%	52,0%	59,4%	68,3%
MACERATA	83,1%	31,1%	74,4%	45,6%	79,0%	76,6%	36,9%	56,9%	31,9%	55,9%	75,8%	83,5%	81,4%	42,2%	54,1%	63,4%
MANTOVA	91,4%	61,5%	57,1%	58,9%	62,3%	92,4%	25,5%	55,0%	42,2%	55,9%	61,9%	84,2%	63,1%	55,2%	67,8%	86,4%
MASSA	69,5%	44,2%	67,2%	35,6%	52,3%	54,7%	13,4%	37,4%	7,1%	28,8%	52,2%	10,7%	58,5%	45,8%	42,0%	42,3%
MATERA	69,2%	3,8%	75,5%	42,4%	51,8%	72,3%	53,5%	43,9%	31,9%	50,5%	78,6%	45,7%	69,0%	89,4%	28,9%	89,3%
MESSINA	24,6%	4,5%	34,1%	20,2%	56,6%	64,0%	2,9%	23,6%	21,6%	33,2%	52,6%	35,3%	73,8%	50,9%	5,6%	47,8%
MILANO	86,2%	47,9%	51,1%	47,6%	84,9%	91,7%	11,3%	79,8%	100,0%	55,9%	37,0%	67,3%	68,0%	15,1%	66,3%	43,1%
MODENA	100,0%	66,5%	58,8%	48,7%	70,3%	81,5%	30,4%	67,8%	48,4%	58,1%	50,8%	42,7%	61,7%	15,8%	55,4%	66,2%
MONZA	98,6%	43,6%	63,7%	50,9%	71,1%	94,0%	17,6%	74,5%	29,8%	55,9%	39,0%	80,2%	65,7%	58,1%	81,1%	71,8%
NAPOLI	13,2%	0,9%	27,0%	14,8%	39,4%	74,5%	9,2%	10,2%	23,6%	50,7%	38,9%	47,1%	93,4%	50,8%	30,1%	41,4%
NOVARA	93,0%	36,7%	53,2%	45,0%	57,3%	85,6%	17,5%	47,3%	21,6%	51,5%	50,7%	86,8%	69,1%	51,1%	71,2%	81,8%
NUORO	70,2%	66,4%	68,3%	43,8%	73,9%	72,8%	14,1%	40,1%	42,2%	53,2%	66,1%	89,5%	50,0%	53,1%	39,1%	88,6%
ORISTANO	67,2%	50,0%	65,8%	24,5%	69,5%	67,0%	44,7%	38,4%	50,5%	52,1%	81,8%	77,3%	49,0%	55,1%	18,5%	62,5%
PADOVA	87,6%	56,6%	60,0%	62,8%	79,1%	71,6%	66,1%	75,9%	48,4%	58,8%	47,1%	50,6%	55,8%	4,2%	64,3%	87,9%
PALERMO	14,2%	9,3%	36,9%	16,1%	46,1%	39,2%	11,1%	8,6%	29,8%	52,1%	57,5%	26,8%	73,6%	50,7%	30,0%	63,5%
PARMA	98,2%	76,9%	67,0%	50,2%	77,5%	75,6%	39,2%	68,4%	69,0%	52,9%	47,6%	73,9%	42,3%	12,2%	50,5%	69,2%
PAVIA	90,8%	67,3%	42,3%	55,4%	86,9%	90,1%	13,0%	75,1%	56,7%	52,5%	43,7%	61,0%	69,3%	52,2%	53,0%	82,5%
PERUGIA	83,5%	48,1%	72,1%	53,2%	72,6%	60,0%	36,2%	58,3%	73,2%	51,0%	63,5%	61,1%	67,6%	8,5%	49,5%	54,0%
PESARO	85,8%	28,0%	76,9%	48,0%	70,2%	72,3%	33,7%	55,9%	15,4%	56,4%	67,6%	36,2%	74,6%	37,7%	67,1%	54,9%
PESCARA	60,9%	11,4%	66,9%	30,4%	65,5%	58,7%	28,4%	57,3%	15,4%	58,0%	56,8%	39,7%	63,3%	27,7%	58,0%	59,7%
PIACENZA	94,7%	32,5%	60,4%	61,2%	63,5%	87,9%	47,2%	58,3%	40,1%	54,6%	55,2%	36,3%	15,9%	43,1%	45,7%	87,6%
PISA	80,0%	50,7%	58,8%	36,9%	85,9%	60,8%	17,9%	64,6%	46,3%	58,6%	60,0%	39,0%	53,4%	39,2%	58,2%	39,8%
PISTOIA	89,8%	38,6%	75,8%	34,9%	64,8%	16,6%	5,1%	43,5%	9,2%	8,6%	55,4%	39,9%	60,9%	51,9%	61,7%	48,7%
PORDENONE	94,2%	58,7%	72,8%	58,5%	64,7%	63,8%	48,6%	60,0%	27,8%	60,8%	61,3%	84,1%	55,7%	62,9%	72,5%	82,0%
POTENZA	74,9%	3,8%	52,6%	35,9%	65,2%	66,7%	11,4%	49,4%	34,0%	37,3%	73,5%	84,3%	68,9%	57,8%	46,9%	56,9%
PRATO	77,4%	41,6%	66,9%	40,7%	55,6%	65,1%	64,9%	38,5%	15,4%	58,6%	60,4%	57,3%	65,4%	52,9%	70,2%	61,9%
RAGUSA	46,7%	4,5%	52,3%	29,3%	53,9%	68,5%	41,6%	32,5%	0,0%	48,1%	75,9%	54,4%	73,8%	52,0%	27,6%	83,5%
RAVENNA	91,2%	76,9%	72,2%	57,1%	61,6%	80,6%	70,8%	44,1%	23,6%	47,2%	58,8%	30,3%	14,4%	46,5%	75,7%	36,3%
REGGIO DI CALABRIA	32,4%	6,1%	49,3%	29,9%	62,4%	72,3%	3,0%	36,7%	34,0%	3,1%	68,4%	70,4%	79,3%	12,0%	24,4%	59,1%
REGGIO NELL'EMILIA	93,4%	31,0%	62,0%	47,0%	58,0%	60,9%	23,3%	53,9%	42,2%	56,9%	48,4%	55,8%	14,4%	42,8%	52,4%	72,6%
RIETI	82,1%	56,5%	75,1%	39,0%	71,3%	44,2%	9,8%	53,5%	48,4%	27,0%	69,2%	43,0%	68,8%	44,2%	52,2%	68,3%
RIMINI	68,8%	40,6%	66,6%	52,5%	68,1%	78,2%	34,0%	43,8%	42,2%	58,7%	55,6%	40,5%	18,3%	49,5%	63,0%	84,7%
ROMA	68,4%	31,5%	48,4%	44,6%	74,8%	55,7%	13,0%	66,4%	100,0%	49,4%	53,8%	42,8%	73,6%	4,2%	44,3%	51,6%
ROVIGO	89,9%	30,3%	55,4%	53,2%	74,3%	65,1%	29,7%	57,9%	23,6%	40,4%	51,1%	58,4%	67,8%	53,5%	52,1%	67,1%
SALERNO	59,9%	0,0%	39,2%	39,8%	68,1%	71,6%	42,2%	48,5%	17,4%	42,0%	45,8%	72,4%	90,5%	51,5%	64,8%	86,2%
SASSARI	50,4%	50,0%	59,7%	34,3%	65,1%	63,0%	15,8%	30,4%	44,3%	45,7%	65,5%	65,7%	48,5%	51,3%	44,2%	59,8%
SAVONA	84,6%	35,2%	53,2%	47,5%	59,8%	83,0%	2,0%	52,7%	50,5%	45,3%	63,0%	49,5%	57,5%	50,1%	55,2%	86,7%
SIENA	100,0%	38,6%	62,6%	46,9%	83,7%	82,0%	2,2%	71,8%	93,8%	54,0%	43,2%	31,4%	77,5%	30,3%	64,2%	63,7%
SIRACUSA	33,1%	4,5%	39,1%	29,8%	44,2%	58,0%	19,3%	17,3%	3,0%	52,1%	63,4%	48,4%	73,6%	50,2%	18,7%	88,1%
SONDRIO	92,3%	68,2%	65,9%	49,1%	61,3%	90,9%	16,4%	65,3%	0,0%	43,3%	67,0%	79,2%	66,3%	88,0%	57,4%	69,9%
TARANTO	36,1%	8,0%	63,6%	26,7%	36,1%	53,9%	39,7%	22,2%	62,8%	55,9%	70,8%	31,1%	50,3%	50,9%	37,9%	39,6%
TERAMO	73,2%	11,4%	75,2%	36,8%	68,0%	85,5%	34,6%	53,4%	27,8%	14,9%	65,9%	81,2%	82,6%	51,4%	50,9%	60,9%
TERNI	79,3%	19,3%	72,4%	41,9%	64,2%	54,4%	31,6%	47,5%	38,1%	51,0%	49,8%	83,9%	67,2%	46,2%	68,0%	50,3%
TORINO	77,3%	86,7%	51,3%	39,2%	68,6%	86,0%	17,1%	53,1%	77,3%	59,5%	31,0%	56,1%	68,3%	52,0%	74,7%	51,1%
TRAPANI	17,6%	4,5%	41,3%	24,6%	39,0%	52,8%	40,1%	8,0%	21,6%	44,6%	67,9%	31,5%	73,8%	50,0%	30,4%	64,9%
TRENTO	93,0%	71,1%	69,3%	52,3%	78,9%	82,6%	31,1%	68,2%	85,6%	48,8%	48,8%	88,1%	75,2%	93,6%	88,0%	78,0%
TREVISO	91,5%	39,6%	71,8%	51,8%	68,4%	13,0%	24,5%	76,2%	58,7%	57,6%	47,5%	89,5%	67,7%	51,6%	69,3%	79,2%
TRIESTE	87,0%	33,4%	62,3%	43,1%	81,3%	76,8%	23,6%	61,9%	100,0%	62,0%	64,9%	57,9%	60,3%	57,4%	65,2%	68,7%
UDINE	86,8%	37,1%	64,4%	60,8%	75,8%	81,6%	31,2%	63,7%	50,5%	62,0%	66,0%	62,8%	60,4%	46,6%	81,1%	88,8%
VARESE	89,9%	51,1%	53,1%	36,5%	69,7%	59,2%	9,3%	64,0%	42,2%	47,9%	53,2%	75,2%	70,3%	51,5%	68,8%	76,3%

City	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION	13 CLIMATE ACTION	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG	17 PARTNERSHIPS FOR THE GOALS
VENEZIA	90,2%	37,0%	67,2%	45,7%	65,2%	31,7%	8,6%	63,9%	100,0%	51,3%	40,6%	49,6%	53,5%	41,5%	60,6%	56,4%
VERBANIA	79,9%	36,7%	59,5%	48,2%	53,1%	71,9%	11,1%	34,6%	19,5%	46,3%	61,3%	66,3%	65,4%	62,4%	74,4%	27,2%
VERCELLI	88,2%	44,8%	56,6%	42,6%	53,5%	87,2%	19,1%	47,1%	3,0%	59,5%	58,8%	65,0%	69,2%	55,2%	58,9%	91,8%
VERONA	88,8%	54,7%	60,1%	53,9%	70,7%	52,0%	32,0%	59,3%	42,2%	59,3%	52,1%	55,8%	65,1%	31,4%	80,8%	72,5%
VIBO VALENTIA	30,1%	6,1%	66,7%	24,6%	57,6%	60,1%	24,3%	43,5%	0,9%	47,9%	54,2%	47,2%	69,1%	52,2%	37,5%	82,4%
VICENZA	88,6%	35,0%	64,8%	53,8%	59,9%	81,4%	25,0%	64,8%	31,9%	61,1%	47,9%	65,3%	59,7%	52,1%	43,7%	79,3%
VITERBO	66,4%	29,9%	35,7%	39,0%	63,5%	52,8%	34,7%	52,6%	17,4%	32,2%	71,6%	77,8%	76,0%	51,8%	58,8%	63,0%

Target's achievement:

Red: $0 \leq \tilde{x} < 20$ Orange: $20 \leq \tilde{x} < 50$ Yellow: $50 \leq \tilde{x} < 80$ Green: $80 \leq \tilde{x} \leq 100$

Which are the key results for each Goal?

The results presented above reveal the challenges that the Italian cities have to face with a degree of priority: in the first place ensuring clean and accessible energy systems and incentivizing the use of renewable energies (Goal 7), defeating forms of hunger and malnutrition (Goal 2), and financing innovation and infrastructures (Goal 9). In terms of importance, follow matters related to greater investments in schools as well as quality education (Goal 4), reduction of inequalities (Goal 10) and protection of land-based ecosystems (Goal 15); again, in terms of jobs with the aim of creating the preconditions for economic growth (Goal 8), but also health and wellbeing (Goal 3). The achievement of these Goals poses an important challenge for those cities displaying scores very far from full sustainability.

Goal 1 (No poverty) has a high performance in almost every Italian city. Green traffic lights, indeed, for 54 cities-capital of provinces out of 103, on the basis of two indicators: "number of income statements between 0 and 10.000 euros out of the total number of declarations", and work intensity calculated as "people living in families with work intensity - months spent working out of total working months - lower than 0,20". Few Italian cities, just 5 and in this case located in Sicily, Campania and Calabria, are in red, hence with an achievement of sustainability lower than 20%.

When it comes to Goal 2 (Zero hunger), the situation appears to be quite serious, with only two out of 103 cities, Turin and Arezzo, displaying a sustainability level above 80%. This SDG, as regards to Italy, translates to matters related to malnutrition, intended as levels of obesity and overweight, and to agricultural productivity, here set as areas used as urban gardens and calculated as "areas which used to be dismissed or abandoned, now converted to organic farming of fruits and vegetables".

Regarding good health and well-being (Goal 3), Italian cities present a distance to target between 20% and 80%; hence, each of them has either a yellow or an orange traffic light. The indicators looked at are about life expectancy, deaths and injuries in road accidents, and those for suicide or intentional self-injury, and lastly infant mortality rate.

From the perspective of quality education (Goal 4), the national average is below the "passing grade", with a targets' achievement of 41% on the basis of indicators measuring the skills and the educational level of students, as well as childcare services and schools equipped with wheelchair ramps. Of the 103 cities analysed actually none is on the path towards full sustainability; 74 cities are in orange, while 25 in yellow, with a sustainability achievement between 50% and 80%. Four cities in Sicily, Campania and Basilicata display results below 20% of sustainability, hence with a red traffic light.

In terms of Goal 5 (Gender equality), even though only 7 cities are heading towards full sustainability, hence in green, as much as 84 cities are in the 50-80% range of the target's achievement, and none below 20%. The indicators analysed are about women's educational level ("% of graduated women out of the total number of graduates" and "% of women enrolled in university courses out of the total number of students enrolled") and the absolute difference between the employment rate of males and females.

Good performance as far as Goal 6 (Clean water and sanitation), with 29 cities in green and 62 in yellow, hence with results ranging between 50% and 80% of full sustainability, assessed on the basis of water losses, along with resident population connected to urban wastewater treatment plants and served by urban wastewater sewerage.

Goal 7 has one of the poorest results, with a long distance to target in every city analysed: as much as 89 out of 103 cities are actually below the 50% of full sustainability levels – precisely 44 in red and 45 in orange. The reference indicator is the solar photovoltaic, expressed as "power installed by photovoltaic panels per km2 and per inhabitant, measured in kW".

Several critical issues also emerge in the context of work and economic growth (Goal 8). Among the basic indicators analysed, there is the average taxable income per capita, the number of NEETs (youth not in employment, education or training), and the percentage of early school leavers from the educational and training system, which overall don't display positive results and sometimes are even alarming. Specifically, talking about youth employment, by looking at people aged between 15 and 29 who are neither working nor studying, no city is on the path towards full sustainability: 57 cities are between 50% and 80% of the target's achievement, and 28 between 20% and 50%.

Also as regards Goal 9 (Industry, innovation and infrastructure) some critical issues are arising, with a pretty low target's achievement national average (38%) and a very uneven scenario at the national level. Few cities are getting closer to full sustainability (only 9 out of 103); almost triple the cities (26 out of 103) are instead in the lower range, hence with a sustainability achievement lower than 20%. Nonetheless, we shall notice that the only indicator for the Goal is the mobility provided by public transportation (km-vehicle/inhabitant).

Instead, very positive results distinguish Goal 10 (Reduced inequalities), analysed through Gini Index and the digital divide (calculated as the "percentage of population excluded from fixed and mobile broadband"): the latter indicator displays particularly encouraging numbers, much influencing the Goal's results, which has 64 cities out of 103 within the yellow traffic light range, hence with a sustainability

between 50% and 80%.

With respect to Goal 11 (Sustainable cities and communities), the scenario is pretty encouraging, with 79 cities within the yellow traffic light range and no city with sustainability levels below 20%; the only city in the green range, Oristano, has a target's achievement level of 82%. For the calculation of this Goal, most of the indicators analyse air quality ("mean value of the average annual values" of PM2,5, PM10 and NO2) but also housing quality ("population living in houses without a toilet"), noise pollution ("number of complaints every 100.000 inhabitants") and natural disasters ("deaths and missings caused by disasters").

Similar performance as far as Goal 12 (Responsible consumption and production), where Italy is placed slightly above half way, thanks to 16 cities coloured green and 49 coloured yellow, hence with overall sustainability levels over 50%. The indicators concern the recycling percent on the total waste and the waste production per inhabitant.

Positive performance also for Goal 13 (Climate action), with actually 88 cities above 50% of the achievement of a full sustainability – respectively 78 coloured yellow and 10 coloured green. The elementary indicators used for the analysis of this Goal are the CO2 emissions ("tonnes of CO2 equivalent per inhabitant"), usually not existing at municipal level and here rounded down to the scale of regions or metropolitan areas, and the "percentage of population exposed to flood risk".

Goal 15 (Life on land) shows an overall achievement of the target of 46%, hence slightly below average due to particularly low values in cities coloured red, despite them being only 9; in fact, these bad values significantly lower the average of cities, although 63 out of 103 of them are placed between 50% and 100% of the target achievement. The elementary indicators considered are the urban green (in square metre per inhabitant) and the number of Ecolabel licences (products and services characterized by a reduced environmental impact throughout the lifecycle). It is important to consider how cities presenting the lowest results are actually overall virtuous in many other Goals: Milan, Modena and Parma here present a very bad performance, with an achievement of the target lower than 0,02%; Padova, Bologna, Perugia, Florence and Rome lower than 0,01%.

As far as Goal 16 (Peace, justice and strong institutions), the situation is generally positive, with 66 out of 103 cities placed above 50% of the achievement of the Goal, according to the chosen elementary indicators, that is the voter turnout at general elections and the efficiency of the courts, measured in terms of the days of average stock of civil proceedings at first instance compared to the population.

Finally, remarkably positive for most of the cities is Goal 17 (Partnership for the Goals), with a national average of the target's achievement of 66%: 29 cities out of 103 have obtained a green light, 51 a yellow light, 23 an orange light and none coloured red.

SDGs City Index 2018 and SDGs City Index 2020: what has been changed?

Being this Report an updated version of the old SDSN Italia SDGs City Index, published by Fondazione Eni Enrico Mattei in November two years ago (Cavalli & Farnia, 2018), it is appropriate to provide an insight concerning which are the differences and the similarities of the results obtained from the two analyses. When it comes to the differences that emerge between the values obtained in the older version of the City Index and the updated version, it is only possible to carry out a comparison between some of the indicators chosen; on the contrary, it is almost impossible, for many of the targets, to define the trend between a biennium and the other, because:

- Some indicators have been added only in the last edition of the City Index, while they were not present in the older version of 2018;
- Some indicators, although present in the older version of the City Index, have been proposed here with different units of measurement or they come from different sources, making any kind of comparison between years inaccurate.

For those indicators for which, on the other hand, a comparison is feasible and whose accuracy is guaranteed, it is possible to evaluate whether a) the performance of the Italian cities-capital of provinces has improved compared to 2018, b) the performance of the Italian cities-capital of provinces has worsened compared to 2020, or c) the performance of the Italian cities-capital of provinces remained unchanged compared to 2020. In this regard, it is also necessary to highlight how the 101 cities included in the first analysis have become now 103, after the addition of the cities of Arezzo and Isernia, now included in the database thanks to a greater availability of data that were not available two years ago.

The following analysis will try to analyse, therefore, only those elementary indicators that have not been normalized, which a) have been chosen both in the old index (2018) and in the new one, b) with the same units of measurement and c) with the same sources relative to different years. Furthermore, the following section will take into consideration only 101 cities-capital of provinces, and so the number of cities being present in the old City Index (2018), with the exception of Arezzo and Isernia, that are included only in the updated database, to allow a reliable and accurate comparison.

Regarding Goal 1 (No poverty), the "population in economic suffering" indicator has seen a sharp deterioration in all the cities with the exception of the Sicilian cities of Agrigento and Messina, which instead have improved their performances. When it comes to Goal 2 (Zero hunger), a comparison between indicators is not possible, as they have not been updated or have been updated but with different units of measurement. As regards Goal 3 (Good health and well-being), all comparable indicators seem to have been generally improved in the majority of cities: this is especially true with regard to life expectancy at birth (up to 80 cities have undergone improvements), but also (even if not so accentuated) regarding life expectancy at age 65 and the number of deaths and injuries in road accidents; the situation regarding infant mortality is less positive, with 48 worsened cities and 53 improved cities compared to 2018. Great progress, however, as regards the schools equipped with ramps, the only

updated indicator of Goal 4 (Quality education), with a marked improvement in all the realities with the exception of Bolzano and Lecco, that have slightly worsened. A comparison between the results of Goal 5 (Gender equality) is not possible instead, since its indicators have not been updated or have been added ex novo in the recent version of the index. About half of the cities have demonstrated improvements in Goal 6 (Clean water and sanitation), measured through the indicators related to urban waste-water treatment plants and to the urban wastewater sewage system. It is instead impossible to compare the indicators of Goal 7 (Affordable and clean energy): the units of measurement with which its indicators were calculated have undergone changes with respect to the 2018 version. Goal 8 (Decent work and economic growth) has a very negative situation: the indicator regarding the average taxable income has deteriorated in 53 cities out of 101, and the general condition of the NEETs aged 15 to 29 is even worse, with 78 worsened cities out of the total. This brings to light a very worrying situation that afflicts our country and that is reflected on youth employment especially in southern Italy but not only, as it can be seen from the large number of realities that have worsened after two years. The indicator relative to mobility provided by public transportation, instead, has not been updated, and therefore, making a comparison regarding Goal 9 (Industry, innovation and infrastructures) would be superfluous. Goal 10 is in a critical situation given the evident worsening of the Gini index, with up to 89 cities (here grouped according to the region they belong to, being the indicator itself on a regional basis) with lower values than those recorded in 2018. Improvements for 71 cities based on the area used for cycle paths, with 18 deteriorated cities and 12 with unchanged results - the only comparable indicator of Goal 11 (Sustainable cities and communities). The data relating to Goal 12 (Responsible consumption and production) have been updated, with 76 cities improving as regards the percentage of recycling waste out of total waste, and 59 cities worsening as regards the per-capita production of urban waste. Significant worsening as regards Goal 13 (Climate action) due to an increase in CO2 emissions per inhabitant in 71 Italian cities. Improvements in 77 cities, on the other hand, as regards Goal 15 with its indicator on the urban green spaces. Goal 16 (Peace, justice and strong institutions) clearly worsens, with a sharp decline in electoral participation in 2018 political elections in 91 cities, almost all of them. A comparison between the indicators of Goal 17 (Partnership for the Objectives) is not possible instead

Reflections

Especially in the midst of a historical period like the one we are experiencing today, new theories are emerging regarding the role that cities and urbanization play in other crucial issues of our time: climate change, the arising of disparities and inequalities, and ultimately even the spread of new pandemics. According to a recent study entitled “Extended urbanisation and the spatialities of infectious disease: Demographic change, infrastructure and governance”, indeed, urbanization and the existing relationships between cities, suburbs and rural areas would also contribute to facilitate the latter (Connolly et al., 2020). According to the research, contemporary urbanization processes, with all that these entail - denser and faster mobility systems, for example, or accelerated movement towards cities - can result in greater vulnerability in front of the spread of new infectious diseases. Specifically, the “periurban” and “suburban” areas, that in the study have been intended as densely populated peripheral neighbourhoods with a lack of adequate sanitation infrastructures, are the places where the aforementioned critical issues are more evident.

Regardless of which are the causes or factors that have facilitated the spread of the current pandemic, it is necessary to devote time to reflect on its consequences. In fact, localizing means first of all differentiating according to the specific characteristics of each territory. The challenges posed by the Agenda do not impact all territories with the same intensity and do predict the same reaction from them. It is essential, indeed, to differentiate by following the “no one left behind”, the cornerstone of the Agenda: regardless of purely political or economic issues, in fact, it is necessary to guarantee everyone, all over the world, an urban planning that takes into account the disparities, the economic framework and the governance of each territory, both in the prevention phase and in the resilience one.

According to an article of the Guardian entitled “Cities after coronavirus: how Covid-19 could radically alter urban life”, the post-COVID city will first have to work to increase its capacity for adaptation in the planning phase: it will have to be able to respond to the typical needs of the historical moment and of its inhabitants, by encouraging habits and lifestyles capable of increasing the well-being of communities and by reducing negative impacts on the environment. At the same time, it will have to be able to guarantee adequate communication between its centres, places of interactions and exchanges (sometimes potentially dangerous, as in this moment), of innovation and integration, with its peripheries, not only “liveable” and uncontaminated areas, but rather hinterlands capable of bearing a more equitable division of functions and responsibilities.

Even a recent Green City Network conference dedicated to the presentation of the “Pandemic and some green challenges of our time” dossier has addressed the issue of sustainable management of urban spaces after Coronavirus, bringing out how a radical change in urban liveability, which we are inevitably embracing and we will embrace, could be positive, albeit difficult, and that it could help us on the path towards achieving sustainable development

03 Conclusions

Cities play a major role in the path towards the achievement of sustainable development, and it is therefore necessary to analyse all their dimensions and facets, priorities and criticalities, to define and promote strategies able to make them more inclusive and sustainable.

The update Report “SDSN Italia SDGs Cities Index after two years” aims at increasing awareness of communities regarding sustainable development, but also at providing a tool that can support local administrators in their policy making, in order for mayors, but also for higher institutions, to acquire awareness on the sustainability levels of their territories.

Identifying those Goals already attained by many cities, those still presenting criticalities, and finally those, being the greatest part, in which cities are coloured yellow or orange, hence where they are placed halfway in the achievement of the targets set by the 2030 Agenda, the Report is proposed to facilitate the learning and the collaboration among different realities to define a reference strategy with common indicators, from which to articulate progresses and share existing challenges.

Amongst the 103 Italian cities-capital of provinces analysed, the average sustainability belongs to the yellow and orange traffic light range - hence standing within 20% and 80% of full sustainability. As shown by the composite index, obtained simultaneously considering all the basic indicators which constitute the individual Goals, setting at 100% the full accomplishment of the UN Agenda’s international targets, the average Italian city has reached the 53%. Specifically, there isn’t any city, amongst those analysed, which has reached more than 80% of overall sustainability (thus in the green range), and none which has reached less than 20% (thus in the red range): therefore, there is a real need for a greater and active involvement in the local sphere if we want to fully implement these Goals.

From the results presented so far the challenges Italian cities need to face with priority are clear: first of all our territories must guarantee systems of accessible and clean energy, as well as promote the use of renewables (Goal 7); they must defeat all forms of hunger and malnutrition (Goal 2), and invest in innovation and infrastructure (Goal 9). On the contrary, in Italian cities SDG 1 (No poverty) shows the best results, followed by SDG 6 (Clean water and sanitation) and SDG 17 (Partnership for the Goals), both with an overall performance of the cities above 60% of the achievement of the target.

After presenting the results emerged from the analysis, it is important to remind how to localize means in the first place to distinguish situations based on the specific characteristics of each territory, always following the “no one left behind” cornerstone of the Agenda. The present Report aims at supporting local administrations and civil communities in this process

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Annex 1

List of elementary indicators

Indicators	Goal	Polarity	Units of measurement	Dataset year	Source
Population in economic suffering (%)	1	Negative	Municipal	2017	MEF
Individuals living in households with low levels of work intensity (%)	1	Negative	Municipal	2011	ISTAT
Urban gardens (m2 every 100 inhabitants)	2	Positive	Municipal	2013	URBES
Overweight or obesity (%)	2	Negative	Regional	2018	ISTAT
Life expectancy at birth (years)	3	Positive	Provincial	2018	ISTAT
Life expectancy at age 65 (years)	3	Positive	Provincial	2018	ISTAT
Deaths and injuries in road accidents (number of deaths every 1.000 inhabitants)	3	Negative	Municipal	2017	LEGAMBIENTE
Deaths for suicide and intentional self-injury (number of deaths)	3	Negative	Provincial	2016	ISTAT
Infant mortality rate (Infant mortality rate every 10.000 live births)	3	Negative	Provincial	2017	ISTAT
Under-3-year-olds in early childhood education and care services (%)	4	Positive	Municipal	2013	ISTAT
Students' literacy skills (average score)	4	Positive	Municipal	2013/14	URBES
Students' numerical skills (average score)	4	Positive	Municipal	2013/14	URBES
Lower secondary completion rate (%)	4	Positive	Municipal	2011	ISTAT
Early childhood educational facilities (%)	4	Positive	Municipal	2011	ISTAT
Schools equipped with ramps (%)	4	Positive	Provincial	2018	ISTAT
Difference between the employment rate of males and females (%)	5	Negative	Provincial	2018	ISTAT
Women's educational level (%)	5	Positive	Municipal	2011	URBES
Women enrolled in the university (%)	5	Positive	Municipal	2017	ISTAT
Total water losses (%)	6	Negative	Municipal	2015	ISTAT
Population connected to urban waste-water treatment plants (%)	6	Positive	Municipal	2018	ISTAT
Population served by urban waste-water sewerage (%)	6	Positive	Municipal	2018	ISTAT
Solar thermal and photovoltaic per km2 (kW)	7	Positive	Municipal	2018	ISTAT
Solar thermal and photovoltaic per inhabinant (kW)	7	Positive	Municipal	2018	ISTAT
Average taxable income per capita (euro)	8	Positive	Municipal	2017	MEF
Youth not in employment, education or training (NEET) (%)	8	Negative	Provincial	2017	ANPAL
Early school leavers from the educational and training system (%)	8	Negative	Municipal	2011	URBES
Mobility provided by public transportation (km-vehicle/inhabitant)	9	Positive	Municipal	2015	LEGAMBIENTE
Gini Index	10	Negative	Regional	2016	ISTAT
Digital divide (%)	10	Negative	Municipal	2013	MISE
Cycle paths (m every 100 inhabitants)	11	Positive	Municipal	2016	LEGAMBIENTE
PM2,5 (mean value of the average annual values in µg/m3)	11	Negative	Municipal	2017	ISPRA
Population living in houses without a toilet (every 100.000 inhabitants)	11	Negative	Municipal	2011	ISTAT
PM10 (mean value of the average annual values in µg/m3)	11	Negative	Municipal	2017	ISPRA
Noise pollution (number of complaints every 100.000 inhabitants)	11	Negative	Municipal	2017	LEGAMBIENTE
Nitrogen dioxide - NO2 (mean value of the average annual values in µg/m3)	11	Negative	Municipal	2017	ISPRA
Deaths and missings caused by disasters (every 100.000 inhabitants)	11	Negative	Municipal	2017	ISPRA
Recycling (%)	12	Positive	Municipal	2018	LEGAMBIENTE
Urban waste production (kg per inhabitant)	12	Negative	Municipal	2018	LEGAMBIENTE
CO2 (number of CO2 tonnes per inhabitant)	13	Negative	Regional	2015	ISPRA
Population exposed to flood risk (%)	13	Negative	Municipal	2017	ISPRA
ECOLABEL licences (%)	15	Positive	Municipal	2017	ISPRA
Urban green (m2 per inhabitant)	15	Positive	Municipal	2017	ISTAT
2018 Political Elections voter turnout (%)	16	Positive	Municipal	2018	Ministero dell'Interno
Average stock of first-degree civil proceedings (number of average days of stock/total population)	16	Negative	Provincial	2012	FPA
Internet access (%)	17	Positive	Municipal	2018	AGCOM
Social cooperatives (number every 10.000 inhabitants)	17	Positive	Municipal	2011	ISTAT

Annex 2:

Table of the differences between the 2018 City Index and the updated version

SDG	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	7 AFFORDABLE AND CLEAN ENERGY
Polarity	red	red	green	green	red	red	red	green	red	green	green	green	green	green
Indicators	Popula-tion in economic suffering	Overweight or obesity	Life expectancy at birth	Life expectancy at age 65	Deaths and injuries in road accidents	Deaths for suicide and intentional selfinjury	Infant mortality rate	Schools equipped with ramps	Difference between the employment rate of males and females	Women enrolled in the university	Population connected to urban waste-water treatment plants	Population served by urban wastewater sewerage	Solar thermal and photovoltaic per km²	Solar thermal and photovoltaic per inhabinant
AGRIGENTO														
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SDG	8 DECENT WORK AND ECONOMIC GROWTH	8 DECENT WORK AND ECONOMIC GROWTH	10 REDUCED INEQUALITIES	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION	12 RESPONSIBLE CONSUMPTION	13 CLIMATE ACTION	13 CLIMATE ACTION	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG	17 PARTNERSHIPS FOR THE GOALS
Polarity	green	red	red	red	green	red	red	red	red	green	red	red	red	green	green	green
Indicators	Average ta-xable income per capita	Youth not in employment, education or training (NEET)	Gini Index	Digital divide	Cycle paths	PM10	Noise pollu-tion	Nitro-gen dioxide - NO_2	Deaths and missings caused by disasters	Recycling	Urban waste production	CO_2 tonnes per inhabitant	Popula-tion exposed to flood risk	Urban green	2018 Political Elections voter turnout	Internet access
AGRIGENTO																
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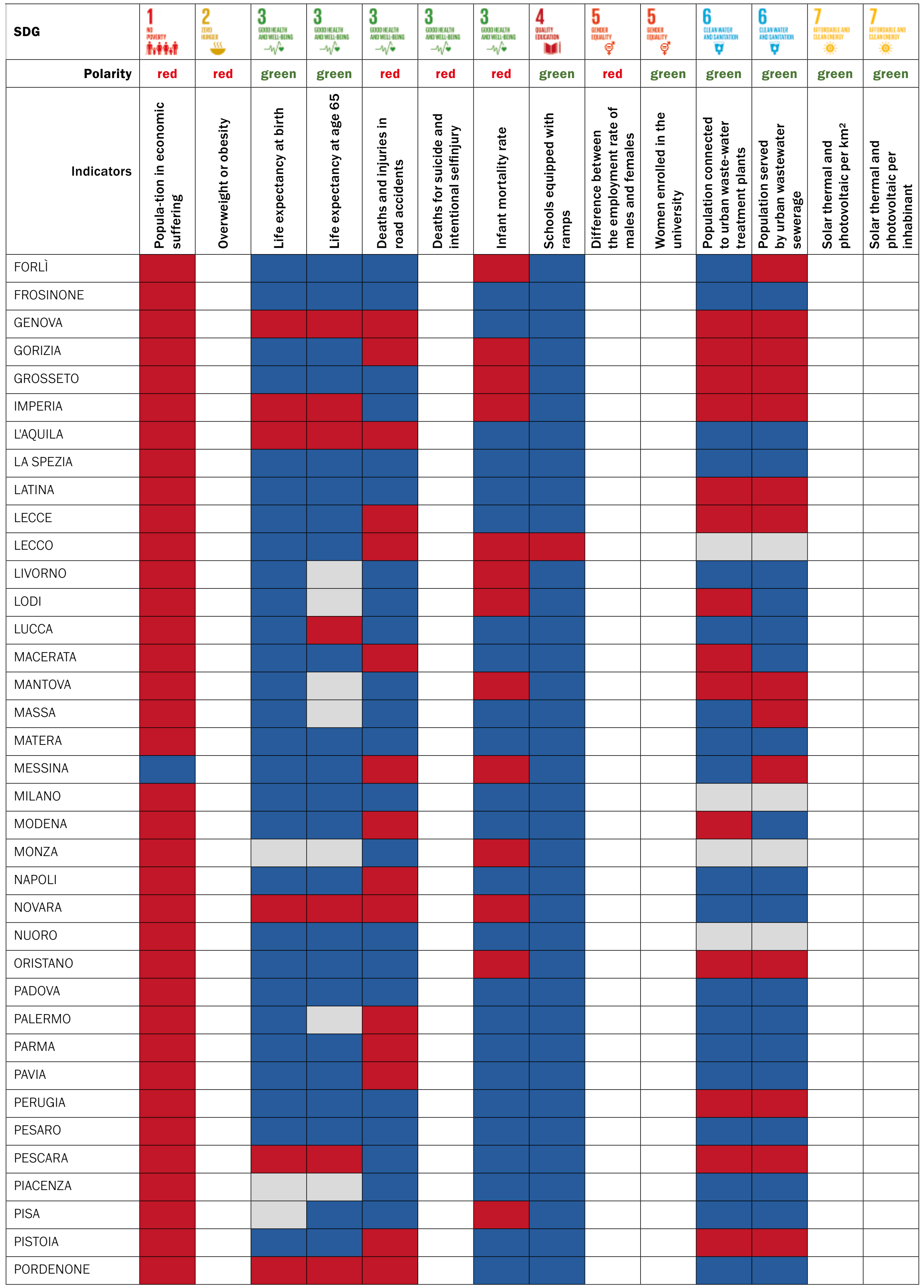
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Indicators
Popula-tion in economic suffering
Overweight or obesity
Life expectancy at birth
Life expectancy at age 65
Deaths and injuries in road accidents
Deaths for suicide and intentional selfinjury
Infant mortality rate
Schools equipped with ramps
Difference between the employment rate of males and females
Women enrolled in the university
Population connected to urban waste-water treatment plants
Population served by urban wastewater sewerage
Solar thermal and photovoltaic per km²
Solar thermal and photovoltaic per inhabinant
FORLÌ
FROSINONE
GENOVA
GORIZIA
GROSSETO
IMPERIA
L'AQUILA
LA SPEZIA
LATINA
LECCE
LECCO
LIVORNO
LODI
LUCCA
MACERATA
MANTOVA
MASSA
MATERA
MESSINA
MILANO
MODENA
MONZA
NAPOLI
NOVARA
NUORO
ORISTANO
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PESARO
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PIACENZA
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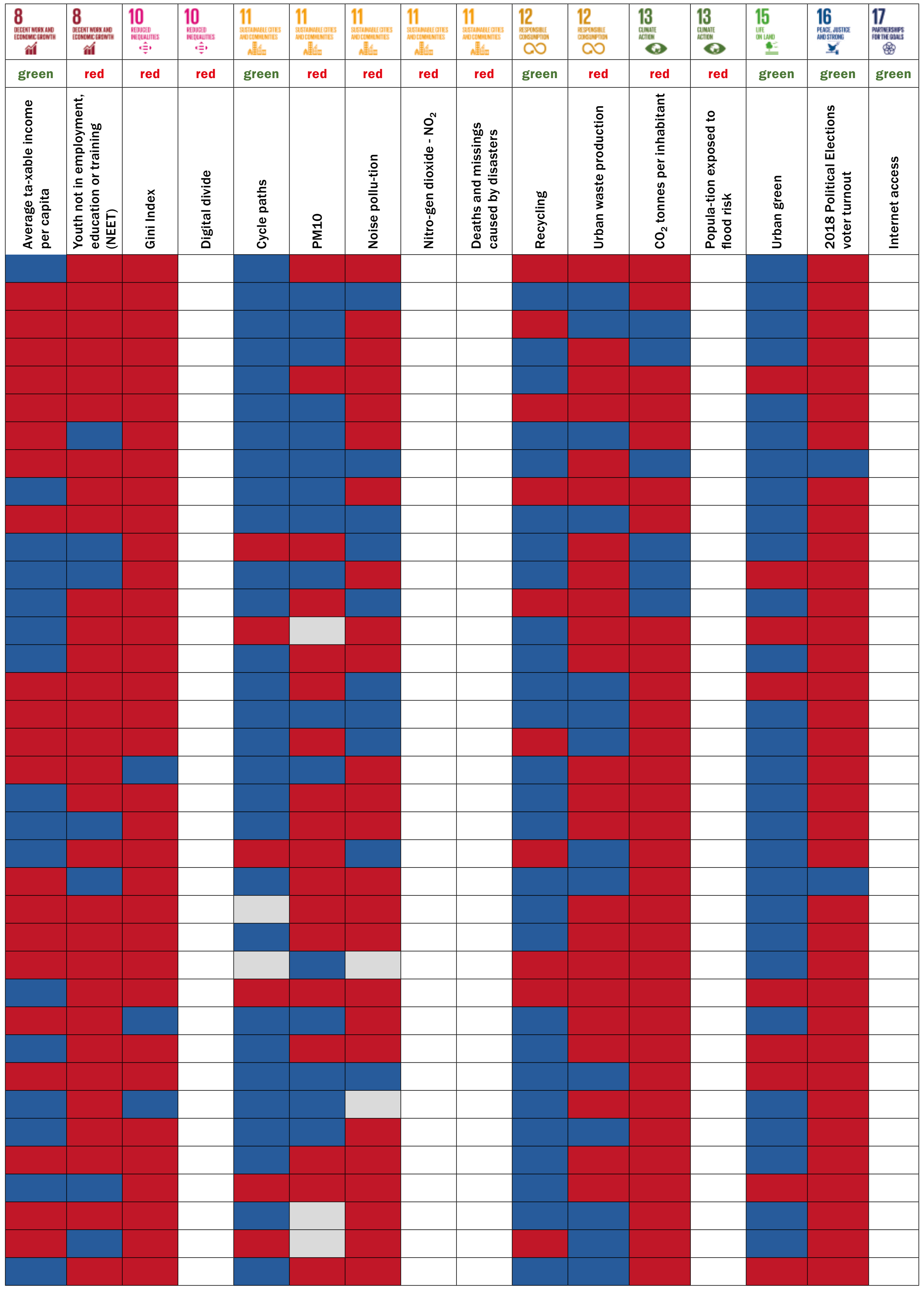
PORDENONE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Average ta-xable income per capita
Youth not in employment, education or training (NEET)
Gini Index
Digital divide
Cycle paths
PM10
Noise pollu-tion
Nitro-gen dioxide - NO2
Deaths and missings caused by disasters
Recycling
Urban waste production
CO2 tonnes per inhabitant
Popula-tion exposed to flood risk
Urban green
2018 Political Elections voter turnout
Internet access

SDG	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	7 AFFORDABLE AND CLEAN ENERGY
Polarity	red	red	green	green	red	red	red	green	red	green	green	green	green	green
Indicators	Popula-tion in economic suffering	Overweight or obesity	Life expectancy at birth	Life expectancy at age 65	Deaths and injuries in road accidents	Deaths for suicide and intentional selfinjury	Infant mortality rate	Schools equipped with ramps	Difference between the employment rate of males and females	Women enrolled in the university	Population connected to urban waste-water treatment plants	Population served by urban wastewater sewerage	Solar thermal and photovoltaic per km²	Solar thermal and photovoltaic per inhabinant
POTENZA														
PRATO														
RAGUSA														
RAVENNA														
REGGIO DI CALABRIA														
REGGIO NELL'EMILIA														
RIETI														
RIMINI														
ROMA														
ROVIGO														
SALERNO														
SASSARI														
SAVONA														
SIENA														
SIRACUSA														
SONDRIO														
TARANTO														
TERAMO														
TERNI														
TORINO														
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TRENTO														
TREVISO														
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VARESE														
VENEZIA														
VERBANIA														
VERCELLI														
VERONA														
VIBO VALENTIA														
VICENZA														
VITERBO														

SDG	8 DECENT WORK AND ECONOMIC GROWTH	8 DECENT WORK AND ECONOMIC GROWTH	10 REDUCED INEQUALITIES	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION	12 RESPONSIBLE CONSUMPTION	13 CLIMATE ACTION	13 CLIMATE ACTION	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG	17 PARTNERSHIPS FOR THE GOALS
Polarity	green	red	red	red	green	red	red	red	red	green	red	red	red	green	green	green
Indicators	Average ta-xable income per capita	Youth not in employment, education or training (NEET)	Gini Index	Digital divide	Cycle paths	PM10	Noise pollu-tion	Nitro-gen dioxide - NO_2	Deaths and missings caused by disasters	Recycling	Urban waste production	CO_2 tonnes per inhabitant	Popula-tion exposed to flood risk	Urban green	2018 Political Elections voter turnout	Internet access
POTENZA																
PRATO																
RAGUSA																
RAVENNA																
REGGIO DI CALABRIA																
REGGIO NELL'EMILIA																
RIETI																
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ROVIGO																
SALERNO																
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SAVONA																
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VIBO VALENTIA																
VICENZA																
VITERBO																

Legend:

- A comparison cannot be made because the indicator was added in the latest edition of the City Index, or the indicators are the same but measured differently
- The performances of the updated version of the City Index have remained identical to the old City Index
- The performances of the updated version of the City Index have improved compared to the old City Index
- The performances of the updated version of the City Index have worsened compared to the old City Index

The **Fondazione Eni Enrico Mattei (FEEM)**, founded in 1989, is a non profit, policy-oriented, international research center and a think-tank producing high-quality, innovative, interdisciplinary and scientifically sound research on sustainable development. It contributes to the quality of decision-making in public and private spheres through analytical studies, policy advice, scientific dissemination and high-level education. Thanks to its international network, FEEM integrates its research and dissemination activities with those of the best academic institutions and think tanks around the world.

Fondazione Eni Enrico Mattei
Corso Magenta 63, Milano – Italia

Tel. +39 02.520.36934
Fax. +39.02.520.36946

E-mail: letter@feem.it
www.feem.it

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FONDAZIONE ENI ENRICO MATTEI