



### 2022 SDGs REPORT. Statistical information for 2030 Agenda in Italy

The report was edited by Paola Ungaro. The Goal Managers are: Domenico Adamo (Goal 11); Barbara Baldazzi (Goals 3 and 4); Carmen Federica Conte (Goals 5 and 17); Luigi Costanzo (Goals 2 and 15); Lorenzo Di Biagio (Goal 1); Daniela Fantozzi (Goal 10); Antonino Laganà (Goal 14); Leopoldo Nascia (Goal 9); Simona Ramberti (Goal 6); Giovanna Tagliacozzo (Goal 13); Paola Ungaro (Goals 7, 8 and 12); Alberto Violante (Goal 16). Vincenzo Spinelli is in charge of the information system. The English version of the Report was edited by Leopoldo Nascia and Paola Ungaro.

Editorial activities: Nadia Mignolli (coordinator), Alfredina Della Branca, Marco Farinacci, Alessandro Franzò and Manuela Marrone.

Responsible for graphics: Sofia Barletta.

ISBN 978-88-458-2101-1

© 2023 Istituto nazionale di statistica Via Cesare Balbo, 16 - Roma



Unless otherwise stated, content on this website is licensed under a Creative Commons License -Attribution - 3.0. https://creativecommons.org/licenses/by/3.0/it/

Data and analysis from the Italian National Institute of Statistics can be copied, distributed, transmitted and freely adapted, even for commercial purposes, provided that the source is acknowledged.

No permission is necessary to hyperlink to pages on this website. Images, logos (including Istat logo), trademarks and other content owned by third parties belong to their respective owners and cannot be reproduced without their consent.





INDEX

	Pag.
Foreword	5
1. Indicators for sustainable development: general framework 1.1 Introduction	7 7
1.3 Sustainable development at regional level 1.4 NRRP and SDGs	14 15
2. Analysis of statistical measures by Goal	25
<ul> <li>Goal 1 − End poverty in all its forms everywhere</li> <li>The risk of poverty and income support during the pandemic</li> <li>Coal 0 - End human achieve feed ecouvity and</li> </ul>	25 34
Goal 2 – End nunger, achieve food security and improved nutrition and promote sustainable agriculture	37
I erritorial convergence on indicators of sustainable and productive agriculture	45
Goal 3 – Ensure health and well-being for all and for all ages ► SDGs targets for reproductive health and contraception in Italy	47 54
Goal 4 – Quality education for all - provide quality, equitable and inclusive education and promote continuous learning opportunities for all	57
► Implicit early school leaving	65
Goal 5 – Achieve gender equality and empower all women and girls	67
► Gender equality in academia	73
Goal 6 – Ensure availability and sustainable management of water and sanitation for all	75
Qualitative monitoring and drinking water management	80
Goal 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	83
Putting energy efficiency first": measures for energy efficiency in the context of Italy	90
Goal 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	93
Health and safety at work in Italy	100



2022 SDGs Report. Statistical information for 2030 Agenda in Italy

	Cool Q Duild a regilient infractructure and promote innovation	Pag.
	and fair, responsible and sustainable industrialisation	103
	► Agenda 2030 and evaluation of the Third Mission of universities and public	
	research bodies - (VQR) 2015-20191	111
	► Unaccompanied foreign minors	119
	Goal 11 – Make cities and human settlements inclusive, safe, resilient	-
	and sustainable	121
	Goal 12 – Ensuring sustainable production and consumption patterns	127
	► The challenge of measuring fossil fuel subsidies	136
	Goal 13 – Take urgent actions to combat climate change	120
	Implications of climate change for agriculture	145
	Goal 14 – Conserve and sustainably use the oceans, seas	-
	and marine resources for sustainable development	149
	Goal 15 – Protect, restore e promote sustainable use of	120
	terrestrial ecosystems, sustainably manage forests,	
	combat desertification, and halt and reverse land	150
	The growth of woodlands in Italy: a problem of adapting global	159
	indicators to the national context	165
	Goal 16 – Promote peaceful and inclusive societies for sustainable	
	and create effective, accountable and inclusive bodies at all levels	167
	► Italian prison overcrowding and quality of life	172
	Goal 17 – Strengthening means of implementation and renewing the global	175
	► Internet access of Italian households	1/5
	Istat-SDGs statistical measures by target and typology	185
3	. "No one left behind": Istat-SDGs statistical measures to measure	005
	inequality	205
	3.1 Introduction	205
	3.3 Gender inequalities	205
4	National and international processes related to the Istat-SDGs system	223
•	4.1 The global process for the implementation of the 2030 Agenda and the	
	indicators defined by the United Nations in the IAEG-SDGs	223
	4.3 The European Green Deal and Statistical Measures for	220
	Sustainable Development	226
	4.4 Statistical measures for the monitoring of the National Sustainable	004
	4.5 Statistical measures for monitoring the Ecological Transition Plan	231 232

4

### FOREWORD

The 2030 Agenda for Sustainable Development is a plan of action for people, planet and prosperity, that the Governments of 193 UN Member Countries have subscribed in September 2015. It sets 17 Goals for Sustainable Development (SDGs), which are broken down into 169 targets, to be achieved by 2030.

In 2022, Agenda's subscribers were at the half way stage, i.e. the right time to check and evaluate, as well as to record what has already been achieved, but also to renew the effort and commitment towards objectives which are still far from being accomplished.

The pandemic biennium did play a significant role in either slowing down or even worsen the progress observed in the previous years. On the other hand, digital transition, lockdown and emergency closures did actually impress a strong acceleration for firms, people and organizations. The dramatic fall in the economic activity was often associated with a significant reduction in environmental pressure, even though not in terms of decoupling. Even before Europe was hit by the dramatic consequences of the Ukraine war, many forms of vulnerability had widened and significantly worsened, and several existing gaps had further deepened. Kids, youths, women and people suffering from poverty and social exclusion cope more often with heavier loads and higher obstacles, and many SDGs dealing with them are still far from being achieved. At the same time, positive and optimistic signals also emerge, thereby encouraging our commitment to environmental protection and health.

The framework is complex, multi-dimensional, heterogeneous and contradictory. That is why it cannot be simply flattened into a single measure such as the GDP, requiring instead an expert focus on each of its many components. And this is also the reason why, in monitoring Italy's path towards the achievement of the SDGs, every year our Report makes available a rich and wide set of statistics, which are not only directly but also indirectly linked to the indicators designed originally to measure the achievement of the Agenda 2030. In this edition we present indeed 371 different measures, each of them describing a relevant story on who we are, where we come from and where we are heading to.

To enable a thorough understanding of both medium- and long-term dynamics, some key phenomena have been selected and monitored over time to compare its current performance with respect to both last year and 10 years ago. Specific attention was also devoted to geographic heterogeneity with the aim to create an extensive dashboard of variables, providing solid and robust evidence to inform policies, starting with the NRRP, for which an ad hoc linking tool with the SDGs has been set up.

As far as Italy is concerned, the year 2022 began with a historic turning point. On February 8<sup>th</sup>, the Italian Chamber of Deputies approved a law establishing the inclusion of environmental protection among the basic principles of our Constitution. A new paragraph has indeed been added to Article 9 - which originally focused only on the protection of landscape and historical and artistic heritage - thereby explicitly acknowledging the preservation of environment, biodiversity and ecosystems, also in the interest of future generations.



In the same spirit, a change was also made to Article 41 of our Constitution, establishing that private economic initiative cannot damage health and environment, thereby listing them in the article ahead of the already existing ones (i.e. safety, freedom and human dignity). Another change introduced a rule of law for the possibility to target economic private or public activities, not only for social purposes but also for environmental ones.

These constitutional novelties do represent a stimulus for Istat to produce and make available data, allowing a more effective description of individual and collective needs, as well as the measurement of policies' effects, thereby providing new value added to our work at the service of our country's sustainable development.

> Gian Carlo Blangiardo President of the Italian National Statistical Institute

## 1. INDICATORS FOR SUSTAINABLE DEVELOPMENT: GENERAL FRAMEWORK<sup>1</sup>

### **1.1 Introduction**

The fifth edition of the Sustainable Development Goals (SDGs) Report makes available 371 statistical measures (including 341 single measures, i.e. not repeated in different Goals), corresponding to 138 indicators proposed by the Inter Agency Expert Group on SDGs (UN-IAEG-SDGs) to monitor progress on the 2030 Agenda at global level (Figure 1.1).

Since its launch in December 2016, the Istat-SDGs system has been constantly evolving, improving the availability of statistical measures within the National Statistical System (Sistan)<sup>2</sup> and the methodological progress in UN-IAEG-SDGs context. Compared to the February 2022 release, this twelfth release updates 188 statistical measures and introduces 4 new measures.



<sup>1</sup> This chapter was edited by Barbara Baldazzi, Lorenzo Di Biagio, Vincenzo Spinelli and Paola Ungaro.

The Istat-SDGs statistical measures have been edited by: Domenico Adamo, Barbara Baldazzi, Ciro Baldi, Tiziana 2 Baldoni, Alessandra Battisti, Eugenia Bellini, Donatella Berna, Elisa Berntsen, Danilo Birardi, Emanuela Bologna, Silvia Bruzzone, Alessandra Burgio, Claudia Busetti, Alessandra Capobianchi, Tania Cappadozzi, Raffaella Cascioli, Cinzia Castagnaro, Raffaella Chiocchini, Carmen Federica Conte, Cinzia Conti, Luigi Costanzo, Stefania Cuicchio, Daniela De Francesco, Viviana De Giorgi, Elisabetta Del Bufalo, Clodia Delle Fratte, Valeria de Martino, Andrea De Panizza, Alessia D'Errico, Lorenzo Di Biagio, Claudia Di Priamo, Silvia Di Sante, Mascia Di Torrice, Gabriella Donatiello, Daniela Fantozzi, Alessandro Faramondi, Aldo Femia, Angela Ferruzza, Doriana Frattarola, Luisa Frova, Flora Fullone, Lidia Gargiulo, Silvana Garozzo, Roberto Gismondi, Francesco Gosetti, Donatella Grassi, Valentina Joffre, Antonino Laganà, Sandra Lalli, Marzia Loghi, Silvia Lombardi, Renato Magistro, Cecilia Manzi, Sandra Maresca, Valeria Mastrostefano, Maria Liviana Mattonetti, Manuela Michelini, Giulia Milan, Costantino Milanese, Silvia Montecolle, Maria Giuseppina Muratore, Leopoldo Nascia, Alessandra Nurra, Sante Orsini, Monica Pace, Fernanda Panizon, Claudio Paolantoni, Federica Pintaldi, Federico Polidoro, Maria Elena Pontecorvo, Sabrina Prati, Gaetano Proto, Simona Ramberti, Chiara Rossi, Mariangela Sabato, Maria Teresa Santoro, Miria Savioli, Giovanni Seri, Silvia Simeoni, Sabrina Sini, Mattia Spaziani, Vincenzo Spinelli, Carmela Squarcio, Simona Staffieri, Ilaria Straccamore, Giovanna Tagliacozzo, Stefania Taralli, Stefano Tersigni, Alessandra Tinto, Azzurra Tivoli, Caterina Torelli, Francesco G. Truglia, Angelica Tudini, Franco Turetta, Paola Ungaro, Giusy Vetrella, Donatella Vignani, Alberto Violante, Laura Zannella, Silvia Zannoni. The statistical indicators have been developed by collaborations set up in the Statistical System (Sistan) and with institutions outside the Sistan. In particular: Anvur, ASviS, Bank of Italy, Consob, CREA - Centro di ricerca Politiche e Bioeconomia, Cresme, Enea, GSE S.p.A, Invalsi, Italian Institute for Environmental Protection and Research, Italian National Institute of Health, National Institute of Geophysics and Volcanology, Ministry of Agricultural, Food and Forestry Policies, Ministry of Ecological Transition, Ministry of Economy and Finance, Ministry of Education, Ministry of Foreign Affairs and International Cooperation, Ministry of Health, Ministry of Interior, Ministry of Justice, Ministry of Labour and Social Politicies, Ministry of University and Research, Presidency of the Council of Ministers - Equal Opportunities Department, Terna S.p.A.



Figure 1.1 - Istat SDGs statistical measures and UN-IAEG-SDGs indicators, by date of dissemination

108 statistical measures are identical to UN-IAEG-SDGs indicators,132 are proxy or partial and 113 are national context specific (Figure 1.2).



Figure 1.2 - Istat-SDGs statistical measures, by taxonomy compared to SDGs indicators

In order to detail the statistical information disseminated as much as possible, there is a special focus on the development of breakdowns of statistical measures (Figure 1.3), as requested by the United Nations.

Dimension	Istat-SDGs Statistical measures	Goal	
Degree of urbanization / Municipality / Municipality type	76	3 summin         4 min         5 min         6 min         7 min         8 min         9 min         10 min         11 min           ₩ + + + +         ▲ ↓ ↓         ↓	12 cm 2 cm 2 cm 2 cm 13 cm 14 cm 15 cm 16 cm 16 cm 16 cm 16 cm 16 cm 10 cm
Region	210	1         2         3         3         4         5         5         5         7         2         8         9         10	11 Designation A Build 22 Conservation 12 Conservation 13 Conservation
Province	15		
Gender	123	12mm         2 min         3 min         4 min         5 min         7 min         8 min         9 min         10 min         11 min           M+#+++         ▲         ▲         ▲         ●         ▲         ●         ▲         ▲         ▲         ▲         ▲         ●         ▲         ▲         ▲         ■	13 see 16 not leave setting 17 not not one 17 not not one 18 setting 19
Age class	81		13 and 16 and and the sector of the sector o
Citizenship / Nationality	54	1 - month         3 - month         4 - month         5 - month         7 - month         8 - month         9 - month         10 - month         11 - month         16 - month <td></td>	
Presence of disability	17	1 mm         3 minimize         4 mm         10 minimize           ★: # 4.4         -/√√         ↓         ↓         ↓	

Figure 1.3 - Istat-SDGs statistical measures, by breakdown

The Istat-SDGs statistical measures show complementarities and interconnections with the system of Equitable and Sustainable Wellbeing (BES)<sup>3</sup> indicators and with the BES indicators for the Economic and Financial Document (DEF)<sup>4</sup>. 64 Istat-SDGs statistical measures are in common with the BES system (Figure 1.4).



<sup>3</sup> See <u>https://www.istat.it/en/well-being-and-sustainability/the-measurement-of-well-being/indicators.</u>

<sup>4</sup> See https://www.istat.it/en/well-being-and-sustainability/the-measurement-of-well-being/bes-in-the-economic-and-financial-document.

Bes		SDGs	
1. Health	4 indicators	4 in Goal 3	3 sectores and a sector and a sector and a sector a secto
2. Education and training	8 indicators	7 in Goal 4 1 in Goal 8	4 Bactors 8 Sciences and a
3. Work and life balance	10 indicators	2 in Goal 5 8 in Goal 8	5 texter The second se
4. Economic well-being (a)	7 indicators	5 in Goal 1 3 in Goal 10	1 <sup>10</sup> 00000 10 0000511 00000 ∱¥∰∰∰
5. Social relationships			
6. Politics and Institutions (a)	8 indicators	4 in Goal 5 5 in Goal 16	5 tiester
7. Security	3 indicators	1 in Goal 5 2 in Goal 16	5 titute <b>5</b> titute <b>16</b> rick and sentral <b>16</b> rick and sentral
8. Subjective well-being			
9. Landscape and cultural heritage	2 indicators	1 in Goal 11 1 in Goal 13	13 Series
10. Environment (b)	11 indicators	1 in Goal 1 2 in Goal 6 1 in Goal 7 1 in Goal 8 3 in Goal 11 2 in Goal 12 2 in Goal 13 1 in Goal 14 2 in Goal 15	1       0
11. Innovation, research and creativity	3 indicators	3 in Goal 9	
12. Quality of services(a)	8 indicators	2 in Goal 1 3 in Goal 3 1 in Goal 6 2 in Goal 11 1 in Goal 16	1     See Name       1     See Name       11     See Name       12     See Name

#### Figure 1.4 - Istat-SDGs statistical measures and BES indicators, by Bes domain and SDGs Goal

(a) 1 indicator is in more than one Goal.

(b) 4 indicators are in more than one Goal.

In this release, the overall picture of the SDGs evolution (paragraph 1.2) has been enriched with measurements of over time territorial convergence or divergences, to enlarge the usual regional analysis presented in paragraph 1.3. Moreover, paragraph 1.4 introduces a proposal for correspondence between the SDGs indicators and the National Recovery and Resilience Plan (NRRP), drawn up by Istat in cooperation with the State General Accounting Department. The mapping exercise is the preliminary step for monitoring the impact of the actions linked to the NRRP on the Italian system.

The synthetic picture presented in this chapter is accompanied by detailed analyses for each of the Goals reported in Chapter 2, which has been enriched, in this edition, with in-depth analyses by researchers and representatives of (Sistan and extra-Sistan) institutions, that contribute to the production of statistical information for the measurement of sustainable development. Chapter 3 elaborates on territorial and gender inequalities and proposes further analytical tools. Finally, Chapter 4 presents an update of the international and national processes of the statistical information systems dedicated to the SDGs.

The Report is accompanied by an infographic, a dashboard that enables navigation among the indicators, the dissemination of data and metadata files. All the documentation is available online at https://www.istat.it/en/well-being-and-sustainability/sustainable-development-goals.

### 1.2 Progress towards sustainable development

The analysis of the temporal evolution of Istat-SDGs statistical measures has been carried out only for the measures available in time series, comparing the last year available (usually 2020 or 2021) to the previous year and to 10 years before.

Trends over the past year show an overall positive picture: 50% of the measures improve, 23% are steady and 27% record a deterioration<sup>5</sup>. The percentage of measures with positive time evolution is significantly high for Goal 17 (Partnership for the Goals), driven by measures on ICT usage, which has increased sharply during the pandemic phase, and for Goal 12 (Responsible consumption and production) mainly due to progress in waste management. Goal 6 (Water) and 9 (Industry, innovation and infrastructure) record the highest percentage of deteriorating measures (Figure 1.5).



Figure 1.5 - Time evolution of the Goals: last available year compared to the previous year, by Goal (a)



(a) For each Goal, the number of statistical measures used for the calculation is indicated in brackets.

There is a widespread amount of positive signals compared to 10 years before: 59.9% of the measures improve, 16.7% remain unchanged and 23.4% worsen. The percentage of measures with positive time evolution is high for Goal 17, 12, 7 (Affordable and clean

5 The synthetic representation of the trends of the statistical measures has been obtained by calculating their changes in the short term (usually t over t-1) and in the long term (usually t over t-10). The changes have been then classified

according to the values of a Compound Annual Growth Rate (CAGR), computed as CAGR =  $\left(\frac{y_t}{y_{r_a}}\right)^{\frac{1}{t-t_0}} - 1$  where  $t_0$  is



the base year, t is the year under consideration and y is the value of the indicator in the two years. For indicators with a positive direction (i.e., those whose increase indicates convergence towards the objectives) the long-term trend is assessed as: improving, if CAGR>0.5%; stable, if -0.5% < CAGR < 0.5%; and deteriorating, if CAGR < -0.5%. For the short term, thresholds are equal to  $\pm 1\%$ . For indicators with a negative direction the classification is reversed.

energy), 5 (Gender equality), 9 and 2 (Zero hunger). Goal 11 (Sustainable cities and communities), 13 (Climate action), 4 (Education) and 1 (Poverty) have the highest percentage of measures worsening (Figure 1.6).





(a) For each Goal, the number of statistical measures used for the calculation is indicated in brackets.

The 2030 Agenda combines the achievement of the SDGs with the principles "leaving no one behind" and "reach the furthest behind first". One of the key objectives of the NRRP is to promote a new period of convergence between South and Islands and Centre-North, in order to ensure that progress leads to a reduction in territorial disparities. In order to monitor these aspects of the Agenda implementation in Italy, in this edition of the SDGs Report, the tables with the statistical measures released by Istat for each Goal make available the measurement of convergence over time among the regions (see Chapter 2). For each statistical measure at regional level, and available in time series, the ratio between the coefficient of variation  $CV_t$  of regional values at time *t* and that 10 years before  $(CV_{t-10})$  has been calculated<sup>6</sup>. The arrows in the last column of the tables indicate improving (green), stability (yellow) or deteriorating (red) in the process of convergence among regions.

The overall trend over the past 10 years can be analysed by combining time evolution of statistical measures (improvement, stability or deterioration, represented by the "traffic lights" in the Goals tables) with the measure of convergence among regions (convergence, stability or divergence, represented by the arrows in the same tables), for a total of 164 statistical measures (Figure 1.7). Around half of these measures indicate convergence among regions (78 measures, i.e. 47.6%); 32 (19.5%) are stable and 54 (32.9%) are associated with regional divergence.

<sup>6</sup> The measure of change in relative inequality (given by the ratio between  $CV_t$  and  $CV_{t-10}$ ) is averaged over the period and changed in sign to take into account the negative polarity of the coefficient of variation (the smaller it is, the lower the regional inequality), thus obtaining the Annualized Rate of Convergence (ARC). Relative inequality is then classified as improving (convergence among regions, decrease in inequality), if ARC>0.5%; stable, if -0.5% < ARC < 0.5%; and deteriorating (divergence among regions, increase in inequality), if ARC<-0.5%. For the computation of relative inequality values, a few precautions apply: (a) in case of missing values for the Autonomous Provinces of Trento or Bolzano, the data for the Trentino-Alto Adige region have been entered (if available); (b) in case of missing values for some (but not all) regions, the coefficient of variation has been calculated only for available regional data.

Among the measures that show convergence, 44 also improve over time, 11 are stable and 23 worsen. For example, the percentage of enterprises with at least 10 persons employed with web sales to end customers increased from 5.1% in 2013 to 14% in 2021. The positive time trend has been spread across all regions, but it has been more pronounced for the regions of the Centre and for those starting from very low shares (Umbria, Molise and Liguria), returning a greater territorial homogeneity. Conversely, the share of people not in employment, education or training (NEETs) aged 15-24, shows less territorial variability in 2021 compared to 2018, but it worsens (from 19.1% to 19.8%) due to the effects of the pandemic crisis on employment, especially youth employment. In the northern and central regions, the share of NEETs aged 15-24 increased (from 13.7% to 15.8% in the North and from 15.3% to 16.6% in the Centre), in the South and Islands it decreased (from 27.1% to 26.2% respectively).





Most of the statistical measures characterised by an increase in the distance between regional values (31) improve over time, while 14 worsen and 9 are stable. In the first group (divergence among regions and improvement over time) the proportion of people aged 3-17 who are overweight or obese, fell unevenly (more in the Centre and in the Islands and with an increase in the North-East) from 2011 to 2020 respectively 28.5% to 26.3% . The low work intensity is among the measures with increasing regional disparities and an overall worsening. Between 2011 and 2021, the share of people living in households with low work intensity increased from 10.5% to 11.7%; northern regions improved (from 6.3% to 5.9%), the Centre, and the South and the Islands deteriorated significantly (from 8.4% to 9.7% and from 16.9% to 20.6%, respectively), returning a wider territorial disparity.



### 1.3 Sustainable development at regional level

The regional differences were also analysed with reference to the quintiles of the measures for the latest available year (Figure 1.8), in order to assess the relative position of each region considering the set of measures.

Compared to last year, the regional map at last available data shows an even more consolidated gap in sustainable development in favour of the North-eastern regions (33.1% of the indicators in the fifth quintile, the most virtuous), compared to the South and the Islands (39.4% and 46.5%, respectively, of the measures in the first quintile, the least virtuous).

Especially in the Autonomous Provinces of Bolzano and Trento more than 50% of the measures are in the fifth quintile (up compared to last year). The ranking of Valle d'Aosta (47.6% of measures in the fifth quintile) and Lombardia (35.5%) also improve.

In the central regions, although Lazio and Marche reach around 20% of measures in the fifth quintile, the measures are concentrated between the second and fourth quintiles.

In the southern regions, the indicators are among the lowest, with a prevalence in the first quintile mainly in Sicilia and Calabria (54.9% and 52.9%, respectively). Puglia and Basilicata reach higher percentages in the second quintile (34.6% and 31.4%).

REGIONS			Quintiles			Total
AND GEOGRAPHIC	I	II	III	IV	V	available
AREAS	(0-20)	(20-40)	(40-60)	(60-80)	(80-100)	measures
Piemonte	10,5	15,8	32,2	30,3	11,2	152
Valle d'Aosta/Vallée d'Aoste	22,0	10,7	6,0	14,0	47,3	150
Liguria	19,0	15,7	19,6	26,1	19,6	153
Lombardia	12,5	15,8	13,8	22,4	35,5	152
Bolzano/Bozen	20,9	12,2	6,1	10,8	50,0	148
Trento	14,1	7,4	10,7	14,1	53,7	149
Veneto	13,8	17,1	17,1	25,7	26,3	152
Friuli-Venezia Giulia	13,7	17,6	9,8	24,2	34,6	153
Emilia-Romagna	12,4	11,8	11,1	31,4	33,3	153
Toscana	7,2	22,2	18,3	34,6	17,6	153
Umbria	9,2	19,7	25,0	28,3	17,8	152
Marche	8,5	17,6	29,4	24,2	20,3	153
Lazio	13,2	25,7	21,1	21,1	19,1	152
Abruzzo	14,4	35,9	19,6	22,2	7,8	153
Molise	23,0	32,9	10,5	10,5	23,0	152
Campania	44,4	23,5	10,5	9,8	11,8	153
Puglia	32,0	34,6	13,1	13,1	7,2	153
Basilicata	28,1	31,4	15,7	9,2	15,7	153
Calabria	52,9	7,8	13,1	10,5	15,7	153
Sicilia	54,9	_ 16,3	5,9	11,8	11,1	153
Sardegna	26,8	26,1	15,0	17,0	15,0	153
North-West	8,7	20,5	21,3	26,8	22,8	127
North-East	9,4	15,0	16,5	26,0	33,1	127
Center	4,8	18,6	40,7	23,4	12,4	145
South	39,4	25,2	18,1	11,8	5,5	127
Islands	46,5	22,0	12,6	8,7	10,2	127

# Figure 1.8 - Istat-SDGs statistical measures, by region, geographic area and quintile: last available year (percentage values)

### 1.4 NRRP and SDGs

European Commission has approved a temporary programme, the Next Generation EU Program (NG-EU), to address the deep socio-economic crisis induced by COVID-19. It is the most significant fiscal stimulus ever financed by the European Union.

The implementation of NG-EU requires that each State set up a National Recovery and Resilience Plan (NRRP) containing investments and reforms to mitigate the consequences of the crisis and to allow a transition towards an ecological and digital economy.

The NG-EU program attributes to Italy, through the NRRP, 191.5 billion euro over a six-year horizon (2021-2026), assigned to the reference administrations using a hierarchical classification of amounts based on four levels (6 Missions, 16 components, 191 measures and 285 sub-measures).

A first work of assessing the impact of the pandemic on SDG indicators was included in 2021 SDGs Report<sup>7</sup>, In September 2022, Istat and the State General Accounting Department

TEM/ HOLESTUSIEN

 <sup>7</sup> See National Statistical Institute – Istat. 2022. "2021 SDGs Report. Statistical information for 2030 Agenda in Italy". Letture Statistiche - Temi. Rome, Italy: Istat. <u>https://www.istat.it/en/archivio/266473</u>.

(RGS) of the Ministry of Economy and Finances, have published the first version of an integrated framework for mapping 64 Istat-SDGs statistical measures to the NRRP sub-measures. This process defines a many-to-many relationship and some constraints hold: on the one hand, a NRRP sub-measure is always linked to a Goal even in case of the lack of any linked statistical measure; on the other hand, in case of multiple statistical measures attributed to a sub-measure, only one is defined "prevalent" and the financial amount is assigned.

Table 1.1 - NRRP Missions, by financial amount, components, measure and sub-measure, Goals and SDGs statistical measures

NRRP MISSION	Resoources (billion euro) (a)	Number of components	Number of measures	Number of sub measures	Number of Goals	Number of stati- stical measures	Number of prevalent statistical measures
M1 - Digitisation, innovation, competitiveness and culture	40,3	3	48	108	9	16	10
M2 - Green revolution and ecological transition	59,5	4	56	64	8	23	20
M3 - Infrastructures for sustainable mobility	25,4	2	21	30	3	7	6
M4 - Education and research	30,9	2	35	35	6	23	11
M5 - Inclusion and cohesion	19,9	3	21	31	11	29	16
M6 - Health	15,6	2	10	17	5	8	7
Total	191,5	16	191	285	14	64	47

(a) The total amount may differ from the sum of the individual items due to rounding.

Table 1.1 shows the mapping of NRRP-SDGs: the first four columns refer to the accounting scheme in NRRP, the last three show the associations among the Missions and the Goals and the statistical measures. It is worth to highlight that 79 sub-measures out of 285 do not have a statistical measure linked currently and other sub-measures need more statistical measure to be fully explained. Another set of statistical indicators is going to be introduced in future mappings. The new statistical measures are classified by a 3-level release strategy: "short-term", "medium-term", and "long-term" (Table 1.2).

#### Table 1.2 - Release strategy in NRRP mapping

Mission	Availability	for new statistical measures	
- Wission	Short-term	Medium-term	Long-term
M1 - Digitisation, innovation, competitiveness and culture	54	26	10
M2 - Green revolution and ecological transition	-	-	1
M5 - Inclusion and cohesion	5	-	
M6 - Health	-	1	-
Total	59	27	11

Mission M1 has the most significant lack of specific statistical measures (90 indicators out of 97).

The reimbursement for the projects of the NRRP takes place through regulatory interventions and specific financial tools, i.e. investment/reform or loan/grant. Investments relates to 185.9 billion euro (97.1%) and Reforms to 5.6 billion (2.9%). Loans amount to 131.1 billion (68.5%) and grants to 55 billion (28.7%). Finally, there are 5.4 billion not yet classified as a loan/grant. Each sub-measure refers to an administration allowing for a report for each of them (Table 1.3).

ADMINISTRATION	Resources (billion euro) (a)	Number of missions	Goa
Ministry of Infrastructures and Transport	39,7	3	7
Ministry of Ecological Transition	34,7	3	8
Ministry of Economic Development	18,2	4	2
Ministry of Education	17,6	2	5
Ministry of Health	15,6	1	5
Ministry of Innovation Technology and Digitalisation	14,3	1	5
Ministry of the Interior	12,5	2	3
Ministry of University and Research	11,7	1	2
Ministry of Labor and Social Policies	7,3	1	7
Ministry of Culture	4,3	1	6
Ministry of Agriculture, Food and Forestry Policies	3,7	1	3
Minister of Justice	2,7	2	2
Ministry of Tourism	2,4	1	2
Presidency of the Council of Ministers - Department for Public Administration	1,3	1	2
Presidency of the Council of Ministers - Territorial Cohesion Agency	1,3	1	6
Presidency of the Council of Ministers - Civil Protection Department	1,2	1	1
Ministry of Foreign Affairs and International Cooperation	1,2	1	1
Presidency of the Council of Ministers - Department for Youth Affairs and Universal civil			
service	0,7	1	1
Presidency of the Council of Ministers - Department for Sport	0,7	1	2
Ministry of Economy and Finance Presidency of the Council of Ministers - Department, for Regional Affairs	0,3	2	2
and Autonomies	0,1	1	1
Presidency of the Council of Ministers - Department of Equal Opportunity	0	1	2
Presidency of the Council of Ministers	0	1	2
Council of State	0	1	1
Presidency of the Council of Ministers - Department for Disabilities	0	1	1

#### Table 1.3 - Administrations, by amount, number of Missions and associated Goal

(a) The total amount may differ from the sum of the individual items due to rounding.

This first version of the mapping has not included all the 17 Goals, since Goals 2, 15 and 17 are currently not represented (see Table 1.4).

The tables of the mapping consider time series (2010-2022) and dimensional breakdowns by territory (regional level), gender, and age (Table 1.5).

The tables of correspondence between NRRP Missions and Istat-SDGs statistical measures detail the mapping by Mission, indicating the last available year and the territorial detail. The statistical measures are repeated several times when they are included in more than one Mission.

Statistical tables, methodological notes and interactive dashboards are available in Istat and RGS websites since September 2022.



Table 1.4 - Resources	and number	of Missions	, b\	/ Goal
-----------------------	------------	-------------	------	--------

Goal		Resources (billion euro) (a)	Number of missions
1	End poverty in all its forms everywhere	2.7	2
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	-	-
3	Ensure healthy lives and promote well-being for all at all ages	13.5	2
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	16.7	4
5	Achieve gender equality and empower all women and girls	0.1	1
6	Ensure availability and sustainable management of water and sanitation for all	2.4	1
7	Ensure access to affordable, reliable, sustainable and modern energy for all	34.3	4
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.6	3
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	57.4	6
10	Reduce inequality within and among countries	0.8	2
11	Make cities and human settlements inclusive, safe, resilient and sustainable	20.7	4
12	Ensure sustainable consumption and production patterns	3.9	2
13	Take urgent action to combat climate change and its impacts	19.7	3
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	0.4	1
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	-	-
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	10.2	2
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	-	-

(a) The total amount may differ from the sum of the individual items due to rounding.

|--|

DIMENSION	Number of statistical measures	Number of Goals	Number of sub-measures
Territory	61	13	191
Gender	27	8	72
Age	17	7	66

Table of correspondence between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 1

MISSION 1: DIGITISATION, INNOVATION, COMPETITIVENESS AND CULTURE	4 COALITY CEDERATION 4 CEDERATION 4 CEDER		
GOAL	STATISTICAL MEASURE	AVAILABLE YEAR	TERRITORIAL DETAIL
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Individuals with basic or above basic overall digital skills	2019	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Participation in life-long learning	2021	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Energy intensity	2020	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	People not in education, employment, or training (NEET)	2021	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Enterprises that have introduced innovation with positive impact on environment (per 100 enterprises)	2020	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Investment in ICT machinery on total investment	2021	Italy (NUTS 0)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	IPR Intellectual Property Rights investment on total investment	2021	Italy (NUTS 0)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Investment in R&D on total investment	2021	Italy (NUTS 0)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Software investment on total investment	2021	Italy (NUTS 0)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Researchers (in full time equivalent)	2019	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Households with fixed and/or mobile broadband connection	2021	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	R&D intensity	2020	Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Public expenditure per capita spent on the preservation of the cultural and natural heritage	2020	Italy (NUTS 0)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Frequent users of public transport	2021	Regions (NUTS 2)
Goal 12 - Ensure sustainable consumption and production patterns	Tourism intensity index	2020	Regions (NUTS 2)

19



Table of correspondence between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 2

6 CLEAN WATER 7 AFFORDABLE AND 9 INCUSTRY, INFORMATION 11 SUSTAINABLE CITIES 12 RESPONSIBLE 13 CLIMATE 14 LIFE

MISSION 2: GREEN REVOLUTION	🔯 🔅 🚯 💵 🐼 🏵 🔀		
GOAL	STATISTICAL MEASURE	LAST AVAILABLE YEAR	TERRITORIAL DETAIL
Goal 1 - End poverty in all its forms everywhere	Irregularities in water supply	2021	Regions (NUTS 2)
Goal 6 - Ensure availability and sustainable management of water and sanitation for all	Urban water supply network efficiency	2018	Regions (NUTS 2)
Goal 6 - Ensure availability and sustainable management of water and sanitation for all	Sewage treatment	2015	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Renewable energy share in thermal sector (in the gross final energy consumption)	2020	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Renewable energy share in transport sector (in the gross final energy consumption)	2020	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Electric or hybrid passenger cars	2021	Italy (NUTS 0)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Energy intensity	2020	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Electricity from renewable sources	2020	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Enterprises that have introduced innovation with positive impact on environment (per 100 enterprises)	2020	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	R&D intensity	2020	Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Public expenditure per capita spent on the preservation of the cultural and natural heritage	2020	Italy (NUTS 0)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Landfill of waste		Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Air quality – PM2.5		Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Frequent users of public transport	2021	Regions (NUTS 2)
Goal 12 - Ensure sustainable consumption and production patterns	Tourism intensity index	2020	Regions (NUTS 2)
Goal 12 - Ensure sustainable consumption and production patterns	Circular material use rate	2020	Italy (NUTS 0)
Goal 13 - Take urgent action to combat climate change and its impacts	Population at risk of flood	2020	Regions (NUTS 2)
Goal 13 - Take urgent action to combat climate change and its impacts	Population at risk of landslides	2020	Regions (NUTS 2)
Goal 13 - Take urgent action to combat climate change and its impacts	Greenhouse gas emissions (GHG) accounts totals	2020	Italy (NUTS 0)
Goal 13 - Take urgent action to combat climate change and its impacts	Concern for climate change	2021	Regions (NUTS 2)
Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Marine protected areas EUAP	2019	Regions (NUTS 2)

# Table of between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 3

#### MISSION 3: INFRASTRUCTURES FOR SUSTAINABLE MOBILITY





LAST

		AVAILABLE	TERRITORIAL
OAL STATISTICAL MEASURE		YEAR	DETAIL
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Freight volumes, by mode of transport	2020	Italy (NUTS 0)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	High speed railway on total railway	2018	Geographical areas (NUTS 1)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Electrical railway on total railway	2018	Geographical areas (NUTS 1)
Soal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Frequent users of public transport	2021	Geographical areas (NUTS 1)
Goal 13 - Take urgent action to combat climate change and its impacts	Greenhouse gas emissions (GHG) accounts totals	2020	Italy (NUTS 0)

Table of correspondence between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 4

MISSION 4: EDUCATION AND RESEARCH	3 GOOD HEALTH     4 COLONION     5 GENER     7 difference     8 RECOMMENSATION     9 MARTICURE	LAST AVAII ARI F	TERRITORIAI
GOAL	STATISTICAL MEASURE	YEAR	DETAIL
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Overweight or obesity (standardised rates)	2021	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	Inadequate level of numeracy (students in grade 8)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 8)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Percentage of seats authorized in socio-educational services for early childhood (nurseries and supplementary services) on children aged 0-2	2020	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fon all	Inadequate level of literacy (students in grade 13)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	Inadequate level of numeracy (students in grade 13)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	Individuals with basic or above basic overall digital skills	2019	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	People having completed tertiary education (30-34 years old)	2021	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	First-time entry rate to university by cohort of upper secondary graduates	2020	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	Early leavers from education and training		Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fonall	Participation in life-long learning		Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 10)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 10)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities fon all	STEM graduates		Regions (NUTS 2)
Goal 5 - Achieve gender equality and empower all women and girls	Proportion of time spent on unpaid domestic and care work		Regions (NUTS 2)
Goal 5 - Achieve gender equality and empower all women and girls	Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children.		Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Energy intensity		Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work fon all	People not in education, employment, or training (NEET) (aged 15-24)		Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work fon all	People not in education, employment, or training (NEET)	2021	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and	Non-participation rate	2021	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and fosterlinnovation	Enterprises that have introduced innovation with positive impact on environment (per 100		Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization	Researchers (in full time equivalent)	2019	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	R&D intensity	2020	Regions (NUTS 2)



Table of correspondence between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 5

MISSION 5: INCLUSION 1 1000 3 3000 HALLING 4 AND COHESION 0.000	Country         5 clean         7 cleaner (all real real real real real real real r	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	
GOAL	STATISTICAL MEASURE	VAILABLE YEAR	TERRITORIAL DETAIL
Goal 1 - End poverty in all its forms everywhere	Housing cost overburden rate	2021	Regions (NUTS 2)
Goal 1 - End poverty in all its forms everywhere	Unmet need for medical examination	2021	Regions (NUTS 2)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Healthy life expectancy at birth	2021	Regions (NUTS 2)
	Overweight or obesity (standardised rates)	2021	Regions (NUTS 2)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Integrated home assistance service	2020	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 8)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 8)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Percentage of seats authorized in socio-educational services for early childhood (nurseries and supplementary services) on children aced 0-2	2020	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 13)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 13)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Early leavers from education and training	2021	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Participation in life-long learning	2021	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 10)	2022	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 10)	2022	Regions (NUTS 2)
Goal 5 - Achieve gender equality and empower all women and girls	Proportion of time spent on unpaid domestic and care work	2014	Regions (NUTS 2)
Goal 5 - Achieve gender equality and empower all women and girls	Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children.	2021	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Energy intensity	2020	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Gender pay gap	2020	Italy (NUTS 0)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	People not in education, employment, or training (NEET) (aged 15-24)	2021	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	People not in education, employment, or training (NEET)	2021	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Employment rate (20-64 years old)	2021	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Non-participation rate	2021	Regions (NUTS 2)
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Share of employed persons not in regular occupation	2019	Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Freight volumes, by mode of transport	2020	Italy (NUTS 0)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Overcrowding rate	2021	Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Share of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor	2021	Regions (NUTS 2)
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Social decay (or incivilities)	2021	Regions (NUTS 2)
Goal 13 - Take urgent action to combat climate change and its impacts	Greenhouse gas emissions (GHG) accounts totals	2020	Italy (NUTS 0)
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Composite index of service accessibility	2020	Regions (NUTS 2)

Table of correspondence between NRRP Missions and Istat-SDGs statistical measures, by last available year and available territorial detail: Mission 6

MISSIONE 6: HEALTH		LAST	
GOAL	STATISTICAL MEASURE	AVAILABLE YEAR	TERRITORIAL DETAIL
Goal 1 - End poverty in all its forms everywhere	Unmet need for medical examination	2021	Regions (NUTS 2)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Hospital beds	2020	Regions (NUTS 2)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Probability of dying from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases, by 5-year age groups	2019	Italy (NUTS 0)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Healthy life expectancy at birth	2021	Regions (NUTS 2)
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Integrated home assistance service	2020	Regions (NUTS 2)
Goal 4 - Ensure inclusive and equitable qualityl education and promote lifelong learning opportunities for all	Participation in life-long learning	2021	Regions (NUTS 2)
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Energy intensity		Regions (NUTS 2)
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	R&D intensity		Regions (NUTS 2)

# 23





## **GOAL 1**

**END POVERTY** IN ALL ITS FORMS EVERYWHERE<sup>1</sup>

### In brief

- In 2021, approximately 5.6 million individuals (9.4%) were living in absolute poverty. Compared to 2020, the incidence of poverty remained stable at the national level, with a decrease in the North-West (-2.1 percentage points) and an increase in the North-East (+0.4 p.p.), in the Centre (+ 0.7 p.p.), in the South (+1.5 p.p.) and in the Islands (+0.1 p.p.). The incidence of poverty decreased slightly for all age classes, except for the youngest (0-17 years) for which it increased by 0.7 p.p.
- In 2021, the housing cost represented a burden difficult to sustain for the 7.2% of the population, a stable percentage compared to 2020 and at the minimum levels for the period. In the last decade, the distances between the regions have slightly widened.
- The risk of poverty or social exclusion remained almost stable between 2020 and 2021 (25.4%, +0.1 p.p.), but still high with respect to other European countries, placing Italy in the last places in the ranking of EU countries. Compared to ten years earlier, the regional distances, on the whole, have not narrowed.

The statistical measures released by Istat for Goal 1 are twenty-three and refer to eight UN-IAEG-SDGs indicators (Table 1.1).



<sup>1</sup> This section was edited by Lorenzo Di Biagio with contributions by Barbara Baldazzi, Clodia Delle Fratte, Valeria de Martino and Manuela Michelini.

Table 1.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

				VARIATIONS		CONVERGENCE
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	AMONG REGIONS Compared to 10 years before
1.1.1	Proportion of population below the international poverty line, by sex, age, employment statu	s and geographica	I location (ur	ban/rural)		
In-work at	-risk-of-poverty rate (Istat, 2021, percentage values)	National context	11.6			
1.2.1	Proportion of population living below the national poverty line, by sex and age					
Absolute	poverty (incidence) (Istat, 2021, percentage values)	Identical	9.4			
1.2.2	Proportion of men, women and children of all ages living in poverty in all its dimensions accord	ording to national o	lefinitions			
At risk of	poverty or social exclusion - AROPE (Istat, 2021, percentage values)	Identical	25.4			=
Severe m	aterial deprivation rate (Istat, 2021, percentage values)	Partial	5.6			$\Leftrightarrow \Rightarrow$
Very low	work intensity (Istat, 2021, percentage values)	Partial	11.7			$\Leftrightarrow \Rightarrow$
People at	risk of poverty (Istat, 2021, percentage values)	Partial	20.1	$\bigcirc$		$\Rightarrow \Leftarrow$
At risk of	poverty or social exclusion - AROPE - Number of people (Istat, 2021, thousand)	National context	14,984			
People at	risk of poverty - Number (Istat, 2021, thousand)	National context	11,843	$\bigcirc$		
1.3.1	Proportion of population covered by social protection floors/systems, by sex, distinguishing women, newborns, work-injury victims and the poor and the vulnerable	children, unemploy	ed persons,	older persons	s, persons with disa	abilities, pregnant
Unmet ne	ed for medical examination (Istat, 2021, percentage values)	National context	11.0		(a)	$\Rightarrow \Leftarrow$
1.4.1	Proportion of population living in households with access to basic services					
Housing o	cost overburden rate (Istat, 2021, percentage values)	National context	7.2			$\Leftarrow \Rightarrow$
Househol percentag	ds very or fairly satisfied with the continuity of the service of electricity supply (Istat, 2021, je values)	Partial	93.9	$\bigcirc$		$\Rightarrow \Leftarrow$
Inability to	o keep home adequately warm (Istat, 2021, percentage values)	Partial	8.1			
Househol	ds with difficulties of connection with public transport (Istat, 2021, percentage values)	Partial	30.6			$\Leftrightarrow \Rightarrow$
Landfill of	f waste (Ispra, 2020, percentage values)	Partial	20.1			$\Leftrightarrow \Rightarrow$
Irregularit	ies in water supply (Istat, 2021, percentage values)	Partial	9.4	$\bigcirc$		$\Leftarrow \Rightarrow$
Househol	ds with fixed and/or mobile broadband connection (Istat, 2021, percentage values)	Partial	79.5			$\Rightarrow \Leftarrow$
People ag character	ed 6 and over who use their mobile phone every day, per 100 people with the same istics (Istat, 2021, percentage values)	Partial	84.2			$\Rightarrow \Leftarrow$
1.5.1	Number of deaths, missing persons and directly affected persons attributed to disasters per	100,000 population				
Deaths ar	d missing persons for landslides (Ispra, 2020, N.)	Partial	6			
Deaths ar	d missing persons for floods (Ispra, 2020, N.)	Partial	11			
Injured pe	ersons for landslides (Ispra, 2020, N.)	Partial	22			
Injured pe	prsons for floods (Ispra, 2020, N.)	Partial	-			
1.a.1	Total official development assistance (ODA) grants from all donors that focus on poverty red	uction as a share o	of the recipier	nt country's gi	ross national incon	ne
Proportio and socia values)	n of bilateral ODA spending on essential services for developing countries (education, health I protection) (Ministry of Foreign Affairs and International Cooperation, 2020, percentage	Proxy	43.6			
1.a.2 Proportion of total government spending on essential services (education, health and social protection)						
Proportio (Istat, 202	n of total government spending on essential services (education, health and social protection) 0, percentage values)	Identical	65.355			
Legend				NOF	<b>Notes</b> (a) Variation co	mpared to 2017
		$\Rightarrow \in$	CUNVERGE			
	STABILITY	=	STABILITY			
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGEN	CE		

-- NOT AVAILABLE / NOT SIGNIFICANT

### People living in absolute poverty remained stable

In 2021, people in absolute poverty, who cannot afford to purchase a basket of goods and services essential for a minimally acceptable standard of living, were almost 5.6 million (equal to 9.4% of residents).

Despite the economic recovery that characterised 2021 and the significant increase in consumer spending (+4.7%), the incidence of absolute poverty remained stable compared to 2020, still higher than the levels of 2019 (7.7%) and at its highest since the indicator is available (2005). The lack of improvement in the last year is due on the one hand to a more contained increase in spending by less well-off households and on the other hand to the upturn of inflation (+1.9% in 2021).

The incidence of poverty, compared to 2020, decreased in the North-West (8.0%, -2.1 percentage points); it increased in the North-East (8.6%, +0.4 p.p.), in the Centre (7.3%, +0.7 p.p.), in the South (13.2%, +1.5 p.p.) and in the Islands (9.9%, +0.1 p.p.). In 2021, the majority of individuals in absolute poverty (44.1%) resided in the South. Data summarise the reabsorption of the exceptional growth in poverty in the North occurred in 2020.

Compared to 2020, absolute poverty decreased slightly for all age classes, except for the youngest (0-17 years), among whom it increased, from 13.5% in 2020 to 14.2% in 2021 (Figure 1.1), highlighting the economic difficulties of families with minors. In recent years, the incidence of poverty has turned out to be significantly lower for the elderly population (65 years and over), confirming the economic protection role of pension transfers within the family.



Figure 1.1 - Absolute poverty (incidence), by age class. Years 2005-2021 (percentage values)



The 2030 target<sup>2</sup> for absolute poverty (3.8%) has recorded a wider gap, making it difficult to achieve (Figure 1.2).





Source: Istat, Household Budget Survey

### The burden of the housing cost still stood at the lowest levels of the period

One of the primary needs and one of the fundamental rights of people is to afford adequate housing. Moreover, who is burdened by housing costs have more difficulty to satisfy other needs or to deal with essential expenses, such as food, medical care, education, and energy. One indicator of housing affordability is the housing cost overburden rate, i.e., the proportion of people living in households where the total cost of the main house represents more than 40% of the net household income. This indicator reflects the difficulties in meeting the need for affordable housing.

In Italy, for 2021, the housing cost overburden rate<sup>3</sup> was equal to 7.2%, a minimum level since the indicator is available (2004). Compared to 2020, there was a more significant increase in the North-West (+1.2 p.p.) and a marked reduction in the Islands (-3.2 p.p.), nonetheless the overall indicator remained stable (Figure 1.3).

The South and the Islands, Campania and Sicilia in particular, continued to present the most difficult situations. In the last ten years, the South and the Centre have improved to a greater extent than the North, but the distances between the regions have nevertheless widened slightly, highlighting different trends between regions even if they belong to the same geographical area. As for the incidence of absolute poverty, also in this case the housing cost overburden rate was lower for the elderly population (aged 65 and over).

<sup>2</sup> The incidence of absolute poverty is one of the statistical measures used to monitor target 1.2 of the 2030 Agenda for Sustainable Development. The target requires halving poverty in all its dimensions compared to 2015 values. In 2015, the incidence of absolute poverty in Italy was 7.6%.

<sup>3</sup> The housing cost overburden rate is computed on the income of the previous year (2020).

In 2020<sup>4</sup>, Italy ranked slightly below the EU27 average (7.8%), eighteenth in the ranking of European countries. All the smaller states (with fewer than 3 million inhabitants), except Luxembourg, recorded values below 5%. Germany and Spain were above average (with 9% and 8.2%, respectively), while France and Poland were below (with 5.9% and 4.9%).

Figure 1.3 - Housing cost overburden rate, by geographical area, age class, gender. Years 2020 and 2021 (percentage values)



Source: Istat, Eu-Silc

### Statistical measures on poverty and income in 2021

In 2021, one fifth (20.1%) of people residing in Italy were at risk of poverty<sup>5</sup>, in line with previous years (20.1% in 2019, 20% in 2020) despite the outbreak of the pandemic. In this regard, Istat has carried out specific measurements to evaluate the effects of the income support measures applied during 2020 to counter the impact of COVID-19: it is estimated that without them the risk of poverty would have been higher by about 3 percentage points (see further on "The risk of poverty and income support during the pandemic").

In 2021, 5.6% of people were in conditions of severe material deprivation and 11.7% were living in households with low work intensity (Figure 1.4). The composite indicator built on these two components and on the risk of poverty, i.e., the share of the population at risk of poverty or social exclusion, is equal to 25.4%, in line with 2019 (25.6%) and with 2020 (25.3%).

The risk of poverty or social exclusion differs considerably between regions, with a clear North-South gradient (Figure 1.5).



<sup>4</sup> Eurostat data for 2021 are not available yet.

<sup>5</sup> The risk of poverty is computed on the income of the previous year (2020).



Figure 1.4 - At risk of poverty or social exclusion, people at risk of poverty, severe material deprivation rate and very low work intensity. Years 2004-2021 (percentage values)

Source: Istat, Eu-Silc



Figure 1.5 - At risk of poverty or social exclusion, by regions. Years 2020 e 2021 (percentage values)

Source: Istat, Eu-Silc

In the Autonomous Province of Bolzano people at risk of poverty or social exclusion represented 10% of the resident population, in Campania half of the population was at risk (50.2%). Percentages above 40% were also recorded in other southern regions (Calabria and Sicilia), while percentages below 15% characterised some northern regions (Trentino-Alto Adige, Valle d'Aosta, Emilia-Romagna) and Marche.

Overall, regional distances have decreased over the last two years; however, if compared to ten years earlier, there has not been a convergence trend.

At European level (EU27), the composite indicator "at risk of poverty or social exclusion" recorded a slight increase between 2019 and 2020<sup>6</sup>, going from 20.9% to 21.5%. Italy continued to rank twenty-second in the ranking of EU Member States (Figure 1.6)

Figure 1.6 - At risk of poverty or social exclusion, by country. Year 2020 (percentage values)



Source: Eurostat





### The risk of poverty and income support during the pandemic<sup>1</sup>

To deal with the economic consequences of the COVID-19 pandemic, already existing income support measures - such as the redundancy fund (Cassa integrazione guadagni, CIG) and the Citizenship income (Reddito di cittadinanza, RDC) - have been strengthened, and extraordinary monetary transfers have been introduced, such as the Emergency income (Reddito di emergenza, REM), the bonus for self-employed workers, and the bonus for housekeepers and caregivers<sup>2</sup>. The specific effects of these measures in terms of reducing the risk of poverty were analysed with the FaMiMod<sup>3</sup> model, using 60% of the median income as the risk of poverty threshold, estimated for all scenarios on income including imputed rents and made equivalent by the modified OECD scale<sup>4</sup>.

The overall impact of the income support measures adopted in 2020 has been estimated by considering an alternative scenario, characterised by the absence of CIG,  $RDC^5$  and extraordinary measures (REM, bonus for self-employed workers and for housekeepers and caregivers). In this scenario, the risk of poverty would have been 19.1% (Figure 1). The introduction of income support measures has led to a significant reduction in the risk of poverty, approximately by 3 percentage points (from 19.1% to 16.2%). In particular, the contribution to the reduction of the risk of poverty attributable to CIG is equal to 0.5 percentage points, while that attributable to RDC is 0.3 p.p. Also considering the extraordinary measures, the REM reduced the risk of poverty by 0.1 percentage points, while the bonus for self-employed workers and that for housekeepers and caregivers by a further 2 p.p.

The set of interventions adopted to deal with the COVID-19 pandemic has played an important role in reducing the risk of poverty, mainly for young people aged between 15 and 24 (the reduction was 6.2 p.p.) and for minors up to 14 years (-3.4; Figure 2). In all age classes, except for the elderlies (65+), the reduction in the risk of poverty is mainly attributable to the extraordinary measures.

Overall, despite the measures to deal with COVID-19, the risk of poverty remained very high in the South and in the Islands (32.8% in the Islands and 29.5% in the South), compared to the North (10% in the North-West and 6.7% in the North-East) and to the Centre (9.5%). The impact of the measures to deal with COVID-19 was more significant in the North-West (-5.0 p.p., of which -4.8 for extraordinary interventions), in the Islands (-4.6 p.p., of which -3.6 because of existing measures) and in the South (-3.1 p.p. of which -2.1 attributable to extraordinary interventions).

<sup>1</sup> This section was edited by Marco Di Marco and Paola Tanda with contributions by Lorenzo Di Biagio.

<sup>2</sup> Other extraordinary measures introduced during the pandemic are not considered in this analysis, for their minor relevance and for the difficulties in simulation.

<sup>3</sup> FaMiMod is the lstat microsimulation model of household tax and benefits, and it reproduces the system of taxes and benefits using the microdata of Eu-Silc Survey. The model includes also a nowcasting procedure that updates to 2020 income estimates, demographic and employment totals and the legislation currently in use (See Istat, 2016, *Rivista di Statistica Ufficiale*, 2/2016, <u>http://www.istat.it/it/archivio/171133</u>; Istat, 2021, *La redistribuzione del reddito in Italia* <u>https://www.istat.it/it/files/2021/07/Redistribuzione-reddito-Italia.pdf</u>).

<sup>4</sup> It should be noted that both in the SDGs-Istat- system and in the Eu-Silc Survey the Eurostat definition is applied, in which the risk of poverty refers to an income net of imputed rents and to 2020 data. Therefore, the results obtained with the FaMiMod model are not immediately comparable with those of the Eu-Silc Survey.

<sup>5</sup> In 2020, a large part of CIG was aimed to deal with the pandemic and the CIG earners increased tenfold (from around 600,000 to over 6 million); the RDC increased significantly compared to 2019, the year in which the measure was used for only eight months and with reference to the previous year income; in 2020, however, in order to deal with the income fall due to pandemic, the RDC concerned current income, and was paid throughout the whole year, involving a larger number of households (the beneficiary households estimated with FaMiMod are, in 2019, about 1.3 million and in 2020 they increased to about 1.5 million).



Figure 1 - Effects of existing and extraordinary measures against COVID-19 on the risk of poverty. Year 2020 (percentage values)

Source: Istat, FaMiMod - microsimulation model of household tax and benefits





Source: Istat, FaMiMod - microsimulation model of household tax and benefits





### **GOAL 2**

**END HUNGER,** ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE<sup>1</sup>

### In brief

- In 2020, more than 30% of the world population suffered from food insecurity. The phenomenon has been steadily growing since 2015. Also in Italy, the share of households with signals of food insecurity is growing (1.7%, +0.2 percentage points compared to 2018), with a significant concentration in South and Islands (2.9%).
- In 2020, among Italian children aged 3 to 5, one out of three was overweight or obese (33.2%; +1.6 p.p. compared to 2018). In a wider age group, including adolescents (3-17 years), the share was 26.3% (29.2% among the males; 33% in South and Islands). 2020 estimates indicate a worsening situation, and the consolidation of a trend already in place before the pandemic.
- In 2020, Italian small farms (under 15,000 euro of turnover) produced about 15,000 euro per labour unit (-18.8% compared to 2015), earning on average 1,467 euro per farm before interest, taxes, depreciation and amortisation (-31.3% compared to 2015). This trend is in contrast with the objectives of improving productivity and income for small producers, set by the 2030 Agenda.
- The share of agricultural land invested in organic farming is still on the rise, reaching 16.4% in 2020 (+5.1% over the previous year), placing Italy in the fourth position in the EU27 ranking. At the same time, there was an increase in the distributed quantities of fertilisers and plant protection products (respectively, +15.4% and +11.3% over the previous year).
- The high irregularity rate among workers (24.1% in 2019; +3.4 p.p. compared to 2010) is a clear weakness in the sustainability profile of Italian agriculture. Although the proportion of employed persons not in regular position varied significantly over the country, it was substantial in all geographical areas: undeclared workers accounted for about one out of seven in the North, more than one out of five in the Centre, almost one out of three in South and Islands.

The statistical measures released by Istat for Goal 2 are seventeen and refer to seven UN-IAEG-SDGs indicators (Table 2.1).



<sup>1</sup> This section was edited by Luigi Costanzo with contributions by Emanuela Bologna, Doriana Frattarola, Roberto Gismondi, Federico Polidoro, Giovanni Seri, Mattia Spaziani and Francesco G. Truglia.

# Table 2.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to previous year and convergence among regions

				VARIATIONS		
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	CONVERGEN- CE AMONG REGIONS compared to 10 years before
2.1.2	Prevalence of moderate or severe food insecurity in the population, based on the Food Insecu	ity Experience Sc	ale (FIES)			
Prevalence	e of moderate or severe food insecurity (FAO, 2019, percentage values)	Identical	6.7			
Prevalence	e of severe food insecurity (FAO, 2019, percentage values)	Identical	1.2			
Household	is with signals of food insecurity (Istat, 2020, percentage values)	National context	1.7		(a)	
2.2.2	Prevalence of malnutrition (weight for height >+2 or <-2 standard deviation from the median of (wasting and overweight)	the WHO Child Gr	owth Stand	ards) among c	hildren under 5 ye	ars of age, by type
Overweigh	t or obesity among children from 3 to 5 years of age (Istat, 2020, percentage values)	Proxy	33.2		(b)	
Overweigh	t or obesity among minors from 3 to 17 years of age (Istat, 2020, percentage values)	National context	26.3		(b)	⇒⇐
2.3.1	Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size					
Production current pri	n per labour unit of farms below 15,000 euros of turnover per year (Istat-Crea, 2020, euro at ices)	Proxy	15,012			$\Leftarrow\Rightarrow$
2.3.2	Average income of small-scale food producers, by sex and indigenous status					
Earnings t current pri	before interest, taxes, depreciation and amortization of farms (EBITDA) (Istat-Crea, 2020, euro at ices)	Proxy	1,467			
2.4.1	Proportion of agricultural area under productive and sustainable agriculture					
Share of u Policies, 2	tilized agricultural land under organic farming (Ministry of Agricultural, Food and Forestry 021, percentage values)	Proxy	17.4			$\Leftarrow\Rightarrow$
Growth rat values)	te of organic crops (Ministry of Agricultural, Food and Forestry Policies, 2021, percentage	National context	4.4			$\Leftarrow \Rightarrow$
Ammonia	emissions from agriculture (Ispra, 2019, thousand tonnes)	National context	334.6			=
Fertilizers	distributed in agriculture (Istat, 2020, Kg per hectare)	National context	558.5			$\Leftarrow\Rightarrow$
Plant prote	ection products distributed in agriculture (Istat, 2020, Kg per hectare)	National context	13.8			⇒⇐
Share of e percentag	mployed persons not in regular occupation in agriculture, forestry and fishing (Istat, 2019, e values)	National context	24.1			=
2.a.1	The agriculture orientation index for government expenditures					
Agricultur	e orientation index for government expenditures (Istat, 2020, index)	Identical	0.24			
Share of p	ublic expenditure on agriculture (Istat, 2020, percentage values)	National context	0.53			
Proportior values)	of the value added of agriculture, forestry and fishing to the GDP (Istat, 2020, percentage	National context	1.99			
2.a.2	Total official flows (official development assistance plus other official flows) to the agriculture	sector				
Bilateral C at current	DA in agriculture (Ministry of Foreign Affairs and International Cooperation, 2020, Million euro prices)	Identical	95.95			
Legend					Notes	magned to 2012
	IMPROVEMENT	⇒⇐	CONVERG	GENCE	(b) Variation co	mpared to 2012
0	STABILITY	=	STABILITY	/		
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGE	NCE		
	NOT AVAILABLE / NOT SIGNIFICANT					
### The "zero hunger" goal is receding. More households in Italy show signs of food insecurity

In 2020, according to FAO estimates, food insecurity affected, in severe or moderate form, 30.4% of the world's population and 55.3% in the least developed countries<sup>2</sup>. The phenomenon has been increasing since 2015 and showed a sharp acceleration in 2020 (+3.8 percentage points), compared with an average annual increase of about one percentage point in the previous four years (Figure 2.1).

In Italy, for the second year in a row, the share of households who show signals of food insecurity increased and reached 1.7% in 2020 (2.9% in South and Islands)<sup>3</sup>. It is a confirmation of the break of the positive trend of the previous four years (the share was 3.8% in 2015). There was also no sign of narrowing the wide gap between North-Centre and South and Islands (Figure 2.2).





Italv

North

Centre

Islands

South and

2020



### Overweight and obesity among children and adolescents still on the rise

Developed countries are not exempt from malnutrition issues related to a sedentary lifestyle and unhealthy food habits. In 2020, according to joint estimates by Unicef, WHO and the World Bank, the prevalence of overweight among children under five was 5.7% globally



<sup>2</sup> Moderate insecurity is associated with inability to eat regularly and to maintain a healthy, balanced diet; severe insecurity is associated with high probability of not being able to consume enough food for one's vital needs. In 2020, the prevalence of severe food insecurity was 11.9% all over the world and 23.8% in the least developed countries. Estimates are based on the application of the *Food Insecurity Experience Scale* (FIES), a standard module included in the Gallup World Poll on behalf of FAO in about 150 countries since 2014.

<sup>3</sup> Households that declare not to have had enough money, in some periods of the year, to buy food and not to be able to afford a protein meal at least twice a week. This indicator is not comparable with the FIES-based estimates, but it allows a breakdown by geographical areas, which is particularly relevant in Italy because of the wide regional diversity in economic conditions.

(stable since 2018), and it reached 8.3% in Europe, where it has nevertheless been steadily declining over the past decade, after peaking at 9.9% in 2010<sup>4</sup>.

Conversely, the estimates available for Italy – although not comparable with those released by Unicef – showed in 2020 a further increase to 33.2% in the percentage of overweight or obese children in the age group 3-5 years (+1.1 p.p. compared to the previous year; +2.4 p.p. since 2017), and similar increases in the subsequent age groups, from 6 to 17 years (Figure 2.3)<sup>5</sup>.



Figure 2.3b - Overweight or obesity (a) among minors from 3 to 17 years of age, by geographical area, gender, age group. Years 2018 and 2020 (percentage values, 2-year moving averages)





Source: Istat, Survey on Aspects of daily life (a) According to the criteria adopted by the International Obesity Task Force.

Source: Istat, Survey on Aspects of daily life (a) According to the criteria adopted by the International Obesity Task Force.

The share reached 33.9% among children aged 6 to 10 years, and then decreased with age (23.5% and 15.8% respectively, in the age groups 11-13 and 14-17 years). The estimated prevalence in the entire population of children and adolescents (3-17 years) was 26.3%, with significantly higher values among the males (29.2%, versus 23.2% of females) and the residents in South and Islands (33%, with a peak of 39.1% in Campania). National estimates indicated a pronounced worsening of the situation in 2020, with the consolidation of a worrying negative trend that was already underway in our country before the pandemic.

#### Economic sustainability of small farms at risk

In advanced economies, the ability of the agri-food system to preserve the genetic diversity of crops and livestock, to promote the consumption of local quality products, to support the economy of inland areas and to protect their territory from abandonment

<sup>4</sup> Unicef, WHO, World Bank Group (2021), *Joint Child Malnutrition Estimates*. Children are considered overweight if the product of body weight × height is greater than +2 from the median of the *WHO Child Growth Standards*.

<sup>5</sup> The estimates are two-year moving averages (t, t-1), based on the results of the *Aspects of Daily Life* survey, and refer, for the definition of overweight in children and adolescents (3-17 years), to the threshold values adopted by the International Obesity Task Force (IOTF), instead of the Who Child Growth Standards (see previous note).

depends to a large extent on the presence of a substantial and economically viable fabric of small producers.

In 2020, small Italian farms (under 15,000 euro of annual turnover) realised a value of production of 15,012 euro per labour unit (-18.8% compared to 2015) and an EBITDA margin of just 1,467 euro per farm (-31.3% compared to 2015)<sup>6</sup>. Although both indicators showed an improvement in the last two years (Figure 2.4), they distanced from the averages of the agricultural sector (which showed a much smaller decline, recovered almost completely in 2020). This indicates clearly a deterioration of the economic sustainability of small farms, contrary to the objectives of improving the productivity and income of small-scale agricultural producers, set by the 2030 Agenda.







7





Source: Ministry of Agricultural, Food and Forestry Policies (a) Fully converted or under conversion to organic farming, excluding kitchen gardens.

### Contrasting signals for the environmental sustainability of agriculture

The share of utilised agricultural land covered by organic crops continued to grow and reached 17.4% in 2021 (Figure 2.5). In comparison with other EU countries (based on 2020 data), Italy ranked fourth by the proportion of organic crops, after Austria, Estonia and Sweden (Figure 2.6). In 2021 and 2020, the areas invested in organic farming (including those under conversion) increased by 4.4% and 5.1%, respectively, after two years of slower growth (+2.6% in 2018 and +1.8% in 2019). In the European Union, certified organic farms are the most responsive to the profile of sustainable and productive agriculture as outlined in the 2030 Agenda<sup>7</sup>.

<sup>6</sup> A labour unit is equal to 280 working days of at least 8 hours actually performed on the farm. The EBITDA margin (Earnings Before Interest, Taxes, Depreciation and Amortisation) is a measure of the economic outcome of operating management, net of fiscal and financial costs.





Figure 2.6 - Share of utilised agricultural land under organic farming (a), by country. Years 2015 and 2020 (percentage values)

At the same time, however, a significant increase can be observed in 2020 in the quantities of fertilisers and plant protection products sold over the Italian market, whose abuse is harmful to human health and biodiversity. In 2020, 558.5 kg of fertiliser and 13.8 kg of plant protection products were distributed per hectare of treatable area (respectively, +15.4% and +11.3% over the previous year).

### Ammonia emissions within the limits set by EU Directives

Ammonia emissions, mainly produced by livestock farming, represent another pressure factor on the environment generated by the agri-food system. In the 2010-2019 period, Italy reduced emissions of this pollutant by 4.4%, meeting the cap set by the 2001 NEC Directive and converging towards the 2020 target set by the new Directive of 2016<sup>8</sup>. However, the dynamics were not uniform across the territory: compared to 2010, emissions decreased mostly in the North-West and the South, but increased significantly in the North-East, which was responsible for about one-third of agricultural emissions (Figure 2.9).

Source: Eurostat (a) Fully converted or under conversion to organic farming, excluding kitchen gardens. (b) 2019 data.

production methods, provided that they conform to three basic principles: exploitation of the soil's natural fertility (improved only by limited interventions), promotion of the diversity of domestic plant and animal species, and exclusion of the use of synthetic products and GMOs.

<sup>8</sup> The Directive no. 2001/81/CE on National Emission Ceilings (NEC), transposed in Italy by the Legislative Decree no. 171/2004, set a limit of 419 thousand tonnes/year for the period 2010-2019. According to the Directive no. 2016/2284/Ue, transposed by the Legislative Decree no. 81/2018, the cap for ammonia emissions is set at 95% of the 2005 baseline for 2020, and at 84% for 2030.



### Irregular employment in agriculture shows no sign of decline

In terms of social sustainability, Italian agriculture is characterised by a high employment irregularity rate: 24.1% in 2019 (versus an average of 12.6% for the entire economy; see Goal 8), up 3.4 percentage points since 2010 (Figure 2.10)<sup>9</sup>. This phenomenon showed different degrees of intensity across the territory, but the component of the workers not in regular position had a significant weight in all geographical areas: about one out of seven persons in the North, more than one out of five in the Centre, almost one out of three in South and Islands.

In many ways, such an extensive use of irregular workforce represents a clear point of weakness in the sustainability profile of Italian agriculture. Firstly, because of its direct effects on the living conditions of workers and the social danger inherent to the widespread of illegal hiring practices. Then, because of the risks this situation poses to consumer safety and environmental protection, and the obstacles it puts along the path to the objectives of improving the quality of employment (Goal 8) and strengthening legality (Goal 16).



<sup>9</sup> Estimates referring to the entire branch of Agriculture, forestry and fishing (NACE Rev2).

Figure 2.9 - Ammonia emissions from the agricultural Figure 2.9 - Ammonia emissions from the agricultural figure 2.9 - Ammonia ceilings set by the NEC Directives. Years 2010-2019 (thousand tonnes)

Figure 2.10 - Share of employed persons not in regular occupation in agriculture, forestry and fishing, by geographical area. Years 2010-2019 (percentage values)



Source: Istat, processing on Ispra data

Source: Istat, National accounts

To summarize, for the environmental aspects of sustainability in agriculture, the situation appeared generally better in the Centre-South, due to higher shares of agricultural land under organic farming (Figure 2.5), lower distributed amounts of fertilisers and pesticides per hectare (Figures 2.7 and 2.8) and lower ammonia emissions (almost two-thirds of which come from Lombardia, Piemonte, Veneto and Emilia-Romagna). Northern agriculture, on the other hand, was characterised by higher productivity (in 2020, the value of output per labour unit was 164.4% of the Italian average<sup>10</sup>) and a more limited, although far from negligible, use of irregular employment (13.7% in 2019).

<sup>10</sup> Value referred to the farms overall.

#### Territorial convergence on indicators of sustainable and productive agriculture<sup>1</sup>

Currently, the statistical measures available for Italy to monitor target 2.4 come from different sources, both statistical and administrative, and refer only to some of the eleven parameters that define the concept of sustainable and productive agriculture in the IAEG-SDGs indicator 2.4.1<sup>2</sup>.

In this situation, an exercise of integrated analysis of the statistical measures available at territorial level may be useful to assess the convergence of regional agricultural systems with respect to the three dimensions of sustainability: economic, environmental and social. To this end, we may consider some measures for which regional time series are available for the period 2010-2019/20. For the economic dimension, the value added per labour unit in agriculture, hunting and forestry<sup>3</sup>; for the environmental dimension, the plant protection products distributed; for the social dimension, the share of person employed not in regular position and, as a cross-cutting indicator, the share of agricultural land invested in organic farming<sup>4</sup>.

	Table	1-	Sustainability	indicators on	agriculture
--	-------	----	----------------	---------------	-------------

Dimension	Indicator	<b>y</b> 0	<b>y</b> t (a)	Variation (b)
Economic	Value added per labour unit (thousand euro, current prices)	22.0	27.4	+24.5% •
Environmental	Plant protection products distributed in agriculture (kg per hectare)	16.3	13.8	-15.4% •
Social	Share of employed persons not in regular occupation in agriculture (percentage values)	20.7	24.1	+16.4% •
Environmental/ Economic	Share of agricultural land under organic farming (percentage values)	8.7	16.4	+88.8% •

Source: Istat, National accounts and Survey on plant protection products provided for agricultural use; Ministry of Agricultural, Food and Forestry Policies (a) Values referred to 2020 for Plant protection products and Organic farming, 2019 for other measures. (b) Green dots indicate an improvement, red dots a deterioration.

The predominantly positive trends at national level may conceal profound differences in regional dynamics. The objective is to investigate whether the Italian agriculture system is evolving towards profiles of higher sustainability and, in particular, whether, and to what extent, a reduction of the wide territorial gaps that characterise it is underway. Among the different procedures proposed in the literature for this type of analysis, we chose to use the *β*-convergence<sup>5</sup>, that allows recording the dynamics of territorial differentials related to each of the aspects represented by the four indicators considered.

5 The procedure is formalised by the following linear regression model:

 $TV_{i} = \beta_{0} + \beta_{1} \ln(y_{0}) + \varepsilon_{i},$ 

where TV<sub>i</sub> is the average change rate of the j-esimo, given b  $\ln(y_i/y_o)/T$ ; T T is the length of the time span considered, and  $\varepsilon_i$  is the regression error. In the case of convergence (i.e. a reduction in territorial differentials), the parameter  $\beta_i$  assumes a negative value. See Krugman, P.R. (1998) What's New About New Economic Geography?, in: *Oxford Review of Economic Policy*, Vol. 14, p. 7-17; Baldwin, R.E., Martin Ph. (2003) *Agglomeration and Regional Growth*, CEPR Discussion Paper no. 3960, London.



<sup>1</sup> This section was edited by Francesco G. Truglia with contributions by Luigi Costanzo.

<sup>2</sup> See <u>https://unstats.un.org/sdgs/metadata/files/Metadata-02-04-01.pdf</u>. An application at least partial of the IAEG-SDGs methodology for implementing indicator 2.4.1 will only be possible with the full operability of the Statistical Farm Register. Indeed, the procedure involves identifying individual farms that practice sustainable and productive agriculture on the basis of eleven parameters, then calculating their proportion to the reference universe in terms of utilised agricultural land.

<sup>3</sup> As a proxy of the farm production per labour unit, for which regional estimates are no longer available as of 2016. Estimates relate to the branches of Crop and animal production, hunting and related service activities and Forestry and logging (parts of Agriculture, forestry and fishing). Source: Istat, National Accounts.

<sup>4</sup> Certified organic farms apply production methods that are considered not harmful to the environment and it can be assumed that most of them, as commercial enterprises subject to market selection, also meet criteria of economic validity.

The results provide a very heterogeneous picture of current trends, referring to the different dimensions of sustainability. For three of the indicators considered (value added per labour unit, share of organic agricultural land and non-regular employment), the negative values of parameter  $\beta_1$  indicate a trend towards reducing regional gaps, while such differences remain broadly unchanged for plant protection products (Figure 1). This development towards higher homogeneity, however, can only be positively assessed for the value added per labour unit (economic dimension) and the share of organic agricultural land, although the latter shows a weaker degree of convergence. Conversely, there is serious concern about the convergence of regions towards larger recourse to non-regular workforce, which indicates a deterioration in the social sustainability profile of Italian agriculture. Finally, the convergence of the indicator on plant protection products (environmental dimension) can be assessed as negligible: in this case, the persistence of strong regional differences reflects the structural diversity of the production systems in place in the different parts of Italy, despite a positive trend towards the reduction of distributed quantities.



#### Figure 1 - Convergence of Italian regions on sustainability indicators for agriculture. Years 2010-2020

Source: Istat, National accounts and Survey on plant protection products provided for agricultural use; Ministry of Agricultural, Food and Forestry Policies



## **GOAL 3**

ENSURE HEALTH AND WELL-BEING FOR ALL AND ALL AGES<sup>1</sup>

### In brief

- In 2021, the total number of deaths due to all causes was lower than 2020 (709,035 deaths, 37 thousand less equal to -5.0%), although it remained at still high levels, 63 thousand more than 2015-2019 average (+9.8%).
- Much of the mortality excess in 2021 was due to COVID-19 and it was concentrated in the first four months of the year, when vaccination coverage was still very low. Despite in 2020 the excess mortality was higher in the North, in 2021 it involved the whole country.
- Life expectancy at birth in 2021 did not return to 2019 levels, although in the North-West and North-East the indicator recovered 1.3 and 0.3 years on 2020, respectively, reaching 82.8 and 83 years. In South and Islands in 2021 the loss of life expectancy at birth was more pronounced than in 2020 (0.5 years less on 2020), reaching 81.3 years.
- Pandemic and the measures to mitigate it continued to affect the development of mobility and road accidents also in 2021. Compared to 2020, accidents and injuries decreased in January and February and increased significantly in the period March-June 2021, to return very close to the pre-pandemic amount in the second half of the year.
- The long lasting health emergency has led citizens to give up many health services: 11% of residents have given up health services for economic issues or difficulties to access for the effects of the pandemic (they were 9.6% in 2020 and 6.3% in 2019).
- Among the health service typologies given up in 2020 there were pediatric vaccinations. In 2020, vaccination coverage at 24 months for polio, measles and rubella, for children born in 2018, reached 94%, 92.7% and 92.2% respectively (-1, -1.8 and -2 percentage points on 2019), below the 95% target recommended by the World Health Organisation.

The statistical measures released by Istat for Goal 3 are thirty-seven and refer to 17 UN-IAEG-SDGs indicators (Table 3.1).



<sup>1</sup> This section was edited by Barbara Baldazzi with contributions by Silvia Bruzzone and Silvia Simeoni.

	INDICATOR	Compared to SDG indicator	Value	VARIATIONS			CONVERGENCE	
Ref. SDG				Compared to 10 years before		Compared to the previous year	AMONG REGIONS compared to 10 years before	
3.2.1	Under-five mortality rate							
Under-five	e mortality rate (Istat, 2021, per 1,000 live births)	Identical	3.00				$\Leftarrow \Rightarrow$	
3.2.2	Neonatal mortality rate							
Neonatal I	nortality rate (Istat, 2019, per 1,000 live births)	Identical	1.69				$\Leftarrow \Rightarrow$	
3.3.1	Number of new HIV infections per 1,000 uninfected population, by sex, age and key population	ons						
Number o inhabitant	f new HIV infections per 100,000 (Italian National Institute of Health - ISS, 2020, per 100,000 s)	Identical	2.2		(a)		⇐⇒	
3.3.2	Tuberculosis incidence per 100,000 population							
Tuberculo	sis incidence per 100,000 population (Ministry of Health, 2020, per 100,000 inhabitants)	Identical	3.8		(b)			
3.3.4	Hepatitis B incidence per 100,000 population							
Hepatitis I ECDC; Mi	B incidence per 100,000 population (European Centre for Disease Prevention and Control - nistry of Health, 2020, per 100,000 inhabitants)	Identical	0.3		(c)			
3.4.1	Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory di	sease						
Probabilit chronic re	y of dying between ages 30 and 69 years from cardiovascular diseases, cancer, diabetes, or spiratory diseases (Istat, 2019, percentage values)	Identical	8.71				$\Leftarrow \Rightarrow$	
Healthy lif	e expectancy at birth (Istat, 2021, average number of years)	National context	60.5				$\Rightarrow \Leftarrow$	
Overweigl	nt or obesity (standardised rates) (Istat, 2021, standardised rates per 100 persons)	National context	44.4				$\Leftarrow \Rightarrow$	
3.4.2	Suicide mortality rate							
Age stand	ardised suicide mortality rate (Istat, 2019, per 100,000 inhabitants)	Identical	5.6				$\Leftrightarrow \Rightarrow$	
Number o	f deaths attributed to suicide (Istat, 2019, N.)	Identical	3,646					
3.5.2	Alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of	oure alcohol						
Litres of p	ure alcohol per capita (WHO, 2019, litre per capita)	Identical	7.65					
Alcohol co	onsumption (standardised rates) (Istat, 2021, standardised rates per 100 persons)	National context	14.7				=	
3.6.1	Death rate due to road traffic injuries							
Age stand	ardised death rate due to road traffic injuries (Istat, 2021, per 100,000 inhabitants)	Identical	4.7				$\Leftarrow \Rightarrow$	
Number o	f road traffic fatal injuries (Istat, 2021, N.)	National context	2,875					
Road acci	dents serious harmfulness rate (Ministry of Health, 2021, per 100,000 inhabitants)	National context	23.7		(a)		⇒⇐	
3.7.1	Proportion of women of reproductive age (aged 15-49 years) who have their need for family p	planning satisfi	ied with mod	dern methods	5			
Demand f	or family planning satisfied with modern methods (Istat, 2019, percentage values)	Proxy	64.5		(d)		$\Leftrightarrow \Rightarrow$	
3.7.2	Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age grou	р						
Age-speci	fic fertility rates for 1,000 women aged 10-14 (Istat, 2020, per 1,000 inhabitants)	Identical	0.015				$\Leftarrow \Rightarrow$	
Age-speci	fic fertility rates for 1000 women aged 15-19 (Istat, 2020, per 1,000 inhabitants)	Identical	16.2				$\leftarrow \Rightarrow$	

## Table 3.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and previous year and convergence among regions

## Table 3.1 continued - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and previous year and convergence among regions

				VARIATIONS		ONS	CONVERGENCE	
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before		Compared to the previous year	AMONG REGIONS compared to 10 years before	
3.8.1	Coverage of essential health services							
Hospital b	eds (Istat processing on Ministry of Health Open Data, 2020, per 10,000 inhabitants)	Partial	31.0		(e)	$\bigcirc$	$\Rightarrow \Leftarrow$	
Day-hospi Data, 2020	tal beds in public and private care institutions (Istat processing on Ministry of Health Open , per 10,000 inhabitants)	Partial	3.4		(e)		⇐⇒	
Beds in th	e residential social-healthcare and social-welfare facilities (Istat, 2019, per 10,000 inhabitants)	Partial	70.5	$\bigcirc$			=	
Persons o	n antiretroviral therapy (ART) (UNAIDS, 2020, percentage values)	Partial	91.0					
Proportion percentag	n of deliveries with more than 4 check up visits during pregnancy (Ministry of Health, 2020, e values)	Proxy	89.4	$\bigcirc$	(d)		=	
Hypertens	ion (standardised rates) (Istat, 2021, standardised rates per 100 persons)	Proxy	19.8	$\bigcirc$			$\Leftrightarrow \Rightarrow$	
Diabetes (	standardised rates) (Istat, 2021, standardised rates per 100 persons)	Proxy	6.7				$\Rightarrow \Leftarrow$	
3.8.2	Proportion of population with large household expenditures on health as a share of total hou	sehold expen	diture or inc	ome				
Population 2021, perc	aged 16 and over reporting unmet needs for medical care due to being too expensive (Istat, entage values)	Proxy	0.9				(f)	
3.9.3	Mortality rate attributed to unintentional poisoning							
Unintentio	nal poisoning standardised mortality rate (Istat, 2018, per 100,000 inhabitants)	Identical	0.45				$\Rightarrow \Leftarrow$	
3.a.1	Age-standardized prevalence of current tobacco use among persons aged 15 years and olde	r						
Smoking (	standardised rates) (Istat, 2021, standardised rates per 100 persons)	Identical	19.5				$\Rightarrow \Leftarrow$	
3.b.1	Proportion of the target population covered by all vaccines included in their national program	nme						
Influenza	vaccination coverage age 65+ (Ministry of Health, 2021/2022, per 100 inhabitants)	Identical	58.1				$\Leftrightarrow \Rightarrow$	
Pediatric v	accination coverage: polio (Ministry of Health, 2020, per 100 inhabitants)	Identical	94.0		(d)		$\Leftrightarrow \Rightarrow$	
Pediatric v	accination coverage: measles (Ministry of Health, 2020, per 100 inhabitants)	Identical	92.7	$\bigcirc$	(d)		$\Leftarrow \Rightarrow$	
Pediatric v	accination coverage: rubella (Ministry of Health, 2020, per 100 inhabitants)	Identical	92.2	$\bigcirc$	(d)		$\Leftarrow \Rightarrow$	
3.b.2	Total net official development assistance to medical research and basic health sectors							
Total net o Foreign At	fficial development assistance to medical research and basic health sectors (Ministry of fairs and International Cooperation, 2020, million euro, current prices)	Identical	68.13					
3.c.1	Health worker density and distribution							
Physician	s (IQVIA ITALIA, 2021, per 1,000 inhabitants)	Identical	4.1		(a)		=	
Nurses an 1,000 inha	d midwives (Co.Ge.A.P.S Consorzio Gestione Anagrafica Professioni Sanitarie, 2020, per bitants)	Identical	6.6		(d)		$\Rightarrow \Leftarrow$	
Dentists ( inhabitant	Co.Ge.A.P.S Consorzio Gestione Anagrafica Professioni Sanitarie), 2020, per 1,000 s)	Identical	0.9		(d)	$\bigcirc$	$\Rightarrow \Leftarrow$	
Pharmacis inhabitant	rts (Co.Ge.A.P.S Consorzio Gestione Anagrafica Professioni Sanitarie), 2020, 1,000 s)	Identical	1.2		(d)		$\Leftarrow \Rightarrow$	
Legend					Not	es	pared to 2012	
	IMPROVEMENT	⇒⇐	CONVERG	BENCE	(b) \ (c) \	Variation comp Variation comp	pared to 2012 pared to 2010 pared to 2011	
$\bigcirc$	STABILITY	=	STABILITY	,	(d) \ (e) \	Variation comp	pared to 2013 pared to 2014 pared to 2010	
	DETERIORATION	$\Leftrightarrow \Rightarrow$	DIVERGEN	NCE	(1) V	апацоп сотр	ai 30 iu 2019	
	NOT AVAILABLE / NOT SIGNIFICANT							



••••

### In 2021, excess mortality remained higher than pre-pandemic average

An impact measure of COVID-19 outbreak on mortality is the excess of deaths from all causes. The excess mortality is estimated by comparing 2021 and 2020 data with the average of deaths over 2015-2019, to assess on both the direct impact of deaths for COVID-19, and those indirectly attributable, such as deaths due to delayed or missed treatment, because of the overload of the health system.

In 2021, the total number of deaths from all causes was lower than 2020, although it remained high, with 709,035 deaths, 37,000 fewer than in 2020 (-5%); 63,000 more than the 2015-2019 average (+9.8%; Figure 3.1). Much of the excess mortality during 2021 has been observed in the first quarter, when population vaccination coverage was still low.

In 2021 the excess mortality involved the entire national territory (+12.9% compared to 2015-2019 for the South and Islands, +8.6% for the Centre and +8.2% for the North); central-southern regions showed a higher increase in 2021 than 2020.





Source: Istat, integrated municipal daily mortality database; Italian National Institute of Health (ISS)

The most significant contribution to the excess mortality among age groups in 2021 was due to the increase in deaths in the over 80s age group. They explained 72% of the overall phenomenon. 455,170 people aged 80 and over have died (about 46,000 more than the 2015-2019 average). An additional 21% of excess mortality was concentrated in the age group 65-79, with 177,977 deaths in 2021 (more than 13,000 additional deaths than in 2015-2019).

The dynamics of mortality impacted on life expectancy at birth. In 2021, the recovery from the previous year did not allow to return to 2019 levels, although life expectancy at birth in the North-West and North-East increased 1.3 and 0.3 years respectively. In the regions of the Centre and the South and Islands, the loss in life expectancy at birth in 2021 was more pronounced (Figure 3.2), influenced by the different timing of spreading of COVID-19.



#### Figure 3.2 - Life expectancy at birth, by geographical area. Years 2019-2021 (a) (average number of years)

Source: Istat, Life tables of Italian population (a) Data for 2021 are provisional.

### In the second half of 2021 road accidents returned to pre-pandemic values

The pandemic and the measures to contain it also influenced the development of road accidents and mobility in 2021. In the first half of 2021, the trend changed compared to the usual seasonality. Compared to 2020, the number of accidents and injuries decreased in January and February and increased significantly over the period March-June 2021, to return to levels close to the pre-pandemic period in the second half of the year. In total, in 2021 there were 151,875 road accidents in Italy (+28.4% over 2020) with 2,875 deaths within 30 days of the event (+20.0%) and 204,728 injured (+28.6%); however, values were still decreasing compared to 2019 (-11.8% incidents, -9.4% victims and -15.2% injured).

## Slow and steady decrease in mortality from the most common causes of death before COVID-19

Among people aged 35-69, the likelihood of premature death due to malignant cancers, diabetes mellitus, cardiovascular disease and chronic respiratory diseases could be reduced with adequate and easily accessible health care, preventive actions through public health interventions, healthier lifestyles, and decreasing environmental risk factors. From 2004 to 2019, the decrease in premature mortality was about 26% (the probability of death dropped from 11.8% to 8.7%). More substantial progress was recorded among men (from 15.5% to 10.9%) and in the Northern regions (11.7% to 8.1%). The probability of death from these causes decreased from 5% to 3.7% for people aged 65-69 and from 3.2% to 2.3% for those between 60 and 64 years (Figure 3.3).







### People who give up health care were on the rise

Due to the continuing pandemic in 2021, 11% of citizens said they had to give up specialist visits (excluding dental visits) or diagnostic tests they needed, due to economic problems or difficulties in accessing the service (they were 9.6% in 2020 and 6.3% in 2019).

The spread of COVID-19 caused homogenous renunciation on the territory, with a more marked increase in the North-West, North-East and Centre (respectively +6.5, +5.3 and +4.5 percentage points compared to 2019) and among those under 65 (from +6.1 p.p. for 14-19 year-olds to +9 p.p. for 60-64 year-olds). Among people aged 65 and above, renunciations decreased compared to the previous year (Figure 3.4).





Source: Istat, Survey on Aspects of daily life

Source: Istat, Vital statistics on causes of death

In 2020, a reduction in paediatric vaccinations (an indicator calculated at 24 months' life of the child), confirmed by the trend of vaccinations at 36 months of life, was observed. In 2020, for children born in 2018, vaccination coverage at 24 months for polio, measles and rubella reached 94%, 92.7% and 92.2% respectively (-1.0, -1.8 and -2.0 percentage points compared to 2019; Figure 3.5). For polio, regions exceeding 95% (target recommended by the World Health Organisation) rose from 14 in 2019 to 9 in 2020. The Autonomous Province of Bolzano and Sicilia had percentages below 90%. For measles the regions exceeding 95% were only three (Toscana, Lazio and the Autonomous Province of Trento) while the Autonomous Province of Bolzano, Abruzzo and Calabria had percentages below 90%.

Figure 3.5 - Pediatric vaccination coverage for measles and polio on cohorts of 24 months-old children. Years 2013-2020 (percentage values)



Source: Ministry of Health, Vaccination Covers



#### SDGs targets for reproductive health and contraception in Italy<sup>1</sup>

A conscious and safe management of their fertility is a crucial part of the reproductive health of women, which every country must protect in the context of health promotion activities to guarantee well-being and health for all ages. The UN-IAEG-SDG indicator for monitoring access to family planning tools<sup>2</sup> is the demand for family planning met by modern methods, i.e. the percentage of sexually active and in couples 15 to 49 year-old women using modern contraceptive methods (as defined by the World Health Organisation) for responsible procreation and family planning needs.

The use of various contraceptive methods<sup>3</sup> was first collected by Istat in the 2013 Health Survey and, more recently, in the Italian version of the 2019 European Health Interview Survey4, conducted in all 27 countries of the European Union. In 2019, the value of the indicator that estimates the need for family planning met with modern methods in Italy was 64.5% corresponding to the share of sexually active 18-49 year-old women who live in couple and manage their fertility using "modern" contraceptive methods, i.e. safer than traditional ones. The denominator of this indicator includes women who use both modern and traditional contraceptive methods (estimated at 72.2% of women in couple), as well as those who do not take action to protect themselves from unwanted pregnancy, while declaring that they do not want children within two years, who therefore express an unmet need for family planning demand (estimated equal to 8.3% in Italy)

Figure 1 - Demand for contraception met with modern methods during the last 12 months of 18-49 year-old women in couple (a), by age class, geographical area, highest level of education attained. Year 2019 (a) (percentage values)



Source: Istat, European Health Survey (a) For 100 sexually active couples with planning needs (satisfied or unmet)

- This section was edited by Lidia Gargiulo and Laura lannucci with contributions by Barbara Baldazzi. 1
- 2 "Family Planning and The 2030 Agenda for Sustainable Devolpment". Data Booklet, 2019

https://www.un.org/en/development/desa/population/publications/pdf/family/familyPlanning\_DataBooklet\_2019.pdf. 3 The contraceptive methods classified as "modern methods" by the WHO and collected in the Heys Survey are: condoms, pill, hormonal intrauterine spiral or non-hormonal mechanical, vaginal ring, sterilisation, contraceptive and subcutaneous contraceptive patch, diaphragm; among the "traditional" methods in addition to interrupted coitus, still widespread in Italy compared to other countries, other natural remedies. It should be noted that for Italy it has not been feasible to detect the phenomenon for minors aged 15-17 years and that the reference period considered is the last 12 months, rather than the current use.

See European Health Survey (Ehis), Istat, 2019 https://www.istat.it/it/archivio/167485. 4

The use of modern contraceptive methods to avoid unwanted pregnancies and meet family planning was higher up to the age of 40: in the 18-29 age class, it affected 70.3% of women and decreased to 61.1% among women over 40. Graduate women largely used modern contraceptive methods: the percentage reached 73.9% compared to 58.5% for those with at most lower secondary school degree. At territorial level, the indicator recorded higher values in the North-West (69.6%) than in the Centre (63.7%) and in the South and Islands (56.0%; Figure 1). The high share of the Islands (63.8%) is due to the high share in Sardegna (70.3%). Regional variability moved in a range from Basilicata (48.2%) and Calabria (53.2%), to the Autonomous Province of Bolzano (74.8%) and Piemonte (71.3%).

In order to provide a temporal comparison of contraceptive methods, in 2019 the estimate of non-pregnant, sexually active and fecund 18-49 year-old women who in the 12 months used at least one method of contraception was 77.6%. This percentage increased from 2013 (71.3%). However, the use of modern methods remained unchanged (55.9%; Figure 2). Compared to the different methods, the condoms was the most widespread, used by 3 out of 10 women; 4 out of 10 in North-West, while among in the South and Islands it dropped to 25.4%. Among other methods, the coitus interruptus contraceptive practice, one of the traditional methods, was adopted by 21.1% of women, despite being unsafe, with a very similar spread to that of the contraceptive pill (19.2%). The use of the contraceptive pill was widely differentiated in the territory and reached 36.7% in Sardegna. Coitus interruptus varied from 5% of the Autonomous Province of Bolzano to a value about 5 times higher in Lazio





Source: Istat, European Health Survey (a) For 100 women in sexually active fertile couples (excluding women in menopause, sterile or pregnant).





GOAL 4

**QUALITY EDUCATION FOR ALL** PROVIDE QUALITY, EQUITABLE AND INCLUSIVE EDUCATION AND PROMOTE CONTINUOUS LEARNING OPPORTUNITIES FOR ALL<sup>1</sup>

### In brief

- Public and private early childhood services in Italy, in the 2020/2021 educational year, covered 27.2% of children aged 0-2 years. The gap between Centre-North and South and Islands is wide.
- In 2021, the share of people in the 18-24 age class who left the education and training system without a diploma or qualification is 12.7% (517 thousand people) and it is marginally lower compared to the previous year (14.2%).
- In the 2021/2022 school year, the share of children in grade 13 (upper secondary school) who did not achieve a sufficient level of literacy proficiency was 48.5%, stable compared to the previous year (48.2%) although still far from the pre-pandemic situation (35.7% in the 2018/2019 school year). Inadequate math proficiency was also high, 49.9 percent on average in Italy, on the levels of the previous school year (50.3%) although far from the levels achieved in the pre-pandemic (39.3% in 2018/2019). Territorial and citizenship gaps were still wide.
- In 2021, the share of people in the 30-34 age class who has completed tertiary education is 26.8%, lower than the previous year (27.8%). The share was lowest in the South and Islands (20.7%) and among men (25%).
- During 2021, 9.9% of people in the 25 64 age class attended at least one educational activity in the past 4 weeks (the share was 7.1% in 2020 and 8.1% in 2019), with a large recovery of the loss occurred in 2020, due to COVID-19. Participation has increased in all regions.

The statistical measures released by Istat for Goal 4 are thirty-four and refer to ten UN-IAEG-SDGs indicators (Table 4.1).



<sup>1</sup> This section was edited by Barbara Baldazzi with contributions by Claudia Busetti, Raffaella Cascioli, Donatella Grassi, Giulia Milan and Azzurra Tivoli.

Rif. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	)	Compared to the previous year	C F C 1 L	ONVERGENC AMONG REGIONS compared to 0 years refore
4.1.1	Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) reading and (ii) mathematics, by sex	) at the end of low	er secondary a	chieving at lea	ist a i	minimum prof	ficier	icy level in (i)
Inadequate	level of literacy (15-year-old students) (Oecd-Invalsi, 2018, percentage values)	Identical	23.3		(a)		(b)	
Inadequate	level of mathematics (15-year-old students) (Oecd-Invalsi, 2018, percentage values)	Identical	23.8		(a)	$\bigcirc$	(b)	
Inadequate	level of science (15-year-old students) (Oecd-Invalsi, 2018, percentage values)	Identical	25.9		(a)		(b)	
Inadequate	level of financial literacy (15-year-old students) (Oecd-Invalsi, 2018, percentage values)	National context	20.9		(a)		(b)	
Inadequate	level of literacy (students in grade 8) (Invalsi, 2021/2022, percentage values)	Identical	38.6		(c)	$\bigcirc$		⇒⇐
Inadequate	level of numeracy (students in grade 8) (Invalsi, 2021/2022, percentage values)	Identical	43.6		(c)			⇒⇐
Inadequate values)	level of English listening competence (students in grade 8) (Invalsi, 2021/2022, percentage	Identical	37.6		(c)			$\Leftrightarrow \Rightarrow$
Inadequate values)	level of English reading competence (students in grade 8) (Invalsi, 2021/2022, percentage	Identical	22.0		(c)			$\Rightarrow \Leftarrow$
Inadequate	level of literacy (students in grade 10) (Invalsi, 2021/2022, percentage values)	Identical	34.1		(c)		(d)	$\Rightarrow \Leftarrow$
Inadequate	level of numeracy (students in grade 10) (Invalsi, 2021/2022, percentage values)	Identical	45.6		(c)		(d)	$\Rightarrow \Leftarrow$
Inadequate	level of literacy (students in grade 13) (Invalsi, 2021/2022, percentage values)	Identical	48.5		(d)			⇒⇐
Inadequate	level of numeracy (students in grade 13) (Invalsi, 2021/2022, percentage values)	Identical	49.9		(d)			$\Rightarrow \Leftarrow$
Inadequate percentage	level of English listening competence (students in grade 13) (Invalsi, 2021/2022, values)	Identical	61.5		(d)			⇐⇒
Inadequate values)	level of English reading competence (students in grade 13) (Invalsi, 2021/2022, percentage	Identical	48.5		(d)			=
Implicit Lea values)	avers from Education and Training (students in grade 13) (Invalsi, 2021/2022, percentage	National context	9.7		(d)			⇒⇐
4.1.2	Completion rate (primary education, lower secondary education, upper secondary education	n)						
Early leave	rs from education and training (Istat, 2021, percentage values)	Proxy	12.7		(d)			⇒⇐
4.2.1	Proportion of children aged 24–59 months who are developmentally on track in health, learn	ning and psychos	ocial well-being	, by sex				
Percentage supplemen	of seats authorized in socio-educational services for early childhood (nurseries and tary services) on children aged 0-2 (Istat, 2020/2021, percentage values)	Proxy	27.2		(e)			⇒⇐
4.2.2	Participation rate in organized learning (one year before the official primary entry age), by s	ex						
Participatic Education,	on rate in organized learning (one year before the official primary entry age) (Ministry of Universities and Research, 2019/2020, percentage values)	Identical	96.3					⇐⇒
4.3.1	Participation rate of youth and adults in formal and non-formal education and training in the	e previous 12 moi	nths, by sex					
Participation	n rate of youth and adults (25-64) in formal and non-formal education and training in the 2 months (Istat, 2016, percentage values)	Identical	41.5		(f)		(g)	$\Rightarrow \Leftarrow$
Participatio	on in life-long learning (Istat, 2021, percentage values)	Proxy	7.2		(d)			$\Rightarrow \Leftarrow$
Students w percentage	ith disabilities: Pre-primary (Ministry of Education, Universities and Research, 2020, values)	National context	2.4					
Students w values)	ith disabilities: Primary (Ministry of Education, Universities and Research, 2020, percentage	National context	3.8					
Students w percentage	ith disabilities: Lower secondary (Ministry of Education, Universities and Research, 2020, values)	National context	4.2					
Students w percentage	ith disabilities: Upper secondary (Ministry of Education, Universities and Research 2020, values)	National context	2.7					
4.4.1	Proportion of youth and adults with information and communications technology (ICT) skill	s, by type of skill						
Individual v	who have basic or above basic overall digital skills (Istat, 2019, percentage values)	Identical	41.5		(b)		(h)	$\Leftrightarrow \Rightarrow$
People with	n high level of IT competencies (Istat, 2019, percentage values)	Proxy	22.0		(b)		(h)	$\Rightarrow \Leftarrow$
Financial li	teracy score of adults (Bank of Italy, 2020, mean score)	National context	11.2				(j)	

## Table 4.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

## Table 4.1 following - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

				VARIATIONS			
Rif. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	CONVERGENC E AMONG REGIONS Compared to 10 years before	
4.5.1	Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disa all education indicators on this list that can be disaggregated (*)	ability status, indi	genous peoples	and conflict-aff	ected, as data bec	come available) fo	
4.6.1	Proportion of population in a given age group achieving at least a fixed level of proficiency	in functional (a)	literacy and (b) ı	numeracy skills,	by sex		
People hav	ing completed tertiary education (30-34 years old) (Istat, 2021, percentage values)	National context	27.8			=	
STEM grad	uates (Istat, 2019, per 1,000 population aged 20-29)	National context	15.1		(k)	$\Leftarrow \Rightarrow$	
4.a.1	Proportion of schools offering basic services, by type of services						
Physically	accessible schools (Istat, 2020/2021, percentage values)	Proxy	33.1				
Physically	inaccessible schools (Istat, 2020/2021, percentage values)	Proxy	44.9				
Schools wi percentage	th pupils with disabilities by adapted computer workstations: Primary (Istat, 2021, values)	Identical	73.9			$\Rightarrow \Leftarrow$	
Schools wi percentage	th pupils with disabilities by adapted computer workstations: Lower Secondary (Istat, 2021, values)	Identical	77.4			$\Leftrightarrow \Rightarrow$	
Schools wi percentage	th pupils with disabilities by adapted computer workstations: Upper Secondary (Istat, 2021, values)	Identical	76.1		(c)	$\Rightarrow \Leftarrow$	
4.b.1	Volume of official development assistance flows for scholarships by sector and type of stu	dy					
Volume of of Foreign	official development assistance flows for scholarships by sector and type of study (Ministry Affairs and International Cooperation, 2019, million euro (current prices))	Identical	38.39		(f)		
Legend				Notes (a) Variation com	pared to 2009		
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGENC	(b) Variation compared to 2015 (c) Variation compared to 2017/2018 24(d) Variation compared to 2018 (e) Variation compared to 2018/2019 (f) Variation compared to 2013 (g) Variation compared to 2006 (h) Variation compared to 2001			
$\bigcirc$	STABILITY	=	STABILITY				
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGENCE	<ul> <li>(j) Variation comp</li> <li>(k) Variation comp</li> <li>(*) There are 33 p</li> </ul>	ared to 2016 bared to 2017 arity indices in the da	tabase and they	
	NOT AVAILABLE / NOT SIGNIFICANT			relate to 23 indica	tors in this Goal		

. . . . . . . . . . . . . . . . . .

### Not enough seats available in kindergartens for children 0-2 years-old

In the educational year 2020/2021, the mismatch between supply and demand for educational services was persisting especially for children in the age class 0-2 years. Public and private early childhood services active in Italy in year 2020/2021 were 13,542, for a total supply of 350,670 seats available to cover the needs of about 1 million and 290 thousand children in the age class 0-2 years. Available seats therefore covered the demand of 27.2% of children in the age class 0-2 years. It was still below the 33% benchmark set by the EU for 2010<sup>2</sup>. There were territorial disparities between the central-north and regions in South and Islands (Figure 4.1). The highest coverage was located in Umbria (44%), Emilia-Romagna (40.7%) and Valle D'Aosta (40.6%), where more than 4 out of 10 children had the opportunity to attend a nursery; conversely in Campania (11%), Calabria (11.9%) and Sicilia (12.5%) only 1 out of 10 children had the same chance.

The participation of 5 year-old children (who are about 490 thousand) in pre-primary educatin (or fisrt year of primary school) was homogeneous in the country (96.3%).

Figure 4.1 - Percentage of seats authorised in socio-educational services for early childhood (nurseries and supplementary services) for children in 0-2 age class, by region. Educational years 2013/2014 and 2020/2021 (percentage values)



Source: Istat, Survey on nurseries and supplementary services for early childhood

<sup>2</sup> The Lisbon European Council of 2000 established the strengthening of services in the pre-primary school age. The strategy was later declined into two measurable targets. In the pre-primary school age, between 3 and 5 years, the need to offer a seat to at least 90% of children was established. For early childhood, under the age of 3, offering at least 33 seats per 100 children was indicated as a target. Despite this, the provision of pre-primary education services in Italy suffers from severe structural deficiencies and has been the subject of European Recommendation No. 2 of 2019 and one of the objectives of Mission 4 of the NRPR.

### Students' skills in Italian and mathematics were stable, although not sufficient yet

In the school year 2021/2022, the share of students in grade 13 (fifth class of upper secondary school) who did not reach a sufficient level of literacy<sup>3</sup> was 48.5%, stable compared to the previous year (48.2%) and still very far from the pre-pandemic situation (35.7% in the 2018/2019 school year). Inequalities were widespread according to territory, gender and nationality (Figure 4.2). The share of insufficient literacy skills among students was 60.9% in the South and Islands compared to 36.7% in the North; 54.3% among boys compared to 42.6% among girls; 65.4% among first-generation foreign children compared to 46.5% among children born from Italian parents. Moreover, the share of insufficient students was higher among students in vocational institutes (83.2%) than among high school students (31.4%).

Inadequate mathematical competence was high, 49.9% on average in Italy, similar to the previous school year (50.3%) and, like for literacy skills, far from the school year prior to the pandemic (39.3% in 2018/2019). Territorial, gender and nationality gaps follow the profiles described for literacy competences (Figure 4.3), with a single exception for gender. In mathematics, girls did not achieve sufficient levels in 54.1% of cases, males in 45.6%



## Figure 4.2 - Inadequate level of literacy (students in grade 13), by gender, geographical area, nationality, typology of institute. School years 2018/2019, 2020/2021 and 2021/2022 (percentage values)

Source: INVALSI

HHUR SILVES

<sup>3</sup> The results of the Italian and Mathematics tests are measured by levels: from 1 (the lowest) to 5 (the highest). Students who do not achieve level 3 have skills that are not adequate to the school grade (o level) they attend.





Source: INVALSI

The poor skills learned over the years can lead the student to drop from the school context without achieving an upper secondary school diploma. In Italy, in 2021, the share of people in the 18-24 age class who left the education and training system without achieving a diploma or qualification was 12.7%, equal to 517 thousand young people, a marginal reduction compared to the previous year (14.2%). Early school leaving involved young men (14.8%) more than young women (10.5%); the regions of the South and Islands (16.6%) compared to the northern regions (10.7%; Figure 4.4).

Figure 4.4 - Early leavers from education and training, by geographical area and gender. Years 2018, 2020 and 2021 (percentage values)



Source: Istat, Labour force survey

## The share of tertiary graduates has fallen in 2021

In 2021, in Italy, the share of the population in the 30 -34 age class who completed tertiary education fell compared to the previous year (26.8% and 27.8% respectively, significantly below the 40% European target). Differences in the territory were deep, to the detriment of the South and Islands (20.7%) compared to the North (30.4%) and the Centre (30%). Gender gaps were also significant, for the benefit of women. One woman out of three held a tertiary degree, conversely among men the ratio was one out of four.

During a quick technological innovation age, the choice to study STEM (Science, Technology, Engineering and Mathematics) disciplines<sup>4</sup> is highly strategic. Italy is characterised by a low level of the incidence of graduates in STEM disciplines. In 2020, only 1.6% of all people in the 20-29 age class<sup>5</sup>, achieved a STEM degree. Gender gap is favorable for men. (Figure 4.5).



Figure 4.5 - STEM graduates, by gender. Years 2015-2019 (per 100 inhabitants aged 20-29)

Source: Istat, Processing on data from Ministry of University and Research

## Resumption of participation in life-long learning

During 2021, 9.9% of population in the 25-64age class attended at least one training activity in the 4 weeks prior to the interview. The phenomenon signals a recovery from the loss of training activities in 2020 due to the reduction in mobility and the closure of activities, schools, learning locations and the management of distance learning (the share was 7.1% in 2020 and 8.1% in 2019).



<sup>4</sup> Specifically, the STEM disciplinary areas are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.

<sup>5</sup> This is the reference age group used conventionally to measure the intensity of the phenomenon.

Participation increased in all regions and geographical areas (Figure 4.6) with higher intensities in the South (7.7%, +2.1 percentage points) and in the Islands (8.1%, +2.5 percentage points).



Figure 4.6 - Participation in life-long learning, by geographical area. Years 2018-2021 (percentage values)

Source: Istat, Labour force survey

### Implicit early school leaving<sup>1</sup>

Early school leaving is a social problem that affects all advanced countries and has been addressing by the European Union for more than two decades in an effort to reduce it. Early school leaving is measured by referring to the share of people in the 18-24 age class who have achieved at most the lower secondary (ISCED 2) and are not included in a training programme on total people in the 18-24 age class<sup>2</sup>. However, this measure captures only the phenomenon of explicit school leaving, the one visible in official statistics, and omits the non-negligible share of students who achieve an upper secondary school diploma without having acquired the minimum skills required at that grade (comprehension of Written language, Mathematics and English). These students are not so far from those who have formally dropped out school since they are equally at high risk of social marginalisation. We can talk of implicit leavers from education, to describe this condition as a measure of fragility in basic learning.

Young people in this condition represent an emergency also for their country, because they face adult life with scarce and not adequate basic skills to live independently and consciously in the society and because it is difficult to look at them as a target for specific support measures.

Since 2019, INVALSI tests made feasible to provide an initial representation and quantification of implicit leavers since, by that year, students of the last year of upper secondary school had to face a standardised test in Italian, Mathematics and English (reading and listening skills) in accordance with the final goals established by National Guidelines in upper secondary schools. Although only partially, INVALSI tests quantify the proportion of students who do not reach these goals, define their characteristics and provide a measurement of their learning levels. The results of the Italian and Mathematics tests are measured by levels: from 1 (the lowest performance) to 5 (the best performance). English tests have been structured in accordance with the levels of the Common European Framework of Reference for Languages (CEFR)<sup>3</sup>.

Implicit early school leaving is defined as the share of students who, at the end of upper secondary school (grade 13), have basically the same Italian and Mathematics skills of students attending 10 or a lower grade, and who have achieved at most A2 level, which is the level of expected at the end of lower secondary school (grade 8).

In the school year 2021/22, in Italy, 9.7% of students in grade 13 was estimated as implicit leavers, a stable share compared to the previous year despite increased in comparison with school year 2018/19 (Figure 1). The phenomenon followed the traditional gradient, with lower values in the North (3.7%) and in the Centre (9.2%) than the South and Islands (16.5%). In the South and Islands some regions had a proportion of students in implicit dispersion that reaches and exceeds 18% (namely in Calabria, Sardegna and Campania). Moreover, implicit leavers recorded larger shares among boys (12%) than among girls (7.4%).

Usually, the difficulty in achieving targets in learning basic skills is a process that begin since primary and lower secondary school. The possibility of measuring implicit dispersion in other school grades might facilitate the prevention of early school leaving issues, frequently caused by the failure to achieve adequate proficiency levels.



<sup>1</sup> This section was edited by Patrizia Falzetti (INVALSI) with contributions by Barbara Baldazzi.

<sup>2</sup> Early leavers from education and training (ELET). See MIUR document: <u>https://www.miur.gov.it/</u> <u>documents/20182/0/Rapporto+sul+contrasto+del+fallimento+formativo/7575f155-63f9-479a-a77f-</u> <u>1da743492e92?version=1.0</u>.

<sup>3</sup> The six levels within CEFR are pre-A1, A1 (target for grade 5), A2 (target for grade 8), B1, B2 (target for grade 13), C1 and C2. At the end of upper secondary school (grade 13), the Italian school system requires students to reach level B2.



Figure 1 - Implicit leavers from education and training (students in grade 13), by region. School years 2018/2019, 2020/2021, 2021/2022 (percentage values)

Source: INVALSI



## GOAL 5

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS<sup>1</sup>

### In brief

- In 2021, in Italy, 51.9 women per 100,000 called the 1522 helpline because victims of violence or stalking (+2 percentage points compared to 2020). The increase in the number of calls of women victims of violence was widespread in the territory.
- In 2020, 263 anti-violence centers and 242 women's shelters were active (in 2019 they were respectively 281 and 257).
- In 2020, 116 murders of women were committed (111 in 2019). 83.6% of the women's murders committed in 2020 took place at home.
- In 2021, the ratio between employment rate for women aged 25-49 with at least one child aged 0-5 and employment rate of women 25-49 years without children stood at 73%, lower than 2020 (-1.2 percentage points). The ratio was more unfavorable for women aged 25-34 years (60.4%), with a low educational level (48.7%) and for foreign women (46.4 %).
- In 2021, the Italian women's representation in the European Parliament was 39.5% (+0.5 p.p. compared to the EU27 average). In 2021 the share of women elected in the regional councils increased slightly.
- At the end of 2021, Italy achieved the second position (38.8%) following France (45.3%), for female presence in the boards of directors and in the senior management roles of the large companies listed in the stock exchange. Women with a CEO (Chief Executive Officer) (1.9%) and President role (3.5%) were still scarce and they were allocated in listed companies representing 2.4% of the total market value and 20.7% of the total capitalisation.

The statistical measures released by Istat for Goal 5 are eighteen and refer to seven UN-IAEG-SDGs indicators (Table 5.1).



<sup>1</sup> This section was edited by Carmen Federica Conte.

Table 5.1 -	Statistical measures relea	ased by Istat, taxonor	ny compared to \$	SDGs indicators,	variations com	pared to 10
	years before and converg	jence among regions				

	INDICATOR	Compared to SDG indicator		VARIATIONS			CONVERGENCE AMONG	
Ref. SDG			Value	compared f 10 years before	compared to the previous year		REGIONS compared to 10 years before	
5.2.1	Proportion of ever-partnered women and girls aged 15 years and older subjected to physic previous 12 months, by form of violence and by age	al, sexual or psych	iological vio	lence by a c	urrent	or former intin	nate partner in the	
Proportion partner in	n of women aged 16-70 subjected to physical or sexual violence by a partner or previous the previous 12 months (Istat, 2014, percentage values)	Identical	2.0		(a)			
Intimate p	artnership violence rate (Istat, 2014, percentage values)	Proxy	4.9		(a)		$\Leftarrow \Rightarrow$	
Proportion previous 1	n of women aged 16-70 subjected to psychological violence by a current partner in the 12 months (Istat, 2014, percentage values)	Proxy	9.2		(a)			
Women vi	ctims of violence reported to the 1522 helpline 1522 (Istat, 2021, per 100.000 women)	National context	51.9		(b)		$\Leftrightarrow \Rightarrow$	
Murders o (Istat, 202	f women committed by partners, ex-partners or other relatives (per 100 women murdered) 0, percentage values)	National context	83.6					
Anti-viole 100.000)	nce centers and women's Shelters: rate per 100,000 women aged 14 and over (Istat, 2020, per	National context	1.87				$\Leftarrow \Rightarrow$	
5.2.2	roportion of women and girls aged 15 years and older subjected to sexual violence by perso age and place of occurrence	ons other than an i	ntimate part	tner in the pr	eviou	s 12 months, by	/	
Proportion the previo	o f women aged 16-70 subjected to sexual violence by a man other than intimate partner in us 12 months (Istat, 2014, percentage values)	Identical	1.6		(a)			
Proportion partner in	n of women aged 16-70 subjected to physical or sexual violence by a man other than intimate the previous 5 years (Istat, 2014, percentage values)	Proxy	7.7		(a)		⇐⇒	
5.4.1	Proportion of time spent on unpaid domestic and care work, by sex, age and location							
Ratio of er rate of wo	mployment rate for women aged 25-49 with at least one child aged 0-5 to the employment men 25-49 years without children (Istat, 2021, percentage values)	National context	73.0		(c)		⇒⇐	
Proportion	n of time spent on unpaid domestic and care work (Istat, 2014, percentage values)	Identical	13.5				$\Rightarrow \Leftarrow$	
Share of h time (Ista	ousehold work time carried out by women in a couple on the total of the household work t, 2020/2021, percentage values)	National context	62.6			$\bigcirc$		
5.5.1	Proportion of seats held by women in (a) national parliaments and (b) local governments							
Women ar	nd political representation in Parliament (Istat, 2018, percentage values)	Proxy	35.4		(d)		$\Rightarrow \Leftarrow$	
Women ar values)	nd political representation at regional level (Individual regional councils, 2021, percentage	Proxy	22.3		(e)		⇒⇐	
5.5.2	Proportion of women in managerial positions							
Women in	decision-making bodies (Various, 2022, percentage values)	Proxy	19.1		(b)			
Women in	the boards of companies listed in stock exchange (Consob, 2021, percentage values)	Proxy	41.2					
5.6.1	Proportion of women aged 15-49 years who make their own informed decisions regarding	sexual relations, c	ontraceptive	e use and rep	orodu	ctive health car		
Voluntary	abortion rate of women aged 15-49 years for 1,000 women (Istat, 2020, per 1.000)	National context	5.1				⇒⇐	
5.b.1	Proporzione di individui che posseggono un telefono cellulare, per sesso.							
Proportion	n of individuals who own a mobile telephone, by sex (Istat, 2021, percentage values)	Proxy	84.2				$\Rightarrow \Leftarrow$	
People ag 2021, per	ed 16-74 who used internet once a week (including every day) in the last 3 months (Istat, centage values)	National context	80.2				$\Rightarrow \Leftarrow$	
Legend						Notes	proved to 2006	
	IMPROVEMENT	⇒⇐	CONVERGENCE (a) Variation compar (b) Variation compar (c) Variation compar (c) Variation compar		npared to 2006 npared to 2013 npared to 2018			
	STABILITY	=	STABILITY			(a) Variation cor (e) Variation cor	npared to 2008 npared to 2012	
	DETERIORATION	$\Leftrightarrow \Rightarrow$	DIVERGEN	ICE				
	NOT AVAILABLE / NOT SIGNIFICANT							

# Women victims of violence who called the 1522 helpline against violence and stalking increased

In 2021, in Italy, 51.9 per 100,000 women called the toll-free number 1522 because they were victims of violence or stalking (they were 49.6 in 2020 and 27.5 in 2019; Figure 5.1). The increase of calls was equal to 2 percentage points compared to 2020 and 24.4 p.p. compared to 2019, widespread on the territory. Lazio was the region with the larger number of calls (69 per 100,000 women; +8.5 p.p. compared to 2020); Valle d'Aosta the region with the lowest number of calls (approximately 9 per 100,000 women; -17.2 p.p. compared to 2020). Signs of reduction are also recorded in Molise (about 27 per 100,000 women; -2.8 p.p.) and Calabria (34 women; -2.3 p.p.).in Molise (circa 27; -2.8 p.p.) e in Calabria (34 donne; -2.3 p.p.).





Source: Istat, Department for Equal Opportunities, 1522 helpline against violence and stalking

In 2021, all types of violence reported to 1522<sup>2</sup> showed a slight increase compared to the previous year (32,134 alerts; +3.8% compared to 2020) consolidating the pronounced worsening during the pandemic (+72% compared to 2019). Psychological violence (11,790 alerts), physical violence (8,621 alerts) and threats (7,245 alerts) are the most frequently reported cases.

### The number of anti-violence centres and women's shelters decreased

1522 operators redirect many victims of violence to the anti-violence centres (AVC) and the women's shelters in the territory. They help victims to find an escape from their condition. 263 anti-violence centres and 242 were active in 2020 (in 2019 they were respectively 281 and 257)<sup>3</sup>. In 2020, the average national coverage rate fell to 1.87 services per 100,000 women older than 14 years (coverage rate was 1.98 in 2019). The presence of AVC and

<sup>2</sup> For each call it is possible to indicate more than one type of violence.

<sup>3</sup> Data refer to anti-violence centres and women's shelters participating in the Istat Survey on anti-violence centres and women's shelters.

women's shelters in the territory continued to be uneven in the country. Services were more concentrated in the North-East, 2.87 services per 100,000 women (it was 2.68 in 2019). In central Italy the degree of coverage remained substantially unchanged in 2020 (1.86). In the South and Islands there was a reduction, 1.31 services (it was 1.41 in 2019), especially in the Islands. In 2020, Basilicata was the only Italian region to not make available services (0.4 services per 100,000 women in 2019).

### Most female murders occurred directly from the partner

In 2020, 116 murders of women were committed in Italy, 5 more than the previous year. 83.6% of murders occurred at home namely, 60 women (51.7% of the total murders) were murdered by their partner, 30 (25.9%) murdered by another relative and 7 (6%) by the former partner.

### High level of education facilitated the reconciliation of private and work life

The ratio between the employment rate for women aged 25-49 with at least one child aged 0-5 and the employment rate of women without children in the same age group is an indirect indicator to assess the difficulty of women in reconciling work with family organisation, especially in case of young children.

In 2021, the employment rate of 25-49 year olds was 53.9% for women with pre-school children and 73.9% for women without children. The ratio between the rates was 73%, -1.2 percentage points compared to 2020: a further worsening<sup>4</sup>, mainly due to the increase of women without children employed.

In 2021, the indicator recorded a setback especially in the North-West (76.8%; -5.6 p.p. compared to 2020) and in the Islands (66.1%; - 4.6 p.p.). Signs of improvement emerged in central Italy (84.5%; +3.5 p.p.), especially in Lazio (84.3%; +5.6 p.p.), and, in the South, especially in Molise (93.1%; +11.8 p.p.).

The comparison of employment levels of women with children respect those without children is significantly affected by the level of education. The indicator was 92.8% (+3.1 p.p. compared to 2020) in case of tertiary<sup>5</sup> education, decreased to 70.9% (-3.3 p.p.) in case for secondary education<sup>6</sup> and fell below 50 % for lower educational levels<sup>7</sup> (48.7%; -1.7 p.p.). The age group analysis reveals the most critical issues for women falling in the 25-34 age group (60.4%) compared to women in the 45-49 age group (90%). The ratio is also unfavorable for foreign women (46.4% foreign women; 52.2 % in case of nationality in EU27) compared to Italian women (77.9%; Figure 5.2).

<sup>4</sup> The ratio between the employment rates (25-49 years) of women with preschool children and women without children is 100 in case of rate equality. A ratio below 100 show larger difficulties for working women with preschool children than working women without children.

<sup>5</sup> ISCED 5, 6, 7, 8.

<sup>6</sup> ISCED 3, 4.

<sup>7</sup> ISCED 0, 1, 2.



Figure 5.2 - Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children, by geographical area, age group, citizenship,level of education. Years 2020-2021 (percentage values)

Source: Istat, Labour force survey

The household workload inequality index estimates the distribution of family care workload within the couple. In 2021, inequality index showed a slight improvement compared to the previous year. In couple with both partners employed and women aged 25-44, the proportion of time spent by women for family work was 62.6 % of the total family work time of the couple. This ratio was still far from the 50% proportion which identifies a situation of perfect distribution of the family workload within the couple<sup>8</sup>. There were still differences between South and Islands (69.9 %), North (60.0 %) and Centre (62.4 %).

### The percentage of women in political life still contained

In 2021, the overall share of women in the European Parliament was 39% (in 2019 it was 41%). The Italian delegation of women was 39.5%, a value still far from that reached by countries like Finland and Sweden (both 57.1%), France, Portugal and Spain (respectively 49.4%, 47.6% and 44.1%). The share of women elected in the National Parliament was 35.4%<sup>9</sup>, above than the EU27 average (33.1%)<sup>10</sup>. In 2021, the proportion of women elected in Regional Councils increased to 22.3% (22% in 2020). This result is due to the increase of women in the Calabria Regional Council elected in 2021 (19.4%; 9.7% in 2020). The new target, according to the 2021-2026 National Strategy for Gender Equality, is to achieve a national average of 40% female representation in the regional councils.



<sup>8</sup> Values above 50% show a higher burden of domestic and care work for women, below the threshold the burden is greater for men.

<sup>9</sup> Data refer to 2018, the year of last political election of the House and Senate. Senators and deputies elected in foreign constituencies and senators for life are excluded.

<sup>10</sup> Data refer to 2021.

### Women's in boards of publicly traded companies has grown

At the end of 2021, Italy occupied the second position (38.8%), following France (44.3%), for female presence in the boards of directors (CEO) and in the senior management roles of the largest publicly traded companies (the average of the EU27 countries was 30.6%). The target set by 2021-2026 National Gender Equality Strategy is 45% (Figure 5.3).

In the Italian companies listed in the stock exchange, the female presence in the board of directors rose to 41.2%<sup>11</sup> (+2.4 percentage points compared to 2020). The percentage of women was still extremely low among CEOs (1.9%, within 16 companies, representing 2.4% of the total market value) and among chairmen or honorary presidents (3.5%, for 30 companies representing 20.7% of the overall capitalisation).

The share of women in management and middle positions remained stable (23%<sup>12</sup>), still close to the target of the 2021-2026 National Gender Equality Strategy (35%; Figure 5.4).







Source: European Institute for Gender Equality (EIGE)



Source: International Labour Organization (ILO)

<sup>11</sup> See CONSOB - Commission for Societies and Stock Exchange -. 2021. Report on corporate governance of listed Italian companies: Tab. 2.30. Rome: CONSOB.

<sup>12</sup> The indicator refers to the share of women in the total number of employees in management and middle positions (see <a href="https://www.ilo.org/).(https://www.ilo.org/shinyapps/bulkexplorer39/?lang=en&segment=indicator&id=SDG\_0552\_NOC\_RT\_A).">https://www.ilo.org/shinyapps/bulkexplorer39/?lang=en&segment=indicator&id=SDG\_0552\_NOC\_RT\_A).</a>

#### Gender equality in academia<sup>1</sup>

Gender inequalities originate before in family and in training and after in the workplace, where they become stronger.

Although the number of women enrolled in first and second level degree courses is steadily over 50%, the presence of women in academic education tends to decrease in post-graduate courses and continues to decline in the subsequent academic career. In 2020, the share of female was slightly higher than 48% for fellowship researchers, 46% in case of academic researchers, 40% for associate professors and about 25% for full professors. The Italian academia is characterised by trends well-known in gender equality studies, such as the progressive outflow of women from the academic career once they have completed their studies, the horizontal (women are under-represented in the STEM areas) and vertical segregation of careers, with few women reaching the top academic position of full professor. A similar trend can be observed in Europe<sup>2</sup>. In 2018, the percentage of women was 47% in Grade C and 26% in Grade A<sup>3</sup>.

In 2020 the share of female graduates in the STEM areas was 39% (Figure 1), in postgraduate studies the percentage of women who attained a PhD was 42,3%. These levels were similar to those observed in 2010. The gender gap increased going up in the academic career, reaching the value of around 57 percentage points at the rank of full professor (in 2020 at this level there were 21,4% women and 78,6% men). An opposite trend was observed in the non-STEM areas during the study period; the evolution of careers remained substantially the same compared to the STEM areas. In the position of researcher there was substantial gender equality (49,3% of women and 50,7% of men in 2020). Among associate professors, the gender gap rose up to 12 p.p. and reached 44 points among full professors (28,2% women and 71,8% men). These figures do not differ too much from those observed in the EU27 countries. In 2018 the percentage of women at the top level of the academic career in STEM areas was equal to 19%. Compared to 2010, the percentage of female full professors has increased (about +5 points in both areas)<sup>4</sup>.



Figure 1 - Proportion of women and men among students and academic staff, by STEM and non-STEM area. Years 2010 and 2020 (percentage values)

Source: MUR, Statistical Service (a) Data refer to 2012.

4 The Italian Department for Equal Opportunities has identified in the National Strategy for Gender Equality 2021-2026 the target of increasing the percentage of female full professors to 40%.



<sup>1</sup> This section was edited by Maria Teresa Morana e Simonetta Sagramora (MUR – Statistical Service) with contributions by Carmen Federica Conte.

<sup>2</sup> See European Commission, Directorate-General for Research and Innovation, She figures 2021: gender in research and innovation: statistics and indicators, Publications Office, 2021, <a href="https://data.europa.eu/doi/10.2777/06090">https://data.europa.eu/doi/10.2777/06090</a>.

<sup>3</sup> In the Italian academic system Grade A corresponds to Full Professor, Grade B to Associate Professor, Grade C to Academic Researcher and Grade D to Fellowship Researcher (*see OECD 2015 Frascati Manual*).

The Glass Ceiling Index (GCI), a measure adopted at international level to assess the relative chance for women to achieve a top academic position<sup>5</sup> (compared to men), has shown a decreasing trend in Italy over the last 20 years, both in non-STEM than STEM areas. In 2020 it reached the value of 1.5 and 1.6 respectively (Figure 2). These values do not differ much from the EU27 average (1.5 in 2018) and, even if with limited intensity, indicate a progressive improvement in the career prospects of women.





Source: MUR, Statistical Service

<sup>5</sup> The GCI compares the proportion of women in academia (full and associate professors, academic researchers) to the proportion of women in top academic positions (full professors). GCI scores higher than 1 indicate that women are under-represented in the position of full professor.


### **GOAL** 6

**ENSURE AVAILABILITY** AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL<sup>1</sup>

#### In brief

- In 2020, in the 109 Italian provincial or metropolitan capitals, 236 litres per inhabitant per day were provided for authorised uses in the public water supply network, about one litre less than in 2018.
- The share of water input into the network reaching end users was 63.8% in 2020 (0.9 percentage points higher than in 2018).
- More than one third of provincial or metropolitan capitals recorded an efficiency of urban water supply network lower than 55%; in a capital out of five efficiency exceeded 75%.
- In 2020, water rationing measures were adopted in 11 provincial or metropolitan capitals located in the South and Islands. There were more capitals involved than the previous year (+2), although days affected by emergency interventions to ensure water supply to citizens remained broadly unchanged.
- The share of households that don't trust to drink tap water remains high, albeit stable (28.5% in 2021).
- In 2021, the share of households complaining about irregularities in the water supply service at home was equal to 9.4%, slightly more compared to the previous year (8.9% in 2020).

The statistical measures released by Istat for Goal 6 are eighteen, and refer to eight UN-IAEG-SDGs indicators (Table 6.1).



VARIATIONS

								CONVER-
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	D	Compared to the previous year		AMONG REGIONS compared to 10 years before
6.1.1	Proportion of population using safely managed drinking water services							
Water sup	plied per capita (Istat, 2018, litres per inhabitant per day)	National context	215		(a)		(b)	$\Leftarrow \Rightarrow$
Household	is that don't trust to drink tap water (Istat, 2021, percentage values)	National context	28.5					=
Irregulariti	es in water supply (Istat, 2021, percentage values)	National context	9.4	$\bigcirc$				$\Leftarrow \Rightarrow$
Rationing municipali	of domestic water supply for part or all of the municipality (Istat, 2020, number of ties)	National context	11		(c)			
6.3.1	Proportion of domestic and industrial wastewater flow safely treated							
Sewage tre	eatment (Istat, 2015, percentage values)	Partial	59.6		(a)			=
Urban was	tewater safely treated with secondary or advanced treatment (Istat, 2018, N.)	National context	7,781		(a)		(b)	$\Leftarrow\Rightarrow$
Public sev	vage coverage (Istat, 2018, percentage values)	National context	87.8					
6.3.2	Proportion of bodies of water with good ambient water quality							
Coastal ba	thing waters (Istat, processing on Ministry of Health data, 2019, percentage values)	Partial	65.5	$\bigcirc$	(d)			⇒⇐
Percentag 2010-2015	e of rivers and lakes with good chemical quality and high or good ecological quality (Ispra, percentage values)	Partial	(*)					
Percentag quantitativ	e of groundwater water bodies with good quality of chemical status (SCAS) and good re status (SQUAS) (Ispra, 2010-2015, percentage values)	Partial	(*)					
Percentag percentag	e of transitional waters with good quality of ecological and chemical status (Ispra, 2010-2015, e values)	Partial	(*)					
Percentag 2015, perc	e of coastal marine waters with good quality of ecological and chemical status (Ispra, 2010- entage values)	Partial	(*)					
Percentag total water	e of water bodies that have achieved the objective of ecological quality (high or good) on the bodies of surface waters (rivers and lakes) (Ispra, 2010-2015, percentage values)	Proxy	(*)					
6.4.1	Change in water-use efficiency over time							
Urban wat	er supply network efficiency (Istat, 2018, percentage values)	Proxy	58.0		(a)		(b)	$\Leftarrow\Rightarrow$
6.4.2	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	3						
Freshwate	r withdrawal for public water supply (Istat, 2018, million m <sup>3</sup> )	Partial	9,219.8	$\bigcirc$	(a)		(b)	=
6.5.2	Proportion of transboundary basin area with an operational arrangement for water cooperation	n						
Proportior processing	of transboundary basin area with an operational arrangement for water cooperation (Istat g on Ministry of the Ecological Transition data, 2021, percentage values)	Identical	100					
6.6.1	Change in the extent of water-related ecosystems over time							
Wetlands	of International Importance (Ispra, 2018, hectares)	Identical	80,836		(d)			=
6.a.1 Amount of water-and sanitation-related official development assistance that is part of a government-coordinated spending plan								
Water-and Foreign Af	sanitation-related ODA that is part of a government-coordinated spending plan (Ministry of fairs and International Cooperation, 2020, million euro current prices)	Identical	23.68		(d)			
Legend		Note			<b>tes</b> Variation comp	s ariation compared to 2012		
	IMPROVEMENT	⇒⇐	CONVERGENCE (b) Variation (c) Variation		Variation comp	arec	to 2015 to 2014	
	STABILITY	=	STABILITY		(a) (*)   ww	variation comp Please refer to w.istat.it	the	able on
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGENC	E				
	NOT AVAILABLE / NOT SIGNIFICANT							

### Table 6.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

#### Slight drop in the volume of water supplied per capita

In 2020, in the 109 Italian provincial or metropolitan capitals, accounting for 33% of the national water supply, 1.5 billion cubic meters were supplied for authorised uses<sup>2</sup>, on a total of 2.4 billion cubic meters of water put into the network<sup>3</sup>. For the larger concentration of population, services and extra-residential uses, in the provincial or metropolitan capitals there is usually a supply of a volume of water per capita higher of 20 litres than the national average<sup>4</sup>. In 2020 the indicator was equal to 236 litres per inhabitant per day<sup>5</sup>, about 1 litre lower than 2018, with a slight improvement of the process of reduction occurring from about twenty years<sup>6</sup>.

The supply of water is strongly heterogeneous in the territory and closely connected to infrastructural and socio-economic characteristics of municipalities (Figure 6.1a). In the capital cities of the North, which supplied the maximum per capita volume of water (256 litres per inhabitant per day), there's a significant gap between the Nord-West (282 litres) and the Nord-East (220 litres)<sup>7</sup>. In the capitals of the central regions the amount supplied was lower (231 litres), followed by the South (221 litres) and finally by the Islands (194 litres). Water supplied per capita was higher than 300 litres per inhabitant per day in Milano, Isernia, Cosenza, L'Aquila, Pavia and Brescia. Conversely, Barletta, Arezzo, Agrigento, Andria and Caltanissetta recorded the lowest flow of water supplied, less than 150 litres per inhabitant.

Some municipalities with a relevant tourist vocation, such as Rimini and Venezia, recorded a significant reduction in the volumes of water supplied by about 15%; the reduction could be related – although in case specific estimates are missing – to the partial interruptions of business and services for mitigating the spread of COVID-19.

#### Efficiency in the provincial capitals supply networks improved slightly

The efficiency of the public water supply is of key importance in the current period, characterised by frequent phenomena of water scarcity and severity. In 2020, the degree of efficiency<sup>8</sup> in the public supply networks of the 109 provincial or metropolitan capitals stood at 63.8% (Figure 6.1b), a slight improvement compared to 2018 (62.7%). The total volume lost from the provincial capitals supply networks was equal to 0.9 billion cubic meters<sup>9</sup>.



<sup>2</sup> The volume of water supplied for authorised uses also includes public uses, such as street cleaning, water in schools and hospitals, watering of public green areas, fountains.

<sup>3</sup> See Istat. 2022. "Istat water statistics. Years 2019-2021". "Le statistiche dell'Istat sull'acqua. Anni 2019-2021". *Statistiche Report*. Rome: Istat. <u>https://www.istat.it/en/archivio/268982</u>.

<sup>4</sup> See Istat. 2021. "Principali fattori di pressioni sull'ambiente nelle città italiane". *Letture Statistiche - Territori.* Rome: Istat. <u>https://www.istat.it/it/archivio/252928</u>.

<sup>5</sup> The value refers to the provincial or metropolitan capitals and differs, therefore, from the figure in the Table 6.1 referred to the 2018 national value.

<sup>6</sup> The decrease in water supply should be read by taking into account several factors: more sustainable consumption behaviors; reduction in the number of non-domestic users, overall commercial activities and services on an urban scale, because of the economic crisis that the country has been experiencing for several years; variation of criteria used to estimate water balance components (especially methods of estimating unmeasured volumes).

<sup>7</sup> Above all, in the mountain areas, the spread of fountains seldom gives rise to a significant volume supplied and can explain the higher volumes per capita.

<sup>8</sup> Ratio between the volume supplied for authorised use and the water input into the network.

<sup>9</sup> Water losses are due to physiological reasons (network extension, number of connections and operating pressure), to breakages and ageing infrastructure (especially in some territories) and to administrative factors, due to water metering inaccuracies and unauthorised uses.

Efficiency was lower than 55% in more than one capital out of three. The most critical conditions, with efficiency lower than 35%, were recorded in Siracusa (32.4%), Belluno (31.9%), Latina (29.9%) and Chieti (28.3%). Conversely, a very favorable infrastructural condition, with an efficiency degree higher than 75%, was recorded in about one out of five capital cities. In seven cases efficiency was higher than 85%, namely, Macerata (90.2%), Pavia (88.2%), Como (87.8%), Biella (87.2%), Milano (86.5%), Livorno (86.5%) and Pordenone (85.7%).

Figure 6.1a - Water supplied in urban water supply Figure 6.1b - Urban water supply network efficiency, network, by provincial or metropolitan capital. Year 2020 (litres per inhabitant per day) Figure 6.1b - Urban water supply network efficiency, by provincial or metropolitan capital. Year 2020 (percentage values)



Source: Istat, Urban Water Census

Source: Istat, Urban Water Census

#### Water rationing in Southern provincial or metropolitan capitals is lasting

In 2020, 11 provincial or metropolitan capitals, located in the area of South and Islands, managed water rationing measures in the public water supply, by arranging the reduction or suspension of the water supply<sup>10</sup>. Compared to 2019, the number of capitals affected by rationing measures increased by 2 units, although days involved into rationing remained stable. Water rationing measures were adopted in almost all capitals of Sicilia (except for Messina and Siracusa), in two capitals of Calabria (Reggio di Calabria and Cosenza), in one capital of Abruzzo (Pescara) and Campania (Avellino). The most critical situations were in Agrigento and Trapani, where the reduction or suspension of the water supply occurred throughout the year, with restrictions involving all the residents.

<sup>10</sup> These measures are, in many cases, necessary to face the deep obsolescence of water infrastructure, the problems of water quality for human use and the increasingly frequent episodes of reduction in the flows that lead to an insufficient availability of water resources. These restrictions considerably exacerbate citizens' quality of life, the normal supply of water services, as well as the hygienic and sanitary conditions in the municipalities involved.

#### Almost a third of households do not trust to drink tap water

In 2021, the 28.5% of households declared not to trust to drink tap water, a similar percentage to that of the previous year. The lack of trust about tap water showed deep territorial disparities. Households that don't trust to drink tap water ranged from 16.8% in North-East to 57.1% in the Islands. At regional level, the highest percentages were located in Sicilia (59.9%), Sardegna (49.5%) and Calabria (38.2%); conversely, the lowest ones were in the Autonomous Provinces of Bolzano (0.8%) and Trento (2.4%) (Figure 6.2). Also Valle d'Aosta (8.6%) and Friuli-Venezia Giulia (11.6%) recorded very low percentages.

#### More than two million households complained about irregular water supply in their houses

In 2021, 9.4% of households complained about irregular water supply in their dwellings (8.9% in 2020). This problem affected the whole country, involving 2.4 million households, mostly in the South and Islands, where water supply irregularities were experienced by 1.5 million households (63.9% of the total), especially in Sicilia (29.0%) and Calabria (28.8%). In the North-West and North-East the values were low (respectively 3.1% and 3.5%), in the Centre less than one household out of ten reported irregularities in the water service.





Source: Istat, Survey on Aspects of daily life



#### Qualitative monitoring and drinking water management<sup>1</sup>

In Italy regional bodies (mainly Local Health Authority-ASL, and Regional Environmental Protection Agency-ARPA), to assess the degree of use of safe-managed water services, regularly monitor the quality of drinking water provided by public supply system and autonomous catchments. Monitoring results, periodically provided to European Commission, show an overall compliance of water services related to drinking water quality<sup>2</sup>.

This kind of retrospective assessment<sup>3</sup> has been accompanied in recent years by the revolutionary approach of Water Safety Plan (WSP<sup>4</sup>). Principal features related to this type of approach consist in an integrated site-specific risk assessment and a management for the protection of water resources, system and process control and the protection of consumer health, from the abstraction point to the tap, in order to ensure over time the absence of potential physical, biological and chemical hazards in the water available for use<sup>5</sup>.

The WSP approach, elaborated by World Health Organization since 2004<sup>6</sup>, was widespread in Italy, in regional scale pilot studies supported by Italian National Institute of Health<sup>7</sup>. The adopted risk-based approach allows also an additional flexibility of the system about several challenges as contaminants of emergent concern, currently not embedded into systematic monitoring activities, and/or hydropotable chains vulnerability due to direct and indirect impacts derived from climate change.

The transition to WSP involves water operators to manage relevant investments both in technology innovation, and in research and development. Currently available data show WSP adoption by about 30 water operators (2% of the total), involving about 8% of the population (4.7 million of inhabitants).

The country situation (Figure 1) is highly fragmented, and in several regions WSP activation is not planned yet (namely, Calabria, Marche, Molise, Autonomous Provinces of Trento and Bolzano, Sardegna, Valle d'Aosta).

WSP have been started mainly by water utility companies, conversely medium/little scale managements and local operators (municipalities or other local authorities) are still inactive. The completion of WSP will require a discussion on management issues.

Italy is in fact characterised by a high degree of management fragmentation (Figures 2a and 2b), especially in the areas where the reform of the integrated urban water management has not been fully implemented yet (in particular, Calabria, Molise, Autonomous Provinces of Trento and

<sup>1</sup> This section was edited by Mario Cerroni and Luca Lucentini (Italian National Institute of Health), with contributions by Tiziana Baldoni, Simona Ramberti and Stefano Tersigni.

<sup>2</sup> For the purposes of the analysis, only parameters that showed at least one non compliance shall be considered. In 2017-2019 years, a compliance level of drinking water quality parameters to normative limits were recorded from 97% up to 99%. The most of the non-compliances were due to high-concentration of geogenic elements in nationwide delimitated areas (Arsenic and Fluorine).

<sup>3</sup> Retrospective assessment is linked to chemical, microbiological and organoleptic drinking water quality monitoring at the point of use.

<sup>4</sup> PSA, in the Italian acronym.

<sup>5</sup> Nationwide transposition of Directive 2184/2020/EU, expected for December 2022, will allow the completion of normative framework introduced with the Decree of Health Ministry of 14th June 2017.

<sup>6</sup> See World Health Organization, *Guidelines for drinking-water quality*, <u>https://www.who.int/publications/i/</u> item/9789240045064.

<sup>7</sup> As a result of nationwide defined indications (See Italian National Institute of Health. 2021. "Linee guida per la valutazione e gestione del rischio nella filiera delle acque destinate al consumo umano secondo il modello dei Water Safety Plan". Rapporti ISTISAN 14/21. <u>https://www.iss.it/documents/20126/45616/14\_21\_web.pdf</u> and following the structuring of a training programme for authorities, local bodies and water operators in order to provide criteria, methods and procedures necessary to Water Safety Plan implementation in drinking water management systems.



Figure 1 - Provinces with municipalities or inter-municipal areas for which a WSP is being approved (in red). Year 2022

Bolzano, Sicilia and Valle d'Aosta). These issues may decelerate fulfillment of wide geographical coverage by WSP<sup>8</sup>.

In 2018 water withdrawal by public water supply was managed by 1,714 operators: 340 water utility companies withdrew 90.2% of the total volume (about 8.3 billion cubic metres) and 1,374 local operators (municipalities or other local authorities) provided for the withdrawal of the remaining 9.8% of the total volume (about 906 million cubic metres).

In 2018 public water supply networks, the final section of hydropotable chain, were managed by 2,088 water operators: 1,777 municipalities or other local authorities and 311 water utilities. Water utility companies operated in about four out of five municipalities in which the service was active, in one out of five the management was in charge of municipalities or other local authorities, and in the remaining sporadic cases there was a mixed management. In quantitative terms, the water management was strongly in charge to water utilities, accounting on the 87.1% of the volume, besides the remaining 12.9% was managed by municipalities or other local authorities.

Forecast for 2020 estimate a decrease by about 100 units of the number of operators involved in drinking water withdrawal and supply, with a significant reduction in the shares managed by local authorities, especially in the territories where the transition to integrated water service management has been recently intensified.



Source: Italian National Institute of Health, processing on Water Safety Plan data

<sup>8</sup> In this context, an important issue consists of the inclusion of Water Safety Plan among technical relevant aspects for the evaluation of public water supply service conducted by Italian Regulatory Authority for Energy, Networks and Environment (ARERA).

#### 2022 SDGs Report. Statistical information for 2030 Agenda in Italy



Source: Istat, Urban water census

Source: Istat, Urban water census



GOAL 7

**ENSURE ACCESS** TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL<sup>1</sup>

#### In brief

- Italy exceeded all the national and international targets for 2020 related to Renewable Energy Sources (RES).
- In 2020, the total contribution from RES to gross final energy consumption reached 20.4% (+3.4 percentage points compared to the European and national targets), marking an improvement of 7.4 p.p. in the last ten years. Between 2012 and 2020, net installed renewable energy generation capacity per capita increased by 20%.
- Although the growth of renewable sources has contributed to reduce our country's energy import dependency, the share of net imports on Italy's gross energy availability is one of the highest in the EU27.
- In 2020, trends in final energy consumption contracted by 8.9%, also reflecting the effects of lockdown measures. The fall was less marked than that of Spain, but above the EU27 average level and France and Germany.
- Interrupting the series of progressive reductions that had characterised the last ten years, 2020 marked a slight increase in total energy intensity, fueled by the industrial sector (+6.3%), while services confirmed the values of the previous year.
- In 2021, the incidence of population who cannot afford to adequately heat the house (8.1%) was broadly stable compared to the previous year.
- The number of electric and hybrid cars has grown steadily and, in 2021, it reached 36.4% among newly registered cars.

The statistical measures released by Istat for Goal 7 are fourteen and refer to five UN-IAEG-SDGs indicators (Table 7.1).



<sup>1</sup> This section was edited by Paola Ungaro.

### Table 7.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

				VAR	IATIONS	CONVERGENCE	
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	AMONG REGIONS compared to 10 years before	
7.1.1	Proportion of population with access to electricity						
Household percentage	is very or fairly satisfied with the continuity of the service of electricity supply (Istat, 2021, e values)	Proxy	93.9	$\bigcirc$		$\Rightarrow \Leftarrow$	
Inability to	o keep home adequately warm (Istat, 2021, percentage values)	National context	8.3				
7.1.2	Proportion of population with primary reliance on clean fuels and technology						
Share of n	ew registered electric or hybrid passenger cars (ACI, 2021, percentage values)	National context	36.4				
Electric or	hybrid passenger cars (ACI, 2021, N.)	National context	1,149,528		(a)		
7.2.1	Renewable energy share in the total final energy consumption						
Renewable Energetici,	energy share in the gross final energy consumption (GSE S.p.A Gestore dei Servizi 2020, percentage values)	Proxy	20.4			$\Leftarrow\Rightarrow$	
Renewable S.p.A Ge	e energy share (transport sector excluded) in the gross final energy consumption (GSE store dei Servizi Energetici, 2020, percentage values)	National context	19.1		(b)	$\Leftrightarrow \Rightarrow$	
Renewable Gestore de	e energy share in thermal sector (in the gross final energy consumption) (GSE S.p.A il Servizi Energetici, 2020, percentage values)	Partial	19.9			⇒⇐	
Electricity values)	from renewable sources in the gross electricity consumption (Terna Spa, 2020, percentage	Partial	37.4			⇒⇐	
Renewable Gestore de	e energy share in transport sector (in the gross final energy consumption) (GSE S.p.A el Servizi Energetici, 2020, percentage values)	Partial	10.7			$\Leftrightarrow \Rightarrow$	
7.3.1	Energy intensity measured in terms of primary energy and GDP						
Energy intensity (Enea processing on Eurostat and Istat data, 2020, tonnes of oil equivalent (Toe) per million euro)		Identical	91.56			⇒⇐	
Energy inte equivalent	ensity of industry sector (Enea processing on Eurostat and Istat data, 2020, tonnes of oil (Toe) per million euro)	Partial	97.91			$\Leftrightarrow$	
Energy interest interest equivalent	ensity of services sector (Enea processing on Eurostat and Istat data, 2019, tonnes of oil (Toe) per million euro)	Partial	15.76	$\bigcirc$			
Final energ (KGOE))	gy consumption in households per capita (Eurostat, 2020, kilogram of oil equivalent	National context	516				
7.b.1	Installed renewable energy generating capacity in developing countries (in Watts per capita	)					
Net installe Energy Ag	ed renewable energy generating capacity (Istat processing on International Renewable ency data, 2021, watt per capita)	Identical	930.4		(b)		
					Madaa		
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGEN	(a) Variation compared to 201 (b) Variation compared to 2012			
	STABILITY	=	STABILITY				
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGENCI	E			
	NOT AVAILABLE / NOT SIGNIFICANT						

#### Italy exceeds all European renewable energy targets for 2020

In 2020, after the expiration of the targets of the European Union's Climate-Energy Package, all the Member States, with the exception of France, met their national target for the overall share of energy from renewable sources (electricity, heat and transport) in gross final energy consumption  $(GFC)^2$ . The four largest European economies – which together accounted for 56% of European GFC – were below the EU27 average (22.1%; Figure 7.1). Within this grouping, Italy recorded a value (20.4%) below Spain (21.2%), but higher than Germany and France (19.3% and 19.1% respectively).





Source: Eurostat

(a) The figure differs from that used by Istat-SDGs system, since it is calculated in accordance with the criteria set by Directive 2009/28, for the purposes of monitoring the European renewable energy targets by 2020.

Among the four countries concerned, Italy was the first to meet the national target for the overall share of renewables (in 2014) and, among the 27 Member States, the sixth, together with Lithuania and Finland. The trend in the indicator was also affected by the fall in final energy consumption, which has been particularly significant in Italy, due to the progressive growth in energy efficiency, the economic crisis, first, and the reduction in production rates during the pandemic emergency, after. Nevertheless, between 2012 and 2020, net installed renewable energy generating capacity grew from 777.3 to 930.4 watts per capita (+20%), increasing further in the following year (962.0 watts per capita).

In 2020, Italy was the first country in the ranking of transport sector among the four large EU countries, above the EU27 average in the electricity sector and slightly below in the thermal



<sup>2</sup> Ireland, Slovakia, the Netherlands, Belgium, Luxembourg and Malta have met their energy targets by using the statistical transfers of renewable energy, a Union cooperation mechanism which provides for the possibility of (accounting) purchasing shares of renewable energy from surplus countries without actual transfer (see Renewable Energy Directives 2009/28/EC and (EU) 2018/2001; See Gestore dei Servizi Energetici – GSE. 2022. Fonti rinnovabili in Italia e in Europa - 2020. Roma: GSE).



Figure 7.2 - Share of renewable energy in gross final energy consumption, by sector. Years 2010-2020 (fixed base index numbers, 2010=100)

Source: Eurostat

sector. Italy's positive performance was due to a higher rate of growth in renewable energy sources in the transport and electricity sectors than the EU27 average level (Figure 7.2).

The overall share of GFC met by RES increased in Italy by 2.2 percentage points in 2020 and, thanks to the extensive incentives for renewable energy defined by the government, by 7.4 over the last decade, placing always above the development trajectory defined by the 2010 National Action Plan (NAP) for Renewable Energy<sup>3</sup>.

The development of renewable sources has contributed to the partial reduction of energy import dependency. Although still at high levels, the share of net imports of energy products in gross energy availability decreased from 82.6% to 73.5% in the period 2010-2020, compared with an increase in the EU from 55.8% to  $57.5\%^4$ .

In 2020, the South was the geographical area with the highest overall share of renewables on GFC (27.1%) compared to 20.9% for North-East, 19.6% for Islands, 18.1% for North-West and 17.5% for the Centre. Among regions, the most virtuous were Valle d'Aosta, Autonomous Provinces of Trento and Bolzano, Basilicata, Calabria and Molise.

<sup>3</sup> The NAP implements the national target set at European level for our country with reference to overall RES energy consumption (17%) and transport sector (10%) and identifies sectoral targets for 2020 for the electricity sector (26.4%) and for the thermal sector (17.1%), indicating the annual trajectories needed to achieve the targets.

<sup>4</sup> In 2020, Italy had the highest rate of energy import dependency among the four largest economies (44.5% for France, 63.7% for Germany and 67.9% for Spain) and one of the highest in Europe (after Lithuania, Belgium, Greece, Luxembourg, Cyprus and Malta). The contribution of renewables to reducing foreign dependency has been partly mitigated by the progressive re-composition of the national energy mix in favour of natural gas (from 37.8% of gross energy availability in 2010 to 40.5% in 2020), whose share of net imports increased from 90.5% in 2010 to 92.8% in 2020. The significant fall in the rate of energy import dependency in 2020 (-4.0 p.p.) was due mainly to the reduction in fossil fuel consumption (see <a href="http://ec.europa.eu/eurostat">http://ec.europa.eu/eurostat</a>).

In the electricity sector, the share of consumption covered by renewable sources in total gross domestic consumption, which had increased by 15.2 p.p. in the period 2010-2020, increased further in 2020 (+2.5 points compared to the previous year), reaching 37.4%, significantly higher than NAP development trajectory.

In transport sector (biofuels and the renewable share of electricity consumed in transport), the share of consumption met by renewable sources more than doubled between 2010 and 2020, from 4.9% to 10.7% (+1.7 percentage points in the last year). The binding target of 10% set by European legislation for 2020 and by the 2010 NAP has been exceeded.

The heating and cooling sector, even if always above the NAP development trajectory, has shown a slower trend, from a share of RES of 15.6% in 2010 to 19.9% in 2020, with an increase in the last year of only 0.2 percentage points.

Having achieved the European RES targets, pending the important developments that will result from the implementation of the new EU climate package Fit for 55<sup>5</sup>, Italy is moving towards the course set out in the 2020 Integrated National Energy and Climate Plan (INECP), which raises the 2030 target for renewables to 30%. The commitment requires a further boost to RES production, but is feasible in accordance with forecasts of growth rates<sup>6</sup>.

#### **Energy intensity slightly increased**

In Italy, between 2010 and 2020, final energy consumption decreased by 16.2%, with a higher intensity than in the EU27 average level (-9%) and Germany (-7.8%,), France (-12.4%) and Spain (-15.4%)<sup>7</sup>. In 2020, lockdown measures contributed to a strong reduction in consumption, again to a larger extent in Italy (-8.9%) than the EU average (-5.6%)<sup>8</sup>.

In 2020, Italy ranked fifth in the European energy intensity ranking – calculated as the ratio of gross available energy to gross domestic product (GDP) – following Ireland, Denmark, Romania and Luxembourg<sup>9</sup>. Although with a weaker dynamic than in the whole EU27 and in main EU countries<sup>10</sup>, Italy's energy intensity has fallen by 12.8% over the last decade (Figure 7.3). Even considering the combined effect on trend in the indicator of GDP and energy demand dynamics, Italy's positive trend is confirmed by the ODEX index, which measures progress in the different sectors, adjusted for structural and cyclical effects and other factors not related to efficiency. Assuming the economy as a whole index of 100 in 2010, Italy



<sup>&</sup>lt;sup>5</sup> Transposing the Green Deal targets for reducing greenhouse gas emissions by 55% by 2030, Fit for 55 proposes a comprehensive revision of the EU's energy, climate and transport legislation and, more specifically, a proposal for a revision of the Renewable Energy Directive raising the EU target from the current 32% to at least 40% by 2030.

<sup>6</sup> See Gestore dei Servizi Energetici - GSE. 2022. *Energia da fonti rinnovabili in Italia - Rapporto Statistico 2020*. Roma: GSE.

<sup>7</sup> See http://ec.europa.eu/eurostat.

<sup>8</sup> Final energy consumption – down in all industries except agriculture and forestry (+1.5%) – recorded the largest contraction in transport (-19.2% respect to -9.0% in commercial and public services, -4.3% in industry, -3.4% in fishing and -1.5% in households) and, among the main energy sources, for oil and petroleum products (-17.2% vs. -5.7% for electricity, -3.7% for natural gas and -2.3% for renewables and bioliquids), due to mobility constraints imposed by government measures.

<sup>9</sup> See <u>http://ec.europa.eu/eurostat</u>.

<sup>10</sup> Between 2010 and 2020, the average annual growth rate of change in energy intensity was -1.4% for Italy and Spain, below Germany (-2.8%), France (-2.3%) and EU27 (-2.2%).

reached a value of 86.2 in 2019<sup>11</sup>. The reduction in energy intensity was largely due to the effect of the efficiency measures, which, between 2011 and 2020, resulted in savings of 12.73 MTOE/year, equal to 82% of the 2020 target laid down in the 2017 National Energy Efficiency Action Plan<sup>12</sup>.

In 2020, Italy's energy intensity increased slightly to 91.6 tonnes of oil equivalent per million euro (TOE/M€), compared to 91.4 tonnes in 2019. The increase should be attributed to the industrial sector (+6.3%), which, however, ended the decade with a negative balance of 10.5 TOE/M€ (-9.7%). The services sector, which has significantly lower energy intensity standards than industry (15.8 vs. 97.9 TOE/M€ in 2020), decreased (-0.5%), showing an overall increase of 3.5% over the last decade, equivalent to an average annual growth rate of +0.3%.

### Figure 7.3 - Energy intensity by sector and final energy consumption in households per capita. Years 2010-2020 (fixed base index numbers, 2010=100)



Source: Eurostat; ENEA, elaborazione su dati Eurostat e Istat

The residential sector showed a decline in final consumption per capita of 1% over the past year and 13.6% over the last decade, reaching 516 kilograms of oil equivalent per inhabitant, below EU27 (555) and compared to Germany (697) and France (573), but well above Spain (307)<sup>13.</sup>

<sup>11</sup> See http://www.odyssee-mure.eu/.

<sup>12</sup> Italy largely exceeded 2020 targets in the residential sector (which achieved the target by more than 170%), but not in commercial and public services (67%), industry (65%) and transport (42%) sectors (See Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile - ENEA. 2021. Rapporto Annuale Efficienza energetica 2021. Roma: ENEA).

<sup>13</sup> The discontinuity over time of household consumption, as well as cross-country differentials, is influenced by seasonality in the climate, which has an impact on heat consumption.

## The decrease in the percentage of the population unable to keep home adequately warm slowed down

In 2021, in Italy, 8.1 out of 100 people reported difficulties in keeping their home adequately warm, only marginally lower than in 2020 (8.3%) and indicating a slowdown in the improvement process started in 2013. Over the past year, the proportion of people who complain of difficulties in heating their home was higher among foreign citizens (16.9% vs. 7.5% for Italians) and in the Southern area (13.1% in the South and 10.0% in the Islands, compared with 8.5% in the North-West, 2.7% in the North-East and 6.3% in the Centre).

Looking at 2020 for comparison with other European countries, Italy was close to the EU average  $(7.4\%)^{14}$ . In all EU countries, the proportion of people experiencing difficulties was higher for the most economically vulnerable segments of the population, with varying degrees of intensity depending on the country. In Italy, the incidence of people who cannot afford to heat their homes among people at risk of poverty<sup>15</sup> was 2.8 times higher than the rest of the population (17.2% vs. 6.1%), compared with 3.3 times in the EU27 (17.8% vs. 5.4%). The ratio in the two sub-populations was particularly large in the Netherlands, Denmark, Croatia, Hungary and Slovenia (between 5.9 and 5.2).

#### Strong growth of hybrid and electric cars, in line with ETP targets

The Ecological Transition Plan (ETP) sets out two targets for the diffusion of electric vehicles: to reach 6 million cars with plug-in or hybrid plug-in electric drive by 2030 and to increase this segment to 25% of the market. At the end of 2021, the number of electric and hybrid cars circulating in Italy was around 1 million and 150,000 (2.9% of the total number of cars in circulation). Compared to 2020, the overall number of electric and hybrid cars almost doubled (+92.9%), accelerating sharply compared to 2014-2019 that recorded a yearly increase of around 40%, and compared to the intensive growth in 2020 (+66.8%). Over the past year, the increase was more pronounced for electric cars, more than doubled (from over 53,000 to over 118,000), since hybrid cars increased by 90%.

In terms of market share, the target set for 2030 is already broadly achieved, since in 2021 electric and hybrid cars (although not all plug-in) accounted for 36.4% of new registrations, compared to 16.6% of the previous year.



14 See <u>http://ec.europa.eu/eurostat</u>.

<sup>15</sup> People living in households with an equivalised disposable income below 60% of median income.

#### "Putting energy efficiency first": measures for energy efficiency in the context of Italy<sup>1</sup>

On 14 July 2021, the European Commission presented the Fit for 55 package<sup>2</sup>, a comprehensive set of proposals aimed at reducing greenhouse gas emissions by 55% by 2030 compared to 1990 values. With this package, the Commission aimed at implementing the targets previously established by the European Climate Law<sup>3</sup>. The decision to set more ambitious emission and energy targets within a shorter time frame than the previous plans was motivated by the need to further stimulate the action of the Member States, which so far has been considered unsuitable for achieving climate neutrality by 2050, basing on the assessment of the National Energy and Climate Plans. One of the major elements of the Fit for 55 package was a proposal for a revision of the Energy Efficiency Directive, which set new consumption targets by 2030<sup>4</sup>: 1,023 Mtoe of primary energy and 787 Mtoe of final energy.

While waiting for new regulatory developments at the international level, in Italy, the 2030 targets set by the 2019 Integrated National Energy and Climate Plan remain in force. The 2019 INECP includes a target of final energy consumption reduction through active policies of 9.27 Mtoe/year by 2030. A reduction of 5.7 Mtoe is planned in the civil sector (3.3 Mtoe in the residential sector and 2.4 Mtoe in the tertiary sector), to be achieved through energy upgrading of the envelope of existing buildings and through the installation of heat pumps. The planned contribution to the transport sector is also significant (2.6 Mtoe), to be implemented through interventions in support of smart mobility and modal shift of freight (road-rail). The industrial sector is expected to reduce its consumption by about 1.0 Mtoe.

In 2021, the overall final energy saving (equal to 1.31 Mtoe) was achieved by multiple efficiency measures among those to monitor the Energy Efficiency Directive. According to a preliminary estimate, the tax incentives of the "Superbonus", "Ecobonus", "Bonus Casa" and "Bonus Facciata" generated the largest share of energy savings (Figure 1): 0.569 Mtoe, equal to almost half of the total energy saving (43.5%). Among these, in addition to the sharp increase in the number of projects encouraged by the "Ecobonus", a significant contribution to efficiency was determined by the implementation of the "Superbonus 110%". As of 31 December 2021, the total amount of investments eligible for tax refund through the Superbonus amounted to 16.2 billion euro, 11.2 of which are related to interventions already completed. The resulting energy saving is estimated to be around 0.26 Mtoe<sup>5</sup>.

Two measures have been implemented to support sustainable mobility: the "Marebonus", an incentive aimed at promoting combined road-sea transport of goods through the creation of new maritime services and the improvement of the existing ones; the "Ferrobonus", a measure to support intermodal rail transport. The overall saving achieved by the two measures is equal to 0.419 Mtoe, approximately one third of the total. Finally, the White Certificates mechanism generated savings of 0.124 Mtoe, i.e. about 10% of the total, while the "Conto Termico" gave rise to a saving of 0.079 Mtoe (6.0%).

<sup>1</sup> This section was edited by Alessandro Federici and Alessandro Fiorini (ENEA) with contributions by Paola Ungaro.

<sup>2</sup> See European Commission. 2021. Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality Brusells: 14.07.2021, COM (2021) 550 final. <u>https://ec.europa.eu/info/sites/default/files/chapeau\_communication.pdf</u>.

<sup>3</sup> See Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law'). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1119

<sup>4</sup> The new target corresponds to a 9% increase in energy efficiency compared to the projections of the 2020 reference scenario, raising the overall reduction in primary energy consumption from 32.5% to 39% compared to 1990 values. The cut in final energy consumption is around 36%, implying a commitment for Member States to double (from the current -0.8% to -1.5%) the percentage of new annual mandatory savings, between 2024 and 2030. See *Proposal for a Directive of the European Parliament and of the Council on energy efficiency (recast)*. Brusells,14.07.2021, COM(2021) 558 final. <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0558">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0558</a>.

<sup>5</sup> See ENEA, https://www.efficienzaenergetica.enea.it/detrazioni-fiscali/superbonus/risultati-superbonus.html.

The "Superbonus 110%", established in 2020 by the "Decreto Rilancio" (L. 34/2020), represents a novelty in the field of tax refunds for the structural and energy upgrading of buildings. The data available in May 2022 (Figure 2) show that from the introduction of the measure (November 2020), the largest number of interventions has been carried out or is ongoing in Lombardia (26,432 projects), Veneto (21,555) and Lazio (15,504). The mobilised investments, which total around 31 billion euro, follow the distribution of the projects: Lombardia (5.1 billion euro), Veneto (3 billion) and Lazio (2.9 billion).



Figure 1 - Final energy savings achieved in 2021 (a), by measure. Year 2021 (percentage values)

Source: ENEA, GSE, MITE (a) Preliminary estimates.









GOAL 8

**PROMOTE SUSTAINED, INCLUSIVE** AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL<sup>1</sup>

#### In brief

- 2021 was marked by a strong recovery in economic activity, following the recession of the previous year that was due to the effects of the pandemic emergency. Annual growth of GDP in volume, GDP per inhabitant and GDP per employed person was significant (+6.6%, +7.2% and +6.0% respectively).
- The economic recovery was driven mainly by the construction sector (with an increase in value added per person employed by 14.5%) and by industry in the strict sense (+11.8%), along with some services sectors, such as accommodation and food services (+23.6%) and transport and storage (+12.7%), which were significantly affected by the pandemic emergency.
- In 2021, the recovery in hours worked was associated with a slight increase in the employment rate, that reached 62.7% for 20-64 year-olds (+0.8 percentage points), with higher benefits for those groups that had suffered most from the effect of the pandemic in 2020 (women, youth, foreigners and residents in southern regions).
- The unemployment rate increased marginally (9.5%; +0.2 p.p.), also reflecting the revitalising of job-search activities and the consequent reduction of inactivity. The unemployment rate remained well above European levels.
- In 2021, the growth of the share of employed people working from home slowed to 14.8%. The increase (+1 percentage point compared to 2020) was due exclusively to the occasional component of smart working.
- In 2020, government spending in employment programmes and social protection from unemployment increased sharply, reaching 2.8% of GDP and close to 5% of total national budgets. This reflected the weight of the economic policy measures approved to mitigate the effect of the COVID-19 pandemic.
- In 2020, the rate of fatal occupational injuries and permanent disabilities fell to 9.0 per 10,000 employees.

The statistical measures released by Istat for Goal 8 are twenty-eight and refer to twelve UN-IAEG-SDGs indicators (Table 8.1).



<sup>1</sup> This section was edited by Paola Ungaro with contributions by Gaetano Proto and Chiara Rossi.

				VARIATIONS				
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Cor to pre	npared o the ovious rear	CONVERGEN CE AMONG REGIONS compared to 10 years before	
8.1.1	Annual growth rate of real GDP per capita							
Annual gro	owth rate of real GDP per capita (Istat, 2021, percentage values)	Identical	7.2					
8.2.1	Annual growth rate of real GDP per employed person							
Annual gro	owth rate of real GDP per capita (Istat, 2021, percentage values)	Identical	6.0					
Annual gro	owth rate of value added in volume per employed person (Istat, 2021, percentage values)	National	5.9					
Annual or	owth rate of real value added per worked hour (Istat. 2021, percentage values)	context National	-14					
8.3.1	Proportion of informal employment in total employment, by sector and sex	context						
Sharo of o	mplayed parson not in roquiar occupation (letat 2019, parsontage values)	Browy	12.6				$\rightarrow \leftarrow$	
0 4 2	Demostic material consumption domostic material consumption per capita and domostic ma	torial consumptio	n por GDR					
0.4.2	pomestic material consumption, domestic material consumption per capita, and domestic ma	Identical	77					
Domestic	material consumption per capita (Istat, 2020, tonne per innabitant)	Identical	1.1				$\leftarrow \rightarrow$	
Domestic	material consumption per GDP (Istat, 2020, tonne per 1,000 euro)	Identical	0.29				$\Rightarrow \in$	
Domestic	material consumption (Istat, 2020, million tonnes)	Identical	458.7				=	
8.5.1	Average hourly earnings of employees, by sex, age, occupation and persons with disabilities							
Hourly ear	nings (Istat, 2018, euro)	Identical	15.6		(a) (		(b)	
Gender pa	y gap (Eurostat, 2020, percentage values)	National context	4.2					
Share of e	mployees with below 2/3 of median hourly earnings (Istat, 2020, percentage values)	National context	10.1				$\Rightarrow \leftarrow$	
8.5.2	Unemployment rate, by sex, age and person with disabilities					_		
Unemploy	ment rate (Istat, 2021, percentage values)	Identical	9.5				⇒⇐	
Non-partic	ipation rate (Istat. 2021, percentage values)	National	19.4		(c)		$\rightarrow$ $\leftarrow$	
non parae		context	10.4		(0)		$\rightarrow \leftarrow$	
Employme	nt rate (20-64) (Istat, 2021, percentage values)	context	62.7				$\Rightarrow \leftarrow$	
Involuntar	y part time (Istat, 2021, percentage values)	context	11.3		(c) (		$\Leftrightarrow \Rightarrow$	
Share of e	mployed persons with temporary jobs since at least 5 years (Istat, 2021, percentage values)	National context	17.5		(c)		$\Rightarrow \leftarrow$	
Employed	persons working from home (Istat, 2021, percentage values)	National context	14.8		(c)		$\Leftrightarrow \Rightarrow$	
8.6.1	Proportion of youth (aged 15-24 years) not in education, employment or training							
People not	t in education, employment, or training (NEET) (aged 15-24) (Istat, 2021, percentage values)	Identical	19.8		(c)		$\Rightarrow \Leftarrow$	
People not	t in education, employment, or training (NEET) (aged 15-29) (Istat, 2021, percentage values)	National	23.1	Õ	(c)		$\Rightarrow \leftarrow$	
8.8.1	Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status	Context		<u> </u>				
Incidence	rate of fatal occupational injuries or injuries leading to permanent disability (INAIL, 2020, per	Proxy	9.0		(		⇒∈	
10,000 em	ployed)							
Touriom d		<b>.</b>						
rounsin u	nect GDP as a proportion of total GDP (Istat, 2015, percentage values)	National	6.2					
Number of	jobs in tourism industries as a proportion of total jobs (Istat, 2019, percentage values)	context	15.5					
8.10.1	(a) Number of commercial bank branches per 100,000 adults and (b) number of automated tell	er machines (ATM	s) per 100,0	00 adults				
Number of inhabitants	<sup>;</sup> branches per 100,000 inhabitants (Istat processing on Bank of Italy data, 2021, per 100,000 s)	Proxy	36.5		(d)		=	
Number of inhabitants	ATM per 100,000 inhabitants (Istat processing on Bank of Italy data, 2021, per 100,000 s)	Proxy	63.1		(d)		$\Rightarrow \leftarrow$	
Number of	institutions per 100.000 inhabitants (Istat processing on Bank of Italy data, 2021, per 100,000	Proxy	0.8		(d)		$\Leftrightarrow \Rightarrow$	
8.a.1	Aid for Trade commitments and disbursements			-				
Aid for tra	de (Ministry of Foreign Affairs and International Cooperation, 2020, million euro current	Identical	(*)					
prices)	Existence of a developed and operationalized national etratomy for youth opplayment as a di	stinct stratogy as	s part of c	ational omet	wment of	raterry		
5.D.1 Existence or a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy Total government spending in employment programmes and social protection from unemployment as a								
proportion	of the national budgets (Istat, 2020, percentage values)	Proxy	4.889					
proportion	of GDP (Istat, 2020, percentage values)	Proxy	2.792					
Legend	IMPROVEMENT	$\rightarrow \leftarrow$	CONVERG	ENCE	Notes (a) Varia	ation comp	pared to 2010	
		->=	CTADILITY		(b) Varia	ation comp	pared to 2014	
		_	STABILITY		(c) Varia	tion comp	ared to 2018	
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGEN	10E	(*) Pleas	e refer to	the table on	
	NOT AVAILABLE / NOT SIGNIFICANT				www.ista	ıt.it		

### Table 8.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

#### Strong recovery in economic activity in 2021

In 2021, the recovery in economic activity was widespread among European countries. Gross domestic product grew by 5.4% for both EU27 and the euro area, with a higher intensity in France and Italy (+6.8% and +6.6% respectively) than in Spain (+5.1%) and Germany (+2.9%). However, GDP of the four largest European countries were still below the levels recorded in 2019, by 6.2% in Spain, 3.0% in Italy, 1.8% in Germany and 1.5% in France<sup>2</sup>.

According to preliminary territorial estimates, in Italy the recovery of GDP was more pronounced in the North (+7.4% in the North-West and +7.0% in the North-East), which was more affected by the fall of the previous year, and below the average in the Centre (+6.0%) and in the South and Islands (+5.8%)<sup>3</sup>.

GDP per capita also recorded an exceptional growth in 2021 (+7.2%), higher than GDP per employed person (+6.0%). Labour productivity growth, equal to 5.9% measured in terms of value added per person employed<sup>4</sup>, affected almost the whole Italian economy<sup>5</sup>, with higher intensity in industry in the strict sense (+11.8%) and construction (+14.5%). In services, which recorded an average increase of 4.2%, accommodation and food services (+23.6%) and transport and storage (+12.7%) were characterised by the strongest dynamics.

#### Employment recovery restored pre-crisis levels of gender and territorial gaps

In 2021, the production recovery was coupled by an employment increase. After the previous year contraction, the employment rate of 20-64 year-olds increased by 0.8 percentage points to 62.7%, still below 2019 (63.5%). The limited recovery in the employment rate was due, partly, to the measures to support permanent employment put in place during the first year of the pandemic, which, both in the downturn and in the recovery phase, had a larger impact on the number of hours worked than on the number of people employed.

In Italy, in 2021, the increase in the employment rate was lower than that recorded on average in the EU27 (+1.4 percentage points), which also showed a less pronounced decline in 2020 (-1.0 compared to -1.6 p.p.). Over the last two years, Italy's distance from the European Union therefore increased (the average EU27 employment rate was 73.1%), reaching the largest gap over the last decade (-10.4 p.p.; Figure 8.1)<sup>6</sup>.



<sup>2</sup> See <u>http://ec.europa.eu/eurostat</u>.

<sup>3</sup> See Istituto Nazionale di Statistica - Istat. 2022. "Stima preliminare del Pil e dell'occupazione territoriale. Anno 2021". *Statistiche Report*. Roma, Italia: Istat. <u>https://www.istat.it/it/archivio/272553</u>.

<sup>4</sup> If measured as value added per hour worked, labour productivity recorded a decrease of 1.4%, because the growth of labour input was characterised by a larger increase in the number of hours worked than in persons employed.

<sup>5</sup> The exceptions were agriculture, forestry and fishing (-0.7%) and, in the service sector, information and communication (-0.9%), arts, entertainment and recreation, repair of household goods and other services (-0.5%) and financial and insurance activities (-0.3%).

<sup>6</sup> In the euro area there are similar trends; the decline in the employment rate in 2020 (-1.3 percentage points) was followed by an increase of 1.3 p.p. in 2021, enlarging the gap with Italy to -9.8 p.p..



Figure 8.1 - Employment rate (20-64 years old). Years 2011-2021 (percentage values)

Source: Istat, Labour Force Survey, Eurostat

Partly due to a larger participation in self-employment and fixed-term employment and in industries largely affected by the closure of activities, the categories that benefited more from the recovery in employment were the same which had been mostly affected by the consequences of the pandemic. The employment rate of women, which in 2020 had fallen more than that of men (respectively -1.8 percentage points and -1.5 p.p.), recovered 1.1 p.p. (+0.6 p.p. for men). The gender gap, equal to 19.2 percentage points in 2021, narrowed (Figure 8.1), but remained at levels well above that observed for EU27 (11.1 p.p.). Among the 20-24 year-olds, the share of employed persons, which in 2020 had decreased by 2.9 points, increased by 1.7 p.p. in 2021 (reaching 31.5%, which nevertheless represents less than half of the national average). In the 25-34 age class, the increase of 2.4 p.p. in 2021 almost offset the contraction in the previous year (-2.5 p.p.). The employment rate of the foreign residents, despite an increase higher than Italians (+1.4 vs +0.8 p.p.), remained below Italians for the second year in a row (61.4 vs 62.9), with still higher differences for non-EU citizens (60.3%). The dynamics of employment in the last two years have led to a slight reduction in territorial imbalances. The northern and central areas recorded higher losses in the employment rate in 2020 (-2.1 percentage points in both North-West and North-East and -1.6 p.p. in the Centre) and more moderate improvements in 2021 (+0.8 p.p., +0.5 p.p. and +0.6 p.p.) compared to South and Islands (+1.1 p.p.). However, the distances remained wide, with an employment rate of 48.9% in the South and 47.7% in the Islands compared to 67.2% in the Centre, 70.8% in the North-West and 72.3% in the North-East.

#### Unemployment returned to grow

In 2021, in Italy the increase in employment was accompanied by a marginal increase in the unemployment rate (+0.2 p.p.), that reached 9.5%, still below the pre-pandemic level (9.9% in 2019). This trend was connected to a gradual reduction in inactivity, which had significantly increased during 2020<sup>7</sup>. Italy followed a different path from the average of

<sup>7</sup> The inactivity rate increased by 2.2 percentage points in 2020 (from 34.3% to 36.5%), before falling back in 2021 to

unemployment of the 27 Member States of the European Union, which rose in the first year of the pandemic (+0.4 p.p.), and decreased in the second year (-0.2 p.p.)<sup>8</sup>. The gap between Italy and Europe has reduced compared to 2019: in 2021, the Italian unemployment rate was 2.5 percentage points above the EU average (7.0%).





In 2021, the Italian unemployment rate was still higher than the levels recorded ten years before (8.5%; + 1 percentage point), in all geographical areas (+0.2 p.p. for the North, +0.9 p.p. for the Centre and +2.6 p.p. for South and Islands) and for both genders (+1 p.p. for males and +1.1 for females; Figure 8.2). Although territorial inequalities tend to narrow over time, the share of people searching a job remained significantly higher in the South (16.0%) and in the Islands (17.2%) - with larger difficulties in Campania (19.3%), Sicilia (18.7%) and Calabria (18.0%) - compared to the Centre (8.6%) and the North (6.5% in North-East and 5.3% in North-West). The unemployment rate was higher for women (10.6% vs. 8.7% for men), foreigners (14.4% vs. 9.0% for Italians), people with lower education (13.4% for those holding at most a lower secondary school diploma compared with 5.1% for tertiary graduates) and the youngest (29.7% for 15-24 year-olds and 14.1% for 25-34 year-olds). The critical situation of young people is also highlighted by the share of 15-29 NEETs ('Not in Education, Employment or Training'), which rose by 1.6 points in 2020 and fell in the last year by 0.6 points to 23.1%, a level almost 10 p.p. higher than the EU27 average (13.1%).



Source: Istat, Labour Force Survey

<sup>35.5% (-1</sup> p.p.), a level still higher than in 2019.

<sup>8</sup> In EU27, the share of inactive people in the population increased less than in Italy in 2020 (+0.9 p.p.) and, conversely, contracted more in 2021 (-1.3 p.p.), leading to a widening of the Italy-Europe differentials (9.2 p.p. in 2021; see <a href="http://ec.europa.eu/eurostat">http://ec.europa.eu/eurostat</a>).

#### The growth of work from home slowed down in the second year of the pandemic

In 2021, the share of employed people working from home grew with less intensity, reaching 14.8% (+1 percentage point), after a sharp increase in 2020, when it almost tripled. The result was the summary of the increase for the occasional component of smart work, reaching 6.5%, and the decrease for the typical component, which fell to 8.3%. Participation in smart working remained higher among women (17.3% vs. 13.0% for men), who recorded a further improvement over the last year compared to men (+1.5 p.p. vs. +0.7 p.p.). At territorial level, the increase was higher in the central (17.7%; + 2.3 p.p.) and northern (15.9%; + 1 p.p.) areas compared to the South and Islands (10.5%; +0.4 p.p.).

#### Government expenditure on unemployment social protection doubled in 2020

In 2020, government spending in employment programmes and social protection from unemployment increased significantly, as a result of the measures taken by the government to mitigate the effects of the pandemic on employment. In absolute terms, expenditure increased from 22.6 billion euro to 46.2 billion euro. The incidence on gross domestic product more than doubled (from 1.3% in 2019 to 2.8%), also affected by the fall in GDP (Figure 8.3). Relative to total government expenditure, growth was 1.5 percentage points (from 1.3% to 2.8%).





#### Sharp decrease in the rate of accidents at work in 2020

In 2020, the incidence rate of fatal occupational injuries or injuries leading to permanent disability fell sharply to 9.0 per 10,000 persons employed (-18.3%) due to the

partial closure of production activities during the lockdown, the increase in remote working and the associated lower risk exposure of many categories of workers. Over the last decade, however, there has been an overall reduction of 41.4%, corresponding to an average annual rate of change of -5.2%, partly due to the gradual transformation of our economy towards sectors with a lower risk of accidents at work. The accident rate remained higher than the average in the South and Islands (10.2) and lower in the North (8.2 for the North-East and 7.1 for the North-West), with the Centre slightly above the average (9.4). Territorial disparities has widened over time: in 2020, the regions with the highest risk of accidents were Basilicata (14.3), Umbria (13.3) and Marche (13.0): those with less risky working conditions were Lombardia. Lazio and Piemonte (below 7 fatal accidents and permanent disabilities out of 10,000 employed). In 2020, the proportion of men was 2.5 times that of women (11.9 as against 4.9). The frequency of fatal accidents and permanent disabilities per 10,000 persons employed increased with the age of workers: from 4.6 for 15-34 year-olds to 21.0 for over 64 year-olds. These trends were also affected by the relative weight of different genders and age groups in the occupational sectors affected by higher risk of accident and by the different economic structure of the geographical areas.



#### Health and safety at work in Italy<sup>1</sup>

In 2020, the share of people aged 15-64 who suffered an accident at work in the previous 12 months was below the EU27 average (1.5%, vs. 2.4%), as well as the percentage of people who reported suffering from work-related health problems (5.4% versus 10.3%; Figure 1).

### Figure 1 - Accident at work rate during the previous 12 months and employed persons reporting work-related health problems, by country. Year 2020 (percentage values)



Source: Eurostat

Among workers aged 15 to 74, the rate of injury was higher in health (3.0%) - the only sector that, compared to the previous survey in 2013, increased risk exposure as a result of the pandemic and the consequent increase in working activity - in agriculture (2.4%), construction (2.2%) and transport and storage (2.0%; Figure 2). Excluding the Armed Forces, the highest incidence of accidents was among artisans and skilled workers (2.3%), operators of plants and semi-qualified workers (2.2%), among unskilled professions (2.1%) and technical professions (1.6%). The 5.5% of employed persons reported health problems caused or worsened by work; the share was higher among women (5.9% vs 5.2% of men) and among Italians (5.7% compared to 3.5% for foreigners)<sup>2</sup>.

<sup>1</sup> This section was edited by Barbara Boschetto with contributions by Paola Ungaro.

<sup>2</sup> The data relating to citizenship are also affected by the different age structure of the two components: health problems increased as the age of the employed increased (2.4% for people aged 15-34, 5.8% among 35-54 and 7.7% among those over 55).



Figure 2 - Accident at work rate during the previous 12 months, by industry, occupation. Year 2020 (percentage values)

The most common related work health problem was back pain (36.5% of workers suffered from it; Figure 3), followed by bone, joint or muscle problem of the lower or upper limbs (28.0%) and psychological disorders: 16% of employees suffered from stress, depression, and anxiety, women more intensely (19.4%).

Employed people in the health sector were the most affected also in this area, suffering from health problems in 8.6% of cases, followed by employed in agriculture, forestry and fisheries (8.2%) and construction (7.0%). The lowest incidences characterised the financial and insurance sectors (4.4%), real estate and business services (4.5%), and other collective and personal services (4.5%). Although the spread of work-related health problems among manufacturing workers (4.9%) was lower than the average, these accounted for almost a fifth (18.1%, for a total 227 thousand people) of the total number of people with health problems. The incidence of health problems was also higher among skilled workers, artisans, farmers (7.4%) and semi-skilled workers (6.3%), and higher than the average among trade and service workers (5.8%) and in unskilled professions (5.7%).



Source: Istat, Labour Force Survey, Ad hoc Module "Health and safety at work" 2020



Figure 3 - Employed persons reporting work-related health problems, by type of problem and gender. Year 2020 (percentage values)

Source: Istat, Labour Force Survey, Ad hoc Module "Health and safety at work" 2020

In 2020, more than 16 million persons employed (70.2% of the total) perceived the presence of at least one health risk factor in the workplace: physical (14 million 253 thousand, equal to 62.2%) or psychological (8 million 942 thousand workers, equal to 39.0%)<sup>3</sup>. Men felt exposed to physical health risks more frequently than women (65.2% versus 58.1%), conversely the share of women complaining about psychological health risks was higher than that of men (40.9% versus 37.7%), without age differences. In general, foreign workers reported lower exposure to health risk factors, both physical (52.3% versus 63.3%), and psychological (29.3% versus 40.1%).

<sup>3</sup> The physical health risk factors detected in 2020 are divided into 11 categories: repetitive hand or arm movements (reported by 32.2% of employed people), taking painful or tiring positions (31.2%), vision problems (22.0%), lifting or moving heavy loads (17.5%), the risk of falling, slipping or tripping (17.0%), exposure to dust, gases, fumes, chemicals (14.1%), the use of machine or hand tools (13.1%), excessive noise (11.9%), use of vehicles (9.2%), vibrations (7.9%) and the residual category "other risk factor" (9.2%). The psychological health risk factors are divided into 8 categories: Severe time pressure or overload of work (reported by 20.4% of employed); Dealing with difficult customers, patients, pupils, (17.7%) job insecurity (10.8%) poor communication or cooperation with the organisation (9.8%) lack of autonomy (5.1%); harassment or bulling (4.1%); violence or threats of violence (2.4%) other risk factors (1.6%).



### GOAL 9

**BUILD A RESILIENT INFRASTRUCTURE** AND PROMOTE INNOVATION AND FAIR, RESPONSIBLE AND SUSTAINABLE INDUSTRIALISATION<sup>1</sup>

#### In brief

- In 2020, passenger transportation recorded a fall due to the pandemic containment measures. Logistics recorded a deep reduction as well, although in a smaller degree than passenger transportation.
- In 2020, value-added CO<sub>2</sub> emissions intensity continued to decline, down 2.4% from 2019 and 5.1% from 2018.
- In 2021, the manufacturing industry increased again after the setback in 2020 due to the temporary closure of some activities during the lockdown.
- Investments in research and development, software, intellectual property goods have shown a lower reactivity to the economic cycle of 2021 and their share has suffered a deep contraction, respectively equal to 7.8%, 8.4% and 16.7%, with a decrease of 1.2, 1.1 and 2.4 percentage points compared to 2019.
- In 2020, spending on research and development decreased in absolute value compared to the previous year, although intensity increased by 1.51% of GDP.

The statistical measures released by Istat for Goal 9 are twenty-seven and refer to ten UN-IAEG-SDGs indicators (Table 9.1).



<sup>1</sup> This section was edited by Leopoldo Nascia with contributions by Valeria Mastrostefano and Paola Ungaro.

## Table 9.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

	VARIATION		TIONS	CONVER-		
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	AMONG REGIONS compared to 10 years before
9.1.2	Passenger and freight volumes, by mode of transport					
Passenge	er volumes, by mode of transport (Istat, 2020, thousand)	Proxy	(*)			
Freight vo	lumes, by mode of transport (Istat, 2020, thousand)	Proxy	1494301	(a)		
Kilometer	s of railways per 10,000 inhabitants (MIT - RFI, 2018, per 10,000 inhabitants)	National context	3.3	(b)		
Kilometer	s of railways per 10,000 hectare (MIT - RFI, 2018, per 10,000 hectare)	National context	6.7	(b)		
Double ar	d multiple track railway on total railway (MIT - RFI, 2018, %)	National context	40.4	(b)		
High spee	d railway on total railway (MIT - RFI, 2018, %)	National context	3.6	(b)		
Electrical	railway on total railway (MIT - RFI, 2018, %)	National context	67.0	(b)		
9.2.1	Manufacturing value added as a proportion of GDP and per capita					
Manufact	uring value added per capita (Istat, 2021, euro per capita)	Identical	4362.87			
Manufact	uring value added as a proportion of total value added (Istat, 2021, %)	Proxy	17.0			
9.2.2	Manufacturing employment as a proportion of total employment					
Manufact	uring employment as a proportion of total employment (Istat, 2021, %)	Identical	15.6			
9.3.1	Proportion of small-scale industries in total industry value added					
Share of manufact	nanufacturing value added of small-scale manufacturing enterprises on total uring value added (Istat, 2019, %)	Proxy	41.3			
9.3.2	Proportion of small-scale industries with a loan or line of credit					
Percenta	ge of small scale enterprises with a least one line of credit (Istat, 2018, %)	Proxy	42.1			
9.4.1	CO2 emission per unit of value added					
CO2 emis	sion per unit of value added (Istat, 2020, tonn/mil euro)	Identical	157.14			
9.5.1	Research and development expenditure as a proportion of GDP					
R&D inter	sity (Istat, 2020, %)	Identical	1.51			=
Product a	nd/or process innovative enterprises (per 100 enterprises) (Istat, 2018/2020, %)	National context	50.9			$\Rightarrow \Leftarrow$
Investme	nt in ICT machinery on total investment (Istat, 2021, %)	National context	4.3			
Intellectua	al property rights investment on total investment (Istat, 2021, %)	National context	16.7			
Investme	nt in R&D on total investment (Istat, 2021, %)	National context	7.8			
Software	investment on total investment(Istat, 2021, %)	National context	8.4			
Enterpriso enterpriso	es that have introduced innovation with positive impact on environment (per 100 es)	National context	37.0	(*)		

Ref. SDG	INDICATOR	Compared to SDG indicator	Value	VA Compared to 10 years before	RIATIONS Compared to the previous year	CONVER- GENCE AMONG REGIONS compared to 10 years before		
9.5.2	Researchers (in full-time equivalent) per million inhabitants							
Research	ers (in full time equivalent) (Istat, 2020, per 10,000 inhabitants)	Identical	26.9			$\Rightarrow \leftarrow$		
Impact of	knowledge workers on employment (Istat, 2021, %)	National context	18.2		(*) <i>###</i>	$\Rightarrow \leftarrow$		
ICT speci	alists in employment (Istat, 2021, %)	National context	3.7		(*) <i>###</i>			
9.b.1 Proportion of medium and high-tech industry value added in total value added								
Proportio	n of medium and high-tech industry value added in total value added (Istat, 2019, %)	Identical	31.5		(c) ###	$\Rightarrow \Leftarrow$		
9.c.1 Proportion of population covered by a mobile network, by technology								
Enterprises with at least 10 persons employed with connection to the Internet via fixed and/or mobile broadband (Istat, 2021,%)		Proxy	79.5	###	###	$\Rightarrow \Leftarrow$		
Enterprises with at least 10 persons employed with web sales to end customers (Istat, 2021,%)		National context	14.0	###	(d) ###	$\Rightarrow \Leftarrow$		
Enterprises with at least 10 persons employed with web sales in the previous year to firms and public institutions (Istat, 2021, %)		National context	8.6	###	(d) ####	$\Rightarrow \Leftarrow$		
Legenda		Note						
	IMPROVEMENT STABILITY	<ul> <li>(a) Variation compared to 2011</li> <li>(b) Variation compared to 2010</li> <li>(c) Variation compared to 2012</li> <li>(d) Variation compared to 2013</li> <li>(*) Please refer to the table on www.istat.itt</li> </ul>						
	DETERIORATION							
	NOT AVAILABLE / NOT SIGNIFICANT							

## Table 9.1 - follow Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions



#### In 2020 lockdown has conditioned passenger transportation and logistics

In 2020, passenger transport fell due to mobility restrictions to deal with the pandemic.

The lockdown had a more significant impact on air transport, which reduced the number of passengers by 72.6% compared to the previous year, resulting in the closure for many months of several terminals in major airports. Railway transport marked a meaningful fall as well, equal to 56.6% of the passengers. The local public transport in provincial or metropolitan capitals and the maritime transport recorded slightly lower contractions, respectively -48.2% and -36.3% (Figure 9.1).





Source: Istat, Air transport survey; Maritime transport survey; Rail transport survey; Survey on urban environmental data



Figure 9.2 - Freight volumes, by mode of transport. Years 2019, 2020 (thousand of tonnes)

Source: Istat, Air transport survey; Maritime transport survey; Rail transport survey; Road freight transport survey

107

The lockdown affected also the logistics, with drops in goods flows. Rail and maritime transport compared to 2019 recorded a fall respectively between 4% and 7.6%. Road freight transport, the most widespread modality, decreased by 4.6% compared to the previous year. Goods transported by air registered a deep collapse with a loss higher than 23 percentage points. (Figure 9.2)

#### Value added CO<sub>2</sub> emission intensity continued to decrease in 2020

The 2020 lockdown affected the intensity of  $CO_2$  emissions on value added, which recorded a decrease of 2.4% compared to 2019. In 2020, the intensity of emissions, amounting to 157.14 tonnes of  $CO_2$  per million euro, decreased also if compared to the intensity in 2018, 165.52 tonnes per million euro for a contraction of 5.1%. Between 2018 and 2020, manufacturing and services reduced emissions respectively by 5.7% and 6.9%. Conversely, some sectors of economic activity have recorded increments of emissions for million euro of value added. Among these sectors, there was a marked worsening of refineries and coking plants, which, in 2020, stood at 31,729 tonnes of  $CO_2$  per million euro of value added, an increase of almost 50% compared to 2019. This was largely due to the fall in oil prices during 2020, which reduced the sector's value added.

#### In 2021 the manufacturing industry returned to grow

In 2021 the manufacturing industry, after a deep fall in 2020, due to the temporary closures during the lockdown, grew again and the value added reached in real terms 4,362.87 euro per inhabitant. The share of manufacturing value added in the total economy reached 17%. In 2021, the employment share of manufacturing sector in the total economy was equal to 15.6%, a stable level since 2015, after a decade of steady decline.

#### In 2019 medium- and high-tech enterprises and small and medium-sized enterprises contracted their share of value added

2019 was the second consecutive year recording a contraction of the share of the value added of medium- and high-tech companies, down to 31.5% of the total manufacturing. This indicator fell in all the geographical areas, except the Centre, despite during 2019 GDP recorded a positive growth. The territorial gap between the North and the South remained unchanged. The structural change of manufacturing towards high-tech sectors is still an open challenge, connected with research and development and technological innovation. The NRRP, aimed to revitalise manufacturing and to boost innovation and technological sectors, has provided six different measures (Missions) to support collaborations between companies, universities and research centres. Between 2015 and 2019, in Italy, the share of value added by small and medium-sized enterprises showed a constant decrease, falling from 43.4% in 2015 to 41.3% in 2019. The contraction affected all the geographical areas except Islands, which recorded an increase. Also among the manufacturing sectors the decrease has been generalized, with few



exceptions. Regional disparities were reflected also in the share of small and medium-sized enterprises value added. It showed a production structure in South and Islands more oriented towards small and medium-sized enterprises, low share of medium-high and high technology enterprises, and, as shown below, with less research and development intensity than the rest of the country.

## Investment in research and development, software and intellectual property rights showed less reactivity than overall investment during the 2021 recovery

The 2020 crisis has drastically reduced the volume of gross fixed capital formation of companies, of about 285 billion euro in real value, followed in 2021 by a sustained recovery of about 334 billion euro. Investments in research and development, software, intellectual property rights have shown a lower reactivity to the economic cycle of 2021 and their share has suffered a sharp contraction, reaching, respectively, 7.8%, 8.4% and 16.7%, with a decrease of 1.2, 1.1 and 2.4 percentage points compared to 2019.

#### The fall in GDP has allowed Italy to nearly achieve the R&D intensity target of Europe 2020

In 2020, in Italy R&D expenditures amounted to 25 billion euro, down from 26.3 billion in 2019. Since R&D expenditures decrease was lower than that of GDP, the indicator of R&D intensity increased, reaching 1.51% of GDP although without achieving the target of 1.53% set by the Europe 2020 Strategy. In 2020, R&D intensity remained below the European average (2.3%), and the intensity of countries like France and Germany (Figure 9.3).



Figure 9.3 - R&D intensity, by country. Year 2020 (percentage values)

Source: Eurostat

Over the years, the change in the composition of the institutional sectors investing in R&D has shown the increasing importance of business and the reduction in the share of other sectors. In 2020, 61.2% of expenditure on R&D was performed by business (in 2012 it was 54%), the share of universities reached 23% (27.8% in 2012), the public sector 13% (15.1% in 2012), finally the non-profit sector failed to reach 2% (3.1% in 2012). In 2020, the Centre recorded an R&D intensity equal to 1.7%, the North 1.65%, and the South and Islands just 1%. The gap between the South and Islands and the rest of the country was still wide (Figure 9.4).





Source: Istat, R&D Survey

# In 2021 there were marginal variations of the share of employees in positions specialized in ICT and of the share of knowledge workers

In 2021, the percentage of people employed in specialised ICT positions remained stable compared to the previous year, with a value of 3.7%. For this indicator, territorial disparities were still wide: in the South and Islands they did not exceed 2.2%. (Figure 9.5)

In the same year, the share of knowledge workers in the employed remained stable (18.2% in 2021 and 18.3% in 2020) with some convergence for the South and Islands, which recorded a modest increase (17.9% in 2021 and 17.4% in 2020), respect to the rest of the country.





Figure 9.5 - ICT specialists in employment, by geographical area. Year 2021 (percentage values)

Source: Istat, Labour Force Survey
# Agenda 2030 and evaluation of the Third Mission of universities and public research bodies - (VQR) 2015-20191<sup>1</sup>

In the Research Quality Assessment (RQA) 2015-2019, universities and public research institutions selected and described some of their best initiatives on SDGs. The RQA 2015-2019, the third evaluation round of university and research institutions, has included the evaluation of the Third Mission (TM).

RQA 2015-2019 defined TM as the degree of openness towards the socio-economic context through the evaluation and transfer of knowledge<sup>2</sup>, and partitioned it in ten thematic areas (fields of action), including activities related to the 2030 Agenda and the SDGs. Universities and research institutes were invited to submit to the RQA case studies related to TM, to measure their impact in the period 2015-2019<sup>3</sup>.

A case study consisted of a descriptive report about TM activities falling into one of the ten eligible fields of action. A case study included by rule some relevant and significant impact indicators, as proposed directly by the institution under evaluation<sup>4</sup>.

The impact notion regards, possibly in relation to the outcome of scientific research produced by the institution, the transformation or improvement which the activity of TM has generated for the economy, society, culture, health, environment or, more generally, the fight against economic, social and territorial inequalities to increase the quality of life in a territorial area (local, regional, national, European or international) and the reduction or prevention of damage, risks, or other negative externalities.

The 134 institutions (universities, public research bodies supervised by Ministry of University and Research and voluntary institutions<sup>5</sup>) presented 52 case studies in the field of action "Activities related to the UN Agenda 2030 and Sustainable Development Goals" equal to 8% of all case studies submitted. 38.1% of the case studies on SDGs were submitted by universities in the North, 35.7% by universities in the Centre and 26.2% by universities in the South and Islands.

The SDGs case studies covered all scientific areas<sup>6</sup> of the universities, highly concentrated in biological sciences (13 cases), earth sciences (11), social sciences (11), and industrial and information engineering (10).

A word cloud made available an analysis of the keywords in the description of SDGs case studies (Figure 1).

The analysis of the frequencies (occurrences) of entries allowed to classify TM activities related to the 2030 Agenda according to the themes, actions and objectives achieved in the reference period.

The reference to sustainability was the most recurrent (47 occurrences of the lemma "sostenibil\*" out of a total of 300 keywords), followed by the theme of "development" (20).

The activities have privileged the environmental dimension (45 occurrences of various lemmas), social (10 occurrences) and cultural dimension (10 occurrences) than economic dimension that recorded lower frequencies.

<sup>1</sup> This section was edited by Sandra Romagnosi and Brigida Blasi (Anvur - National Agency for the Evaluation of the University and Research System) with contributions by Leopoldo Nascia.

<sup>2</sup> ANVUR (2015), Evaluation Manual of the Third Mission, <u>https://www.anvur.it/wp-content/uploads/2016/06/</u> <u>Manuale%20di%20valutazione%20TM~.pdf</u>.

<sup>3</sup> See the VQR Call 2015-2019, available at <u>https://www.anvur.it/wp-content/uploads/2021/07/VQR-Call\_Update-25.09.pdf</u>.

<sup>4</sup> For details, see the Document on Case Study Assessment.

<sup>5</sup> There are 98 universities, 14 EPRs and 22 other voluntary institutions.

<sup>6</sup> In the report of each case study was allowed to indicate multiple disciplinary areas.

There was also a frequent interest in civicness (16 occurrences) and the local territorial dimension (8 occurrences), often in relation to the notion of networks (8 occurrences).

The analysis of occurrences indicates how the actions were heterogeneous including sensibilisation (6 occurrences), protection (6), reduction (5), conservation (4), monitoring (4), management (4), savings (4), valorisation (3), mitigation (3) and redevelopment (2).

The objectives and themes related to them largely recurrent were gender equality (13 occurrences), energy (11 occurrences), climate (10), education (10 direct occurrences and 11 semantically close occurrences), health (10 occurrences) followed by the theme of sea and water, biodiversity and seismic risk.

#### Figure 1 - The cloud of key words used to describe case studies related to Agenda 2030 activities in the Third Mission of universities and public research centres, RQA (2015-2019)



Source: Anvur, RQA, 2015-2019



## **GOAL 10**

**REDUCE INEQUALITY** WITHIN AND AMONG COUNTRIES<sup>1</sup>

## In brief

- In 2021, gross disposable income per capita of Italian households rebounded (+3.8%) after the decline of the previous year. The increase in purchasing power was less intense (+2.1%).
- In 2020, during the first pandemic year, net income inequality (measured as the ratio s80/s20) increased by 5.9, 0.2 points higher than 2019. Growth rates of household income per capita among the bottom 40 per cent of the population decreased more than those of the total population (-2.1 and -0.2 respectively in 2020).
- In 2020, new residence permits contracted further (standing at 106,503), 39.9% less than in 2019. The contraction regarded all entry reasons, although hit above all study permits (-58.2%), because of the prolonged border closures due to the COVID-19 pandemic.

Statistical measures disseminated by Istat for Goal 10 are fifteen, referring to six UN-IAEG-SDGs indicators (Table 10.1).



<sup>1</sup> This section was edited by Daniela Fantozzi with contributions by Eugenia Bellini, Cinzia Conti ad Francesca Lariccia.

## Table 10.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, last available value and variations compared to 10 years before and to the previous year and convergence among regions.

				VARIA	AMONG	
Rif. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous	AMONG REGIONS compared to 10 yeras before
10.1.1	Growth rates of household expenditure or income per capita among	the bottom 40 p	er cent of the pop	ulation and the	e total populati	on
Growth rat of the popu	es of household income per capita among the bottom 40 per cent Jlation (Istat, 2020, percentage values)	Identical	-2.11			
Growth rat (Istat, 2020	es of household income per capita among the total population , percentage values)	Identical	-0.22			
Disposable ratio)	e income inequality (s80/s20) (Istat, 2020,pure number - income	Proxy	5.9	$\bigcirc$		=
Adjusted d	isposable income per capita (Istat, 2021, euro (current prices)	Nationa context	23,767			
Gross disp	osable income per capita (Istat, 2020, euro (current prices)	National context	18,805			$\Rightarrow \Leftarrow$
Purchasing	g power (Istat, 2021, million euro (chain linked))	National context	1,115,090			
10.2.1	Proportion of people living below 50 per cent of median income, by sex, a	age and persons w	ith disabilities			
People at r	isk of poverty (Istat, 2021, percentage values)	Identical	20.1			$\Rightarrow \Leftarrow$
People at r	isk of poverty (Istat, 2021, thousands)	Identical	11,843	$\bigcirc$		
10.4.1	Labour share of GDP					
Labour sha	are of GDP (Istat, 2020, percentage values)	Identical	53.08			
10.7.2	Number of countries with migration policies that facilitate orderly, s	afe, regular and r	esponsible migrat	tion and mobil	ity of people	
Non EU cit	izens holding a long-term residence permit (Istat, 2021, n.)	National context	3,373,876			
Percentage 2021, perce	e of Non EU citizens holding a long-term residence permit ( (Istat, entage values)	National context	64.4			
New permi	ts (Istat, 2020, n.)	National context	106, 503			
Number of	acquisitions of citizenship (Istat, 2020, n.)	National context	131,803			
Percentage (Istat, 2020	e of new permits issued for asylum and other humanitarian reasons , percentage values)	National context	12.6			
10.7.4	Proportion of the population who are refugees, by country of origin					
Residence	permits for asylum per 1,000 (Istat, 2021, per 1.000 permits)	Proxy	12.8			
10.b.1	Total resource flows for development, by recipient and donor count investment and other flows)	ries and type of f	low (e.g. official d	evelopment as	sistance, forei	gn direct
Total net o Landlocke percentage	fficial development assistance (ODA) to Africa, LDCs, SIDS and d (Ministry of Foreign Affairs and International Cooperation, 2019, e values)	Identical	(*)			
Legend					Notes	
	IMPROVEMENT	$\Rightarrow \Leftarrow$	(*) Please CONVERGENCE www.istat.i		(*) Please refe www.istat.it wv	r to the table on /w.istat.it
$\bigcirc$	STABILITY	=	STABILTY			
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGENCE			
	NOT AVAILABLE / NOT SIGNIFICANT					

## In 2021 disposable income increased

In 2021, gross disposable income of households resident in Italy increased by 3.8% (purchasing power increased by 2.1%). In current prices the growth was equal to 4.3% (20,119 euro per capita<sup>2</sup> compared to 19,295 in 2020). Gross adjusted disposable per capita income, i.e. inclusive of the value of services in kind provided by public administrations and public and non-profit institutions, recorded the same increase (+4.3%). In 2021, the country's recovery was characterised by an increase in consumption (+7.0%) associated with a decline in the saving propensity, which reached 13.1%, 2.5 points less than in the previous year (Figure 10.1).





(a) Gross disposable income of consumer households in real terms, obtained using the deflator of household final consumption expenditure (chain linked values with reference year 2015).

### Inequality raised during first pandemic year

In Italy, since the beginning of the economic crisis of inequality, as measured by the ratio between the amount of equivalent disposable income of the highest quintile and the lowest quintile (the indicator is identified as s80/s20). In 2015 s80/s20 reached 6.3, the highest value since 2004; in the following years it decreased achieving 5.7 in 2019. During 2020, the first pandemic year, the positive trend reversed with an increase reaching 5.9<sup>3</sup>. Inequality increased in the Northern Italy (from 4.6 to 4.9 in 2020): North-East and North-West



<sup>2</sup> Per capita gross disposable income is calculated as the ratio between the income of consumer households (which amounts to 1,162,559 million of euro in 2021) and that of producer households (which amounts to 26,659 million of euro in 2021) divided by resident population. In 2020, the income of consumer households was 1,120,017 million of euro and that of producer households was 26,881 million of euro.

See the study "The risk of poverty and income support during the pandemic" in Goal 1 to go deeper on the risk of 3 poverty following measures to support household incomes during the pandemic.

showed a worsening. South and Islands, while recording a ratio higher than the Italian average, continued to show a decrease (from 6.7 in 2019 to 6.5 in 2020).

The increase in inequality is associated with the dynamics of household income per capita among the bottom 40 per cent of the population. In 2020, it decreased more than that of the total population (-2.1% and -0.2% respectively) reversing the trend observed between 2016 and 2019 (Figure 10.2). In 2020, this dynamic is evident in the North-West (-4.0%) and the Islands (-3.9%) which recorded a percentage of the poorest 40% of the population lower than the Italian average.

Figure 10.2 - Disposable income inequality (s80/s20) and growth rates of household income per capita among the bottom 40 per cent of the population and among the total population. Years 2004-2020 (percentage values and pure number)



Source: Istat, Eu-Silc

### Migration flows: the decrease is a result of the restrictions in the pandemic phase

In 2020, 106,503 new residence permits were issued to non-EU citizens, 39.9% less than in 2019, because of the restrictions in the pandemic phase which led to border closure in many countries. Contraction affected all the permits requests along all reasons.

The most consistent reductions concerned study permits, from 20,384 in 2019 to 8,520 in 2020 (-58.2%) and those for asylum requests, from 27,652 to around 13,419 in 2020 (-51.5%), continuing the negative trend already observed in 2018 and 2019. Regarding permits for political asylum and humanitarian reasons, reduction mainly affected people from West Africa (-15.4 p.p. compared to 2019) and age groups 30-39 (-8.4 p.p.) and 45-49 years (-5.7 p.p.). Work permits continued to decrease (-8.9%), but less intensively than the previous year. Family reunification permits (-41.0%) also fell sharply in 2020 due to the restrictive measures adopted during the pandemic. However, they were, in absolute value,

the main reason for requests. In 2020, among the top ten communities by number of acquisitions, the greatest reductions compared to 2019 occurred among the US (-51.0%), the Chinese (-46.8%) and the Ukrainians (-46.4%) because of the border closures. New residence permits issued to Indians citizens showed a sharp decline, in both absolute (-5,214) and relative (-45.7%) values. In the ranking by citizenship of new permits, the Albanians are in the top position recording 13,165 new permits, followed by the Moroccans, with 10,266 new permits.

Table 10.2 - Non-EU citizens entered Italy, by first ten citizenships and reason for permit. Years 2019 and	<b>1 2020</b> (N. and
percentage values)	,

	Total		Reason for permit - Year 2020							
Countries of citizenship	2020	2019	Work	Family	Stydy	/Asylum Humanitarian	Other reasons			
Albania	13,185	21,437	6.9	64.0	1.4	1.3	26,4			
Могоссо	10,266	16,033	6.9	85.4	1.3	1.8	4,6			
Pakistan	7,925	11,204	9.7	36.9	3.9	46.5	3,0			
Bangladesh	6,467	9,934	4.4	65.4	0.3	17.8	12,0			
India	6,191	11,405	24.7	55.2	13.2	2.1	4,7			
Egypt	4,740	6,662	3.1	78.9	2.7	4.1	11,2			
People's Republic of China	4,731	8,889	3.5	40.6	50.1	2.4	3,3			
Nigeria	3,911	5,211	12.5	41.1	1.0	35.7	9,6			
United States	3,841	7,837	41.1	48.3	5.2	0.1	5,4			
Ukraine	3,264	6,095	12.6	60.2	3.1	6.4	17,8			
Other countries	41,982	72,547	7.9	55.7	10.1	14.9	11,4			
Total	106,503	177,254	9.7	58.5	8.0	12.6	11,2			

Source: Istat, processing on Ministry of Interior data

In terms of the acquisitions of citizenship, in 2020 they recorded an increase, although heterogeneous in reasons. Overall, 131,803 foreigners obtained Italian citizenship, including 118,513 (89.9%) non-EU origin, in slight increase compared to the previous year, when there were around 114,000 (Figure 10.3). The main reason to obtain citizenship by a non-EU foreigner remained residence (+ 48.5%). On 1 January 2021, in Italy there were 3,373,876 non-EU citizens legally residing, a number 6.7% less than the previous year.





Figure 10.3 - Acquisitions of citizenship of non-EU citizens, by motivation. Years 2019-2020  $(N_{\cdot})$ 

Source: Istat, processing on Ministry of Interior data

## Unaccompanied foreign minors<sup>1</sup>

At the beginning of January 2022 Italy recorded 1,056,187 foreign residents under the age of 18. They represent more than 20% of the foreign resident population (minors represent 15.1% out of the total Italian resident population). In 2020 about 38,000 new permits have been issued to non-EU citizens under the age of 18 (Figure 1), 89% of these permits have been assigned to children born in Italy or who arrived for family reunification. In 2020 Italy recorded a generalised decrease in migratory flows, due to the restrictions for the containment of COVID-19. In 2019 the new permits issued to minors had been over 51,000 and those per family represented 89% of the total.

Most migrated minors resident in Italy live with their parents, but children and in general minors migrating alone are an aspect of concern. The phenomenon of unaccompanied foreign minors is growing quickly. It requires a special attention and specific measures in terms of hospitality and integration.

The Ministry of Labour and Social Policies, through its dedicated database, recorded, as of 30 April 2022, 14,025 unaccompanied minors in Italy; at the end of 2021 they were less than 13.000 and in April 2021 they were about 6,600. Male unaccompanied minors are equal to 83,7% of the total and more than 69% of minors fall in the age group between 16 and 17 (more than 50% are 17 years old).

In April 2022, the war in Ukraine had a significant impact on the flow of unaccompanied minors: minors arrived in Italy fleeing the Ukraine war are the largest group (3,906), followed by the Egyptians (2,325) and Bangladeshi citizens (1,731). The regions most interested by unaccompanied foreign minors are Lombardia (19.6% of presences) and Sicilia (18.0%).



#### Figura 1 - Non-EU minors entered Italy, by first reason for permit. Years 2017-2021 (a) (N.)

Source: Istat, processing on Ministry of Interior data a) Provisional data.

1 This section was edited by Stefania Congia and Rita Serusi (Ministry of Labour and Social Policies) with contributions by Eugenia Bellini, Cinzia Conti and Daniela Fantozzi.





## **GOAL 11**

**MAKE CITIES** AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE<sup>1</sup>

## In brief

- In 2021, 17.6% of the population complained of problems related to structural deficiencies and moisture in dwellings. The discomfort was more pronounced in the South and Islands (19.9%).
- In 2021, the share of frequent users of public transport, in the age class 14 years and older, was lower than 10% (it was 15.1% in the pre-pandemic year). Students who move to their place of study by only public transport were around 25% (they were 28.5% in 2019). The decrease was concentrated significantly in urban areas: between 2019 and 2020, the supply of local public transport in provincial or metropolitan capitals reduced by one fifth.
- In 2020 the share of municipal waste sent to landfill, was equal to 20.1% and still far from the EU 2035 target (10%) continued to decline. Due to the pandemic in metropolitan capitals also per capita volumes decreased.
- In 2020, air pollution continued to fall, especially PM<sub>2,5</sub>, although air pollution remained high in large cities with a threat for health.

The statistical measures released by Istat for Goal 11 are thirty-two, and refer to nine UN-IAEG-SDGs indicators (Table 11.1).



<sup>1</sup> This section was edited by Domenico Adamo with contributions by Silvana Garozzo, Antonino Laganà and Renato Magistro.

## Table 11.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and previous year and convergence among regions

				VARIATIONS			CONVER- GENCE				
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years earlier		Compared to previous year	AMONG REGIONS compared to 10 years earlier				
11.1.1	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing										
Share of to or rot in w	tal population living in a dwelling with a leaking roof, damp walls, floors or foundation, indow frames of floor (Istat, 2021, percentage values)	Proxy	17.6				$\Rightarrow \leftarrow$				
Overcrowo	ding rate (Istat, 2021, percentage values)	Proxy	28.0				$\Rightarrow \Leftarrow$				
Noise fron	n neighbours or from street (Istat, 2021, percentage values)	Proxy	13.7				=				
11.2.1	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities										
Household	ds with difficulties of connection with public transport (Istat, 2021, percentage values)	Proxy	30.6				$\Leftarrow \Rightarrow$				
Students v	who travel to their study place, only by public transports (Istat, 2021, percentage values)	National context	21.5				$\Leftarrow \Rightarrow$				
Employed	who travel by private means of transport (Istat, 2021, percentage values)	National context	76.2				=				
Seat-Km o	f public transport networks (Istat, 2020, values per inhabitant)	National context	3,622			Ŏ	$\Leftarrow \Rightarrow$				
Frequent u	users of public transport (Istat, 2021, percentage values)	National	9.4	ŏ		Ŏ	$\Leftrightarrow \Rightarrow$				
11.3.1	Ratio of land consumption rate to population growth rate										
Soil sealin	g from artificial land cover per capita (Ispra, 2021, m <sup>2</sup> per inhabitant)	Proxy	363		(a)		$\Leftrightarrow \Rightarrow$				
lllegal buil	ding rate (Cresme, 2021, per 100 building permits issued)	National	15.1				⇒∈				
11 4 1	Total expenditure per capita on the preservation, protection and conservation of all cultural	and natural herita	ige, by soui	rce of funding	j (pu	blic, private), t	ype of				
Public exp	heritage (cultural, natural) and level of government (national, regional, and local/municipal) enditure per capita spent on the preservation of the cultural and natural heritage (Istat,	Deserve	28.4								
2019, Euro	<ul> <li>(current prices))</li> <li>Number of deaths, missing persons and directly affected persons attributed to disasters per</li> </ul>	100.000 populati	30.1 on	•							
11.5.1	,	National									
Populatior	n at risk of flood (Ispra, 2020, percentage values)	context	11.5		(b)		$\Rightarrow \leftarrow$				
Populatior	n at risk of landslides (Ispra, 2020, percentage values)	context	2.2		(b)	$\bigcirc$	$\Rightarrow \leftarrow$				
Deaths an	d missing persons for floods (Ispra, 2020, N.)	Partial	11								
Deaths an	d missing persons for landslides (Ispra, 2020, N.)	Partial	6								
Injured pe	rsons for floods (Ispra, 2020, N.)	Partial	-								
Injured pe	rsons for floods (Ispra, 2020, N.)	Partial	22								
11.6.1	Proportion of municipal solid waste collected and managed in controlled facilities out of tot	al municipal wast	e generated	, by cities							
Landfill of	waste (Ispra, 2020, percentage values)	Proxy	20,1				$\Leftarrow \Rightarrow$				
Municipal	waste generated (Istat, processing on Ispra data, 2020, Kg per inhabitant)	National context	487				=				
11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)											
Urban pop (Eurostat,	ulation exposure to air pollution by particulate matter Particulate <2.5 Micro g/m <sup>3</sup> 2019, microgram per m³)	Identical	15								
Urban pop (Eurostat.	ulation exposure to air pollution by particulate matter Particulate <10 Micro g/m <sup>3</sup> 2019. microgram per m <sup>3</sup> )	Identical	26	Ŏ		Ŏ					
Air quality	- PM2.5 (Istat, processing on Ispra data, 2020, percentage values)	Proxy	77,4	Ŏ		Ŏ	$\Leftarrow \Rightarrow$				
PM₁₀ daily	limit exceeds in provincial capitals (Istat, processing on Ispra data, 2020, number of days)	Proxy	36								
PM₁₀ Annu	al average concentration in provincial capitals (processing on Ispra data, 2020,	_									
microgram	n per m³; Italy value indicates the number of municipalities with a value above the limit)	Proxy	71		(c)						
PM <sub>2.5</sub> Annu microgram	aal average concentration in provincial capitals (processing on Ispra data, 2020, 1 per m³; Italy value indicates the number of municipalities with a value above the limit)	Proxy	77								
Ispra data,	gen unxide. Annual average concentration in provincial capitals (istat, processing on 2020, microgram per m²; italy value to the number of municipalities with a value above the limit).	National context	9		(c)						
O <sub>3</sub> Ozone	daily limit exceeds in provincial capitals (Istat-Ispra, 2020, number of days)	National context	77								
Number of metropolit	f Summer days (anomalies with respect to Climatic Normal 1971-2000 In regional and an city capitals) (Istat, 2020, N.)	National context	(*)								
Number of metropolit	f Tropical nigths (anomalies with respect to Climatic Normal 1971-2000 in regional and an city capitals) (Istat, 2020, N.)	National context	(*)								
Number of	Dry days (anomalies with respect to Climatic Normal 1971-2000 in regional and	National	(*)								
11 7 1	an dry capitalist (istat, 2020, N.) Averana share of the huilling area of cities that is open space for public use for all hy say a	context	ith disabilit	ios							
Incidence	of urban green areas on urbanized area of the cities (Istat, 2020, m <sup>2</sup> per 100 m <sup>2</sup> of	ge and persons w	0.5		(1-)		_				
urbanized	areas)	and place of com	8,5	the province	(0)		_				
Persons a	ged 14-65 years old victims of at least one form of sexual harassment, by sex, age, disability status	and place of occ	arrence, in	are previous	12 m	ionuis					
(Istat, 2015 Legend	5/16, percentage values)	identical	5,1		Not						
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGENCE (a) Variation comp (b) Variation comp		Variation compare	ed to 2012 ed to 2015					
0	STABILITY	=	(c) Variation compared to STABILITY ( <sup>c</sup> ) Please refer to the tab www.istat.it DIVERGENCE			a table on					
	DETERIORATION	$\Leftarrow \Rightarrow$									
	NOT AVAILABLE / NOT SIGNIFICANT										

## Almost one fifth of the population were living in dwellings with structural or moisture problems

In 2021, after the significant increase in the previous year, the proportion of people living in dwellings with structural or moisture problems was still higher than the pre-pandemic year (14% in 2019, 19.6% in 2020 and 17.6% in 2021). The increase of the trend might arise from a variation of perceptions related to the difficulties of share of the population during the pandemic period and the prolonged lockdown.

These issues were reported especially by residents of the South and the Islands (15.5% in 2019, 23.5% in 2020 and 19.9% in 2021), without any relevant differences between urban and suburban territories.

## Public transport mobility in the urban areas has fallen

Sustainable mobility is a central theme for urban regeneration. It is essential to promote sustainable mobility through the intensification of public transport, particularly in large urban territories.

In 2019-2021, also due to the pandemic, frequent users of public transport in the age class 14 years and older recorded a gradual reduction. In 2021 they reached 9.4%, they were equal to 15.1% in 2019 (Figure 11.1). Moreover, between 2004 and 2019 the percentage of those users showed marginal fluctuation and remained within the range 15 - 16%.

The contraction was widespread in the territory. It was very concentrated in the metropolitan areas, both in the centre and in suburbs, and in municipalities with more than 50,000 inhabitants.



Figure 11.1 - Frequent users of public transport, by geographical area, municipality of residence. Years 2019-2021(percentage values)



123

Source: Istat, Survey on Aspects of daily life

In the same period, the share of students reaching their place of study only by public transport decreased too. They were 28.5% in 2019 and 21.5% in 2021 (Figure 11.2). The trend was widespread in the territories, largely concentrated in metropolitan areas and their suburbs, and in municipalities with more than 50,000 inhabitants and up to 2,000 inhabitants.





Source: Istat, Survey on Aspects of daily life

## Local public transport supply declined in provincial capitals

In 2020, the supply of local public transport (LPT) recorded a decrease of 21.7% equal to 3,622 seat-km per inhabitant. The joint fall of supply and demand of LPT was due to the various lockdowns implemented during the pandemic period.

The territorial distribution of the LPT offer showed a wide gap between the geographical areas: 5,015 seat-km per inhabitant in the towns in the North, 3,737 in the Centre and 1,455 in the South and Islands (Figure 11.3).

There was a reduction in LPT supply in all metropolitan capitals, however, in Milan, Venice and Palermo the reduction in LPT supply was smaller. In contrast, in Turin, Florence, Messina, Catania and Cagliari the reduction was more than 30 percent.



Figure 11.3 - Seat-Km of public transport networks in the provincial capitals, by geographical area and seat-Km of public transport networks in the metropolitan capitals. Years 2019 and 2020 (seat-km per inhabitant)

Source: Istat, Survey on urban environmental data

## Municipal waste landfilling has decreased

Waste cycle management is crucial for the quality of urban life. In 2020, the share of municipal waste sent to landfill further reduced (20.1% compared to 20.9% in the previous year). It confirmed the trend started from 2004 (59.8%). However, the share of municipal waste sent

Figure 11.4a - Landfill of waste. Years (percentage values)







(AI 8



to landfill remained far from the EU target of 10% of municipal waste at national level<sup>2</sup> by 2035<sup>3</sup> (Figure 11.4a).

#### Municipal waste generated in provincial capitals declined

In 2020, the average municipal waste was equal to 502.7 kg per inhabitant (see Goal 12); the municipal waste produced in municipalities amounted to 9.9 million tonnes (-7.2% compared to the previous year), equivalent to 520 kg per inhabitant. The decrease in municipal waste production of urban waste was more marked in provincial or metropolitan capitals (-9.2%), where, however, the production per capita remained above the average of Italy, with the exception of Torino, Cagliari, Milano and Reggio di Calabria.

### Fine particle pollution PM2.5 improved gradually

Throughout Italy, there is an improving trend in atmospheric concentrations of  $PM_{2,5}$ . The percentage of exceedances of the WHO reference value was 77.4% of the total valid monitoring (the lowest value of the indicator since 2010). In 2019 it was 81.9%. Out of 89 provincial or metropolitan capitals for which valid monitoring was available, 85.1% exceeded the WHO reference value for  $PM_{2.5}$ . There was a slight improvement in the metropolitan capitals, although pollution levels were still high (Figure 11.5).



Figure 11.5 - PM<sub>2.5</sub> Annual mean concentration in provincial or metropolitan capitals (a). Years 2016-2020 (micrograms per m<sup>3</sup>)

Source: Istat, processing on data from Ispra. (a) Catania, Messina and Palermo did not monitor the  $PM_{25}$ .

<sup>2</sup> The assessment about the achievement of the target is only eligible at country since the percentages recorded in the different territories come from regional waste management policies and from extra-regional waste inflows and outflows.

<sup>3</sup> As stated by Directive 2018/850/EU, of the circular economy package, amending Directive 1999/31/EC on the landfill of waste, transposed by Legislative Decree of 03/09/2020 No. 121.

## The trend of air pollution in cities<sup>1</sup>

Air pollution is a acknowledged risk factor for health. A causal relationship with adverse health effects has been established and recognised by the international scientific community, coming from the exposure to fine airborne particles, those with an aerodynamic diameter smaller than 2.5 micro meters, also known as fine particles or  $PM_{2,5}^2$ . Therefore the reduction of PM2.5 in the air we breathe could help to lower diseases caused by exposure.

Figure 1 - Annual mean concentrations of PM<sub>2.5</sub> according to national monitoring. Years 2010-2020 (micrograms per m<sup>3</sup>)



Source: Ispra elaborations on ARPA/APPA data

Currently<sup>3</sup> it is feasible to assess the presence of the particles with reference to years 2010-2020, for which 185 measurement points with continuous observations are available<sup>4</sup>. The Deseasonal correction has been managed on monthly averages (Figure 1). Ispra arranged an analysis of trends<sup>5</sup> on a homogeneous sample for the period 2010-2020. They observed an average annual reduction of 2.5% (with confidence interval -5.3%  $\div$  -1.0%) on the portion of the sample, for which a statistically significant decreasing trend was identified (139 out of 185 cases). The observed reduction was widespread among the different large urban territory (Torino, - 2.2% annually; Milano, - 2.5%; Venezia, -2.2%; Bologna, - 2.0%; Firenze, -2.6%; Roma, - 3.0%, Taranto, -2.7%) with an avarage decrease over the reference years between 20% and 30%, and in line with the outcomes of previous studies<sup>6</sup>. The indication that emerges is a confirmation of the generalised trend of decreasing PM<sub>2.5</sub> concentrations in both cities and suburban and rural territory of the country (Figure 2).



<sup>1</sup> This section was edited by Giorgio Cattani and Silvia Brini (Ispra) with contributions by Domenico Adamo.

<sup>2</sup> Word Health Organization - WHO. 2021. "Global air quality guidelines. Particulate matter (PM<sub>2,5</sub> and PM<sub>10</sub>), zone, nitrogen dioxide, sulfur dioxide and carbon monoxide". Geneva. Licence: CC BY-NC-SA 3.0 IGO.

<sup>3</sup> Systematic monitoring of this fraction of atmospheric particulate matter began in Europe only since 2008 with the entry into force of Directive 2008/50/EC.

<sup>4</sup> The data sets analysed come from daily averages for each monitoring point, with a data quality coverage of at least 75 percent over the whole year

<sup>5</sup> The non-parametric Mann-Kendall test adjusted for seasonality and the Theil-Sen method for estimating annual percentage change (95% confidence interval) were used. See Carslaw, D.C.2013. *The openair manual - opensource tools for analysing air pollution data*. Manual for version 0.9-0, King's College London; Hess A, Iyer H, Malm W. 2001. "Linear trend analysis: a comparison of methods". *Atm Environ*, No 35.

<sup>6</sup> National System for the Protection and Environment - SNPA. "Air quality in Italy. 2020 Edition." *Reports* 17/2020, Rome, December 1, 2020. ISBN 978-88-448-1027-6.

PM<sub>2.5</sub> concentrations should be reduced further in order to meet the medium-term perspective requirements set by the European Union<sup>7</sup> (to halve the health impact of air pollution by 2030 compared to 2005), through a deep decrease of direct particulate emissions and secondary pollutants<sup>8</sup>.

Figure 2 - Trend of annual mean concentrations of PM<sub>2.5</sub> according to nationwide monitoring by provincial or metropolitan capitals. Years 2010-2020



Source: Ispra elaborations on ARPA/APPA data

National and international plans in order to abate particulate air pollution envisage measures regarding primarily energy production, civil heating, transportation, building energy efficiency, agriculture and animal husbandry. These actions should be consistent and synergistic with those to be prepared to mitigate the effects of climate change.

<sup>7</sup> Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions The Second Clean Air Perspective com/2021/3 final standard.

<sup>8</sup> PM<sub>2.5</sub> consists largely of particles formed in the atmosphere from other so-called "secondary" pollutants (ammonia, sulfur oxides, nitrogen oxides, and volatile organic compounds). For nitrogen oxides, the main source can be found in vehicular traffic, which also contributes to the direct release of carbon particles (black carbon) into the atmosphere. Woody biomass burning (with the emission of volatile organic compounds and black carbon) and ammonia emissions from agricultural activities contribute significantly to keeping PM<sub>2.5</sub> levels high during the winter months.



## **GOAL 12**

**ENSURING SUSTAINABLE** PRODUCTION AND CONSUMPTION PATTERNS<sup>1</sup>

## In brief

- In 2020, the fall in household consumption, due to the measures for the pandemic mitigation, contributed to a substantial reduction in municipal waste per inhabitant, that reached 487 kg per capita (-3.2% compared to 2019). The value was lower than the EU27 average and the major European economies (with the exception of Spain).
- In 2020, progress was made in the process of waste managing and converting into new waste resources. There was an increase in the circular use rate of materials (21.6%; +2.1 percentage points compared to the previous year), the rate of recycling of municipal waste (54.4%; +1.1 p.p.) and the percentage of separate collection of municipal waste (63.0%; +1.7 p.p.).
- Italy ranked fourth in the European ranking for the circular use rate of materials and sixth in the rate of recycling, thanks to improvements in the Italian performance above EU27 average.
- In 2020, in Italy, production activities generated 9.8 million tonnes of special hazardous waste, a decrease of 3% compared to 2019. The generation of special hazardous waste has increased since 2014, as well as the ratio of special hazardous waste to GDP.
- In 2020, material consumption per unit of GDP was stable. Italy remained in the third place in the European ranking.
- In 2019-2020, there were positive signals from the Public Institutions, which increased the proportion of purchases of goods and/or services by adopting minimum environmental criteria. Conversely, the percentage of public institutions adopting measures of social and/or environmental reporting reduced.
- In the three-years 2018-2020, almost 4 out of 10 enterprises have developed innovations with a positive impact on the environment.

The statistical measures released by Istat for Goal 12 are twenty-seven and refer to eight UN-IAEG-SDGs indicators (Table 12.1).



<sup>1</sup> This section was edited by Paola Ungaro with contributions by Flora Fullone, Silvana Garozzo, Leopoldo Nascia and Angelica Tudini.

## Table 12.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

				VAR		
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	CONVERGENCE AMONG REGIONS compared to 10 years before
12.2.2	Domestic material consumption, domestic material consumption per capita, and domestic	material consump	tion per GDP			
Domestic	material consumption per capita (Istat, 2020, tonne per capita)	Identical	7.7			$\Leftarrow \Rightarrow$
Domestic	material consumption per GDP (Istat, 2020, tonne per 1,000 euro)	Identical	0.29			$\Rightarrow \Leftarrow$
Domestic	material consumption (Istat, 2020, million tonnes)	Identical	458.7			=
12.4.2	(a) Hazardous waste generated per capita; and (b) proportion of hazardous waste treated, b	y type of treatme	nt			
Amount of	f hazardous waste generated (Ispra, 2020, tonne)	Proxy	9,848,216			
Hazardous	s waste sent to the recovery operations (Ispra, 2020 tonne)	Proxy	4,425,343			
Hazardous	s waste disposed of (Ispra, 2020, tonne)	Proxy	5,013,591			
12.5.1	National recycling rate, tons of material recycled					
National re	ecycling rate (Ispra, 2020, percentage values)	Proxy	54.4			
Separate o	collection of municipal waste (Ispra, 2020, tonne)	Proxy	18,245,851			
Separate o	collection of municipal waste (Ispra, 2010, percentage values)	Proxy	63.0			$\Rightarrow \leftarrow$
Municipal	waste collected (Istat processing on Ispra data, 2020, Kg per inhabitant)	National context	487			=
Circular m	aterial use rate (Eurostat, 2020, percentage values)	National context	21.6			
12.6.1	Number of companies publishing sustainability reports					
Percentag reports an	e of enterprises with at least 3 persons employed drafting environmental and sustainability d/or accounts (lstat, 2016/2018, percentage values)	Proxy	2.5			
Percentag certificatio	e of enterprises with at least 3 persons employed acquiring voluntary environmental on of product or process (Istat, 2016/2018, percentage values)	National context	8.2			
Public Inst percentag	titutions that adopt forms of social and/or environmental reporting (Istat, 2019/2020, e values)	Proxy	15.6		(a)	(b) ⇒ <del>⊂</del>
Number of	f organizations/enterprises with EMAS registration (Ispra, 2021, N.)	National	1,038			
Number of	f local units with UNI EN ISO 14001 Environmental management system Certification (Istat	National	22,165			
Number of	f local units with UNI CEI EN ISO 50001 Energy management system Certification (Istat	National	0.000			
processin Enterprise	g on Accredia data, 2020, N.) Is that have introduced innovation with positive impact on environment (Istat, 2020,	context National	2,262			
percentag	e values)	context	37.0			
12.7.1	Grado di attuazione di politiche sostenibili e piani d'azione in materia di appalti pubblici					
Public inst (CAM), in a 2020, perc	titutions that purchase goods and/or services by adopting minimum environmental criteria at least one purchase procedure (Green purchases or Green Public Procurement) (Istat, entage values)	National context	26.7			(c)
12.a.1	Installed renewable energy generating capacity in developing countries (in Watts per capita)					
Net install Energy Ag	ed renewable energy generating capacity (Istat processing on International Renewable jency data, 2021, Watt per capite)	Identical	962.0		(d)	
Total net of intervention	official development assistance (ODA) gross deliveries for research in the different areas of on (Ministry of Foreign Affairs and International Cooperation, 2020, million euro, current	National context	6.17		(e)	
12.b.1	Implementation of standard accounting tools to monitor the economic and environmental a	aspects of tourism	n sustainability			
Implement	tation of standard accounting tools to monitor the economic and environmental aspects of	Identical	(*)			
Impact of	tourism on waste (Ispra, 2020, kg per equivalent inhabitant)	National	4.66			$\Leftarrow \Rightarrow$
Tourism ir	ntensity index (Istat, 2020, per 1,000 inhabitants)	National	3,495			
Nights spe accommo	ent in open air establishments, farmhouses and mountain refuges on nights spent in all the dation establishments (Istat, 2020, percentage values)	National context	22.6		(d)	$\Leftarrow \Rightarrow$
Tourism tr	rips in Italy by type of trip and main means of transport (Istat, 2021, percentage values)	National context	(*)			
12.c.1	Amount of fossil-fuel subsidies (production and consumption) per unit of GDP					
Fossil-fue percentao	I subsidies as a percentage of GDP (Ministry of the Economy and Finance, 2020, e values)	Identical	0.68		(f)	
Lecond					Notes	
		$\rightarrow$ $\leftarrow$		-		
	STABILITY		STABILITY	_	<ul><li>(a) Variation com</li><li>(b) Variation com</li><li>(c) Variation com</li></ul>	pared to 2012/2015 pared to 2016/2017
		_	STADIETT		(d) Variation comp	pared to 2017
		$\Leftrightarrow \Rightarrow$	DIVERGENCE		(e) variation comp (f) Variation comp (*) Please refer to	pared to 2013 ared to 2016 the table on
	NUT AVAILABLE / NUT SIGNIFICANT				www.istat.it	

## Year 2020 showed a decline of municipal waste generation per capita

In 2020, the generation of municipal waste (MW) in Italy decreased significantly to 487 kg per capita (-16 kg per inhabitant compared to the previous year; -3.2%). This trend is due to the fall in consumption, generated by the lockdown mitigation measures.

The MW per capita produced in Italy was lower than the EU27 average (505 kg) and than Germany (628 kg) and France (538 kg) as well. Italy's position reflected the broader medium-term improvements of our country, in line with the waste prevention targets supported by regulatory initiatives. Compared to 2010, Italian production of MW decreased by 11.0%, a similar intensity as in Spain (-10.8%). Over the same period, increases were recorded in the EU27 average, in Germany and in France (+0.4%, +4.3% and +0.7% respectively)<sup>2</sup>.

## Improvements in waste cycle management continued

The treatment of municipal waste has recorded notable positive trends. In 2020, progress in reducing landfilling (see Goal 11) was also due to increased ability to convert waste into new resources. Circular material use rate, the share of material recovered and fed back into the economy in overall material use, showed a further improvement, increasing to 21.6% (+2.1 percentage points compared to 2019 and +10.1 compared to 2010; Figure 12.1). Italy ranked fourth among the 27 countries of the European Union, after the Netherlands (30.9%), Belgium (23.0%) and France (22.2%), around 9 percentage points higher than the EU27 average (12.8%)<sup>3</sup>.

Figure 12.1 - Recycling rate, separate collection of municipal waste (a) and circular material use rate. Years 2010-2020 (percentage values)



Source: Ispra; Istat, processing on Ispra data; Eurostat

(a) Data from 2016 to date are only partially comparable with previous years due to a variation in the calculation criteria of production and collection data.



<sup>2</sup> See <u>http://ec.europa.eu/eurostat</u>.

<sup>3</sup> See <u>http://ec.europa.eu/eurostat</u>.

In 2020, in Italy the recycling rate of MW reached 54.4% (+1.1 percentage points compared to 2019), confirming the progressive improvement that has started since 2010 (+17.7 percentage points). The recycling achieved was marginally below the 55% target set by the European Union for 2025 and above the 2020 target  $(50\%)^4$ , achieved since 2018.

In 2020, separate collection also recorded an improvement. The reduction in the volume of separately collected municipal waste (-151.5 thousand tonnes; -0.8%) due to the overall decrease in MW production corresponded to an increase of 1.7 percentage points in the incidence of separate collection of waste. In 2020, Italy, with 18.2 million tonnes of MW separately collected, reached 63.3% (+27.7 points compared to 2010), but has not filled yet the gap with the regulatory objectives, still standing at -1.7 p.p. below the 2012 target.

Territorial gaps tend to narrow over time, driven by improvements in the South and Islands (+32.4 p.p. over the last decade and +3.0 in the last year) and in the Centre (+32.0 and +1.4 respectively), compared to the North (+21.7 and +1.2). However, disparities remained high. In the northern area, the percentage of separate collection exceeded 70% (69% for the North-West and 73% for the North-East), while in the Centre (59%) and in South and Islands (53.6%; 55% for the South and 50% for the Islands) stayed at lower levels. In 2020, Autonomous Province of Trento, despite a slight decline in the last year (-0.8 p.p.), Veneto, Sardegna, Lombardia, Trentino-Alto Adige, Emilia-Romagna and Marche confirmed as the regions with the highest incidence of separate collection, reaching percentages higher than 70%, although Basilicata recorded the largest increase (+7.0 points). In 2020, Treviso and Mantova, close to 90%, maintained the primacy among Italian provinces.

## The incidence of hazardous waste on GDP has increased

Goal 12 of the 2030 Agenda adopts indicators on the generation and treatment of hazardous waste for the monitoring of target 12.4, aimed at significantly reducing the release of chemicals to air, water and soil, to minimise their adverse impacts on human health and on environment. In 2020, in Italy, hazardous waste (HW), amounting to 9.8 million tonnes, represented 6.7% of the total special waste generated by productive activities (147 million tonnes). The generation of hazardous waste has increased compared to 2014 (+1.05 million tonnes; +12%) and decreased compared to 2019 (around -306 tonnes; -3%).

The fall in the last year, pushed by the production rate slowdown determined by the pandemic emergency, was particularly intense in the manufacturing industry (-7.5%), with a high impact in terms of volume of HW (-282 thousand tonnes) due to the high weight of manufacturing in total national production  $(35.2\%)^5$ . Services, which accounted for 22.2% of hazardous waste, showed a -3.4% change (around -77 tonnes). The significant contraction in agriculture, forestry and fisheries (-53.4%) and the smaller contraction in construction (-2.7%) led to an overall reduction of 16 tonnes, due to the lower contribution of the two sectors to the generation of HW (0.05% and 3.9% respectively). Conversely, there was an increase in electricity, gas, steam and air conditioning supply (+4.1%), water supply, sewerage, waste management and remediation activities (+1.7%) and mining and quarrying (+1.2%). The growth of the waste mana-

<sup>4</sup> Directive (EU) 2018/851 sets targets by 2025 (55%), 2030 (60%) and 2035 (65%).

<sup>5</sup> Istat processing on Ispra data (see Ispra, Catasto dei rifiuti, https://www.catasto-rifiuti.isprambiente.it).





Source: Istat, processing on Ispra data

gement and remediation sector, responsible for 35.8% of HW, resulted in a positive balance of over 60 thousand tonnes<sup>6</sup>.

In 2020, the generation of hazardous waste was 164 kg per inhabitant. In 2018, the last year available for European comparison, Italy recorded per capita hazardous wastes significantly below the average value of EU27 (168 and 228 kg per inhabitant respectively)<sup>7</sup>. However, the ratio volume of hazardous waste produced to GDP shows an increasing trend (Figure 12.2), which, although influenced in 2020 by the collapse of GDP, demonstrates that the decoupling between economic activity and waste generation required by national and international legislation<sup>8</sup> for hazardous waste is not started yet.

# Domestic material consumption per capita has reached the minimum value in the last ten years, however the ratio of DMC to GDP remained at 2019 level

In 2020, domestic material consumption (DMC) contracted by 38.5 million tonnes compared to the previous year (-7.7%), due to the partial closure of some production activities. The ratio of DMC to population followed similar developments (-7.2%); the DMC to GDP ratio remained stable, influenced by the fall of gross domestic product (Figure 12.3).



<sup>6</sup> In 2020, most HW came from waste and sewage treatment (25 %). A share that cannot be classified in accordance with the European list of waste, which also includes end-of-life vehicles, electrical and electronic equipment, batteries and accumulators, was also relevant (23%). Following, products from chemical processes (13%), waste oils and liquid fuels (10%) and waste from construction and demolition operations (9 %). Waste from thermal processes (6%) and surface processing of metals and plastics (4%) were associated with lower impacts (see lspra, 2022, *Rapporto rifiuti speciali*. <a href="https://www.isprambiente.gov.it/en/publications/reports/report-on-waste-from-economic-activities-2022">https://www.isprambiente.gov.it/en/publications/reports/report-on-waste-from-economic-activities-2022</a>).

<sup>7</sup> See http://ec.europa.eu/eurostat.

<sup>8</sup> In line with the Waste Framework Directive (Directive (EU) 2018/851), the national waste prevention programme of the Ministry for environment, land and sea protection set a target by 2020 of reducing the production of hazardous waste by 10% per unit of GDP compared to 2010. In 2020, the ratio of special hazardous waste to GDP increased by around 30% compared to 2010 (see Ispra, 2022).

In 2020, material consumption reached its lowest level in the last decade, 458.7 million tonnes, with an overall saving of 230 million tonnes (-33%) compared to 2010. Over the same period, DMC measures - relative to GDP and population – dropped respectively from 0.40 to 0.29 tonnes per 1,000 euro and from 11,5 to 7.7 tonnes per capita. The decline in domestic material consumption per unit of output, which has been very pronounced during the second phase of the economic crisis (2012-2013), slowed down from 2015. Nevertheless, the drop consolidated during the economic recovery phase, leading to levels well below precrisis values (the DMC/GDP was equal to 0.46 tonnes per unit of GDP in 2007).

Compared with other European economies, while considering different national production structures and different weight of sectors with lower material consumption, Italy showed

Figure 12.3 - Domestic material consumption per capita and per GDP. Years 2010-2020 (a) (tonne per capita and tonne per 1,000 euro, chain-linked volumes)



Source: Istat, Material flow accounts (a) 2020 data are provisional.

a more advanced stage of decoupling between economic performance and pressures on the environment. In Italy, the DMC to GDP ratio has fallen by 27%, compared with an average change in EU27 of 11%<sup>9</sup>. In 2020, Italy achieved the third position in the descending ranking of the DMC to GDP ratio, with a value of 60% of the EU27 average (0.49 tonnes per inhabitant) and the second position for DMC per capita, equivalent to 63% of the average EU27 value (14.1 tonnes per inhabitant).

In 2018 territorial data show large differences, which reflect the heterogeneity of production activities too. Material consumption was lower in the Centre (7.2 tonnes per inhabitant and 0.23 tonnes per 1,000 euro) than in the North (9.1 and 0.26 respectively). The South and Islands presented a similar profile to the Centre in terms of DMC per inhabitant (7.3 tonnes per capita) and to the North for material consumption per unit of GDP (0.39 per 1,000 euro).

<sup>134</sup> 

<sup>9</sup> See <u>http://ec.europa.eu/eurostat</u>.

# Public administration reduced the social and environmental reporting and increased purchases that adopt minimum environmental criteria

The percentage of public institutions adopting social and/or environmental reporting fell to 15.6% in 2019-2020 (16.1% in 2016-2017), with a larger contraction in North-East and Islands (-2 percentage points). Centre and South revealed a moderate increase (+0.3 and +0.7 p.p.), led by Abruzzo (+2.2 p.p.), Molise (+2.1) Lazio and Campania (both +1.6) and Calabria (+1). Social and/or environmental reporting was more common in Emilia-Romagna, Umbria and Sicilia (above 20%), and less frequent in Piemonte, Lombardia and Veneto (below 13%).

In 2020, the percentage of public institutions that carried out at least one procedure for the purchase of goods and/or services adopting minimum environmental criteria was 26.7, up from 2017 (24.2%). Green purchases were most widespread in the North (30.9%), North-East (41.8%) in particular, and the Centre (27.4%), and less in the South (19.6%). The positive trend in the Autonomous Provinces of Trento (51.2%; +11.5 percentage points compared to 2017) and Bolzano (48.6%; +10.0 p.p.) and in Friuli Venezia-Giulia (34.7%; +8.5%) contributed to the high performance of the North-East. Sicilia, Liguria and Calabria were the only regions experiencing a decline. Public institutions that use Green Public Procurement less frequently were in Molise, Sicilia, Calabria and Basilicata.

## One in three enterprises produced innovation with positive impact on the environment

In 2018-2020, 37% of enterprises with at least 10 employees introduced at least one process or product innovation with positive impacts on the environment<sup>10</sup>. Almost half of the enterprises in extractive and manufacturing industries carried out innovative environmental activities (48% and 45% respectively). In the manufacturing, environmental innovation showed a heterogeneous distribution, with peaks of more than 69% for the manufacture of coke and refined petroleum products and lower percentages in the manufacture of paper and paper products (33.5%). In services, the share of companies innovating for the environment was lower (33.7%), reaching the maximum in transportation and storage (45.3%) and the minimum in information and communication (16.5%).

<sup>10</sup> The information, collected by the Istat survey on innovation in enterprises, refers to innovations that result – as a main objective or as a secondary outcome – in environmental benefits or a lower impact on the environment than the products and processes previously sold or used by the enterprises. The environmental benefits can be generated both at the production stage of a good or service and at the consumption/use stage of the goods or services by end users (individuals, other companies, public sector, etc.). It refers to a wide range of cases including, among the main ones, the reduction of consumption of raw materials and natural resources, the reduction of air, water, noise or soil pollution, the use of less polluting or hazardous materials than traditional materials, the use of renewable energy, the recycling of materials and waste and the recycling of water, and the extension of the life cycle of products.

## The challenge of measuring fossil fuel subsidies<sup>1</sup>

The indicator amount of fossil-fuel subsidies (production and consumption) per unit of GDPadopted for the monitoring of target 12.c.1 of 2030 Agenda, which aims to eliminate inefficient fossil fuel subsidies - can benefit from different national sources of information and experience on the subject.

For Italy, the measures used to calculate the indicator are derived from the "Catalogue of Environmentally Harmful and Environmentally Friendly Subsidies", the document published annually by the Ministry of Ecological Transition (MITE) since 2016. The Catalogue<sup>2</sup> identifies and quantifies the financial effects of fiscal and non-fiscal measures like subsidies for companies and citizens and cause environmental damage or benefit<sup>3</sup>. The data on the financial effects related to the fiscal measures have been produced thanks to the collaboration with the Ministry of Economy and Finance, Department of Finance, which already takes care of the "Annual Report on Tax Expenditures". Many of these items are classified as fossil fuel subsidies by the MITE Catalogue.



Figure 1 - Environmentally harmful subsidies and fossil fuel subsidies. Years 2016-2020 (N. and million euro)

The fourth edition of the Catalogue identified, for the year 2020, 180 measures with a total financial effect of 54.2 billion euro. Among them, 60 were classified as environmentally harmful subsidies (EHS), amounting to 20.6 billion euro, or 38% of the total (Figure 1). Most of the EHS - 40 measures - were fossil fuel subsidies (FFS), whose financial effect exceeded 13 billion euro (63% of the total of EHS). Compared to 2016, the number of EHS increased by 3, while that

<sup>1</sup> This section was edited by Gionata Castaldi (Ministry of the Economy and Finance) and Aldo Ravazzi (Ministry of Environment and Energy Security) with contributions by Paola Ungaro.

<sup>2</sup> Established with the so-called "Environmental Annex" to the Budget Law (Collegato Ambientale, L.221/2015, art. 68, Law on green economy and resource efficiency), the document is drawn up by MITE which makes use of the contribution by research centres, Ministries and public institutions. It has become an important milestone NON MI PIACE PONT OF REFERENCE for reflection for the Government, public opinion and the scientific community (https://www.mite.gov.it/sites/default/files/archivio/allegati/sviluppo\_sostenibile/CSA\_quarta\_edizione\_29\_12\_21.pdf).

<sup>3</sup> Referring to OECD definitions, the Catalogue defines an environmentally harmful subsidy as a measure that, ceteris paribus, increases production levels through increased use of the natural resource resulting in an increase in the level of waste, pollution and exploitation of the natural resource, or a support measure that increases the exploitation of resources and damages biodiversity. Environmentally friendly subsidies are defined as measures whose primary objective includes environmental protection or sustainable management of resources.

of FSS by 1. In terms of financial impact, after the growth phase observed between 2016 and 2019, 2020 marked a contraction of 3.9 billion euro for EHS (-15.9%) and 2.0 billion for FFS (-13.3%), mainly due to the reduction in economic activity following the COVID-19 pandemic. In 2020, fossil fuel subsidies accounted for 0.68% of GDP, down 0.06 percentage points from the previous year<sup>4</sup>.

The Italian commitment in estimating fossil fuel subsidies, and in general environmentally harmful subsidies, is aligned with that by other European countries (France, Germany, Sweden, Switzerland, Finland, Ireland), by the international intergovernmental community (OECD, International Energy Agency, International Renewable Energy Agency, International Monetary Fund, World Bank) and global international initiatives (International Institute for Sustainable Development's Global Subsidies Initiative, Friends of Fossil Fuel Subsidy Reform, Statistical Division of the United Nations - London Group on Environmental Accounting, Overseas Development Institute, Green Budget Europe). Italy also underwent the G20 Peer Review exercise on Fossil Fuel Subsidies (object of G7 and G20 commitments) in 2018-19 (after China and USA, Germany and Mexico, and in twinning with Indonesia). Our country has also actively participated in the Expert Group for the definition of the SDG indicator 12.c.1 led by UNEP (i.e. the UN "guardian" of the indicator itself).

At international level, fossil fuel subsidies continue to be large: in 2020, despite a decrease of 10% due to the slowdown in economic activity for COVID-19, the financial effect, estimated in a prudent and conservative way, amounted to 185 billion USD for 50 emerging and developed economies (Figure 2). The most subsidised sector was transport, followed by fossil fuel production. Such a level of subsidies risks placing countries in a lock-in effect with respect to the dependence on fossil fuels, hindering the necessary investments in clean energy sources and energy efficiency.



#### Figure 2 - Fossil fuel subsidies in 50 economies, by sector. Years 2010-2020 (billion dollars)

Source: OECD



<sup>4</sup> Many of the measures included in the indicator, however, are not fiscal expenditures, but subsidies based on the broad definition provided by Parliament with the aforementioned "Environmental Annex". These include measures with significant financial effects.

2022 SDGs Report. Statistical information for 2030 Agenda in Italy



The relevance of the efforts made to provide information for target 12.c indicates the importance of finding economic and statistical definitions that look at the substance of the phenomena. The convergence of the scientific community on the ongoing and potential effects of climate change makes difficult to defend the idea of privileged tax treatment that encourages, in some sectors or periods, the consumption of fossil fuels, especially in the light of the availability of other fiscal instruments - including anti-crisis measures (anti-pandemic or against economic effects of wars) - to deal effectively, even in times of emergency, with the necessary social and economic solidarity towards the sectors that deserve it (e.g. reduction of the tax burden on labour, environmental checks, direct subsidies). The adoption of such instruments, in several cases also by Italy, allows to provide a correct price signal, without neglecting the environmental value of production, investment and consumption behaviours and, in cases where the revenue recovered is reused, without further burdening the public debt.



## **GOAL 13**

TAKE URGENT ACTIONS TO COMBAT CLIMATE CHANGE AND ITS IMPACTS<sup>1</sup>

## In brief

- In Europe, greenhouse gas emissions continued to decrease in 2019 with a reduction of 24% compared to 1990. Italy was among the best five EU27 countries that provided the largest contribution to this reduction.
- In 2020, the greenhouse gas emissions of the Italian economy decreased by 9.8% compared to the previous year, also due to the slowdown of the economic activity determined by the COVID-19 containment measures.
- Households, which generate a quarter of Italy's emissions, in 2020 reduced their emissions more than productive activities.
- There is a high risk of landslides and floods in many Italian regions, as a consequence of climate change too. In 2020, 2.2% of residents in Italy was living in territories with high or very high landslide hazard and 11.5% in territories with medium flood hazard.
- In 2021, citizens' concern about climate change decreased compared to 2020, although it was still the most widespread concern of Italians among environmental issues.

The statistical measures released by Istat for Goal 13 are twenty-one and refer to three UN-IAEG-SDGs indicators (Table 13.1).



<sup>1</sup> This section was edited by Giovanna Tagliacozzo, Raffaella Chiocchini, Elisabetta Del Bufalo and Silvia Zannoni.

				VARIATIONS			
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	I	CONVERGENCE AMONG REGIONS Compared to 10 years before
13.1.1	Number of deaths, missing persons and directly affected persons attributed to disasters per	r 100,000 populatio	on				
Populatior	at risk of flood (Ispra, 2020, percentage values)	National context	11.5		(a)	(b)	⇒⇐
Populatior	n at risk of landslides (Ispra, 2020, percentage values)	National context	2.2		(a)	(b)	⇒∈
Resident p	oopulation in flood risk areas per km² (Ispra, 2020, inhabitants per km²)	National context	22.57		(a)	(b)	⇒⇐
Resident p	oopulation in landslides risk areas per km² (Ispra, 2020, inhabitants per km²)	National context	4.32		(a)	(b)	⇒⇐
Deaths and	d missing persons for floods (Ispra, 2020 N.)	Partial	11				
Deaths an	d missing persons for landslides (Ispra, 2020, N.)	Partial	6				
Injured pe	rsons for floods (Ispra, 2020, N.)	Partial					
Injured pe	rsons for landslides (Ispra, 2020, N.)	Partial	22				
Global ave	rage temperature anomalies over land and in Italy (Ispra, 2020, degree Celsius)	National context	1.44 Global 1.54 Italy				
Impact of I	forest fires (Istat, Processing on State Forestry Corps data, 2021, per 1,000 km²)	National context	5.0				$\Leftarrow \Rightarrow$
Number of Volcanolog	f the seismic movements (>= 4.0) by magnitude class (National Institute of Geophysics and gy (Ingv), National Earthquake Centre, 2021, N.)	National context	11				
13.2.2	Total greenhouse gas emissions per year						
Greenhous	se gas emissions (GHG) inventory totals (UNFCCC) (Ispra, 2020, tonne $\rm CO_2$ equivalent)	Identical	382,339,595				
Balance be and the en tonne CO <sub>2</sub>	etween the emissions generated in the Rest of the World by units that are resident in Italy nissions generated on the national territory by units that are not resident in Italy (Istat, 2020, equivalent)	Identical	10,991,897				
Greenhous	se gas emissions (GHG) accounts totals (Istat, 2020, tonne CQ equivalent)	Identical	393,331,492				
Emissions	of $\mathrm{CO}_2$ and other greenhouse gasses (Istat-Ispra, 2020, tonne per inhabitant)	National context	6.6				
National P	M2.5 emissions (Ispra, 2020, thousand tonnes)	National context	133.2				
National S	Ox emissions (Ispra, 2020, thousand tonnes)	National context	81.9				
National N	Ox emissions (Ispra, 2020, thousand tonnes)	National context	570.6				
National N	${ m H_3}$ emissions (Ispra, 2020, thousand tonnes)	National context	362.6				
National C	OVNM emissions (Ispra, 2020, thousand tonnes)	National context	885.4				
13.3.1	Amounts provided and mobilized in United States dollars per year in relation to the continue	ed existing collecti	ve mobilization goal	of the \$100bi	llion commitme	nt thro	ough to 2025
Concern fo	or climate change (Istat, 2021, percentage values)	Proxy	66.5				$\Leftarrow \Rightarrow$
Legend	IMPROVEMENT	⇒⇐	CONVERGENCE		Notes (a) Variation cor (b) Variation cor	npare npare	ed to 2015 ed to 2017
$\bigcirc$	STABILITY	=	STABILITY				
	DETERIORATION	$\Leftrightarrow$	DIVERGENCE				
	NOT AVAILABLE / NOT SIGNIFICANT						

## Table 13.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

## Greenhouse gas emissions decreased in Europe and in Italy

In Europe, greenhouse gas emissions are decreasing. In 2019, they amounted to 3.7 billion tonnes of  $CO_2$  equivalent<sup>2</sup>, 3.8% less than the previous year and 24% less compared to the base year 1990 (Figure 13.1). The largest contribution to reducing emissions came from the countries responsible for more than half (56.6%) of the European emissions observed between 1990 and 2019, Germany, France, Italy and Poland, which, together with Romania, recorded changes among -17.3% of Poland and -57.2% of Romania, even lower than 2018 levels. Spain, a country with a significant weight on total European emissions, despite a decreasing trend from 2008, still recorded in 2019 emissions 13.2% higher than those of 1990.

Figure 13.1 - Greenhouse gas emissions (a) CO<sub>2</sub> equivalent in some European countries. Years 1990-2019 (fixed base index numbers, 1990=100)



Source: Eurostat (a) Including international aviation.

In 2019, in EU27 countries, per capita greenhouse gas emissions<sup>3</sup> were equal to 8.4 tonnes of CO<sub>2</sub> equivalent, lower than 0.3 tonnes compared to 2018. European countries reduced per capita value with few exceptions. In the last year, Germany fell from 10.7 to 10.1; Spain from 7.5 to 7.1 and France from 6.9 to 6.7 tonnes of CO<sub>2</sub> equivalent. Italy recorded a smaller decrease, from 7.3 to 7.2 CO<sub>2</sub> equivalent, while the provisional estimate for 2020<sup>4</sup> is equal to 6.6 tonnes per inhabitant, a value conditioned by the COVID-19 containment measures.

In 2020, national inventory<sup>5</sup> greenhouse gas emissions in our country amounted to 382,340 thousand tonnes of  $CO_2$  equivalent, 8.6% less than the previous year. The reduction of greenhouse gases into the atmosphere by production activities and hou-



<sup>2</sup> Measure used for monitoring Goal 13 in Europe (<u>https://ec.europa.eu/eurostat/web/sdi/climate-action</u>). The GHG emissions used for this purpose exclude Land Use, Land Use Change and Forestry (LULUCF) and international shipping, but include international aviation.

<sup>3</sup> See note 2.

<sup>4</sup> Provisional data for 2020 according to Istat air emissions accounts.

<sup>5</sup> Total greenhouse gases according to the national inventory of emissions, produced by Ispra and consistent with the communication for Italy under the United Nations Framework Convention on Climate Change (UNFCCC). This measure of emissions, which excludes "Land Use, Land Use Change and Forestry" (LULUCF), shipping and international aviation, responds to the territory principle.

seholds<sup>6</sup> was more pronounced, going from 436,041 thousand tonnes of  $CO_2$  equivalent in 2019 to 393,331 in 2020 (Figure 13.2). The contraction in total accounts emissions, equal to -9.8%, was deeper than the reduction of GDP, which falls of 9.0%. Households, which account for a quarter of total greenhouse gas emissions, reduced their emissions by 13% between 2019 and 2020, while production activities moderated them by 8.7%. The manufacturing sector (-2.8 percentage points) along with transport and storage (-2.7 p.p.) and, to a lesser extent, with the electricity, gas steam and air conditioning supply sector were the ones that contributed more to the decrease in emissions (-1.3 percentage points).

Figure 13.2 - Greenhouse gas emissions (GHG) accounts totals, by industry and households, and GDP. Years 2010-2020 (a) (thousands of tonnes of CO<sub>2</sub> equivalent (left) and fixed base index numbers 2010=100 (right)



Source: Istat, Air emissions accounts (a) Provisional data 2020.

# A substantial share of population live in territory exposed to high risk of landslides and floods

In 2020, 2.2% of the resident population in Italy were living in territories with high or very high landslide hazard and 11.5% in areas with medium flood hazard. Valle d'Aosta was the region with the largest share of the population exposed to the risk of landslides (12.1%), followed by Basilicata (7%), Molise (6.1%), Campania (5%), Liguria (5.9%) and Toscana (4.2%, Figure 13.3a). The risk of floods involved more than half of the population

<sup>6</sup> Data from Istat air emissions accounts, consistent with the principles and standards of national economic accounts and referring to resident units. The difference between the two measurements (Istat - greenhouse gas according to the air emissions accounts and Ispra - greenhouse gas according to the national inventory of emissions) is due to the balance between the emissions of resident units operating abroad for transport by road, air and sea (which are included in the calculation of Italy's GDP even when carried out abroad) and the emissions of non-resident units operating on the national territory for the same activities (which are instead excluded).

of Emilia-Romagna (62.5%), a quarter of Toscana (25.5%) and the Autonomous Province of Trento (25.9%), and 17.4% in Liguria (Figure 13.3b).

Figure 13.3a - Population at risk of landslides, by region.<br/>Year 2020 (percentage values)Figure 13.3b - Population at risk of flood, by region. Year<br/>2020 (percentage values)





Source: Ispra

Source: Ispra

## Concern about climate change decreased among citizens

Citizens' concern about climate change, measured by the share of people aged 14 and over who indicate the greenhouse effect or climate change among the top 5 environmental concerns<sup>7</sup>, decreased in 2021 by almost 4 percentage points compared to 2020, settling at 66.5%.

The indicator showed a steady reduction in the last three years: in 2019 climate change was among the top 5 concerns for 71.0% of citizens, and in 2020 for 70.0%. The decline in the last two years was probably due to the pandemic period, which has polarised the attention and fears of the population towards other problems. From 2012 to 2018, however, it was possible to detect an increasing trend.





Source: Istat, Survey on Aspects of dayly life

In the South and Islands concern about climate change was less widespread than in the northern and central regions, 63.9%, 67.6% and 68.3% respectively (Figure 13.4). The attention towards climate change was substantially homogeneous, both by age and by gender, even though, among the youngest age classes, girls showed a higher level of concern.

<sup>7</sup> Respondents were asked to indicate the first 5 concerns in a list of 13 environmental problems: 1. Increased greenhouse effect, ozone hole; 2. Extinction of some plant/animal species; 3. Climate change (temperature rise, variation of rainfall regime); 4. Waste production and disposal; 5. Noise pollution (noise); 8. Air pollution; 7. Soil pollution (eg caused by pesticides); 8. Pollution of rivers, seas, lakes, groundwater; 9. Hydrogeological instability (floods, floods, landslides, avalanches); 10. Man-made disasters (industrial accidents, leaks/spills of oil, oil and other toxic or radioactive substances, etc.); 11. Destruction of forests; 12. Electromagnetic pollution (caused by radio-TV and telephone repeaters, high voltage power lines); 13. Ruin of the landscape caused by excessive building construction; depletion of the world's natural resources (water, minerals, oil, etc.).

## Implications of climate change for agriculture<sup>1</sup>

The frequency of drought periods and extreme rainfall events, as an outcome of climate change, is increasing considerably in Italy, with a significant impact on agriculture. To monitor these phenomena, specific indices have been set up, such as the drought index and the heavy precipitation index. The Standardised Precipitation Evapotranspiration Index (SPEI) is a drought index to measure the water availability that derives from the monthly climatic water balance, calculated as the difference between the total precipitation and the reference evapotranspiration<sup>2</sup>. In particular, the SPEI6, calculated on a 6-month time scale, has been assessed as suitable for describing drought phenomena in agriculture. When the index falls beyond -1, drought conditions are recorded, which reach extreme levels below -2.





Source: CREA-Istat, processing on ERA5 data (Copernicus programme) (a) Values between -1 and 1 indicate "normal" conditions.



<sup>1</sup> This section was edited by Roberta Alilla, Flora De Natale, Barbara Parisse (CREA - Council for Agricultural Research and Economics) with contributions by Giovanna Tagliacozzo.

<sup>2</sup> The SPEI index (Vicente-Serrano S.M., Begueria S., Lopez-Moreno J.I., 2010. A Multiscalar Drought Index Sensitive to Global Warming: The Standardised Precipitation Evapotranspiration Index. *J. Climate.* 23: 1696-1718) is based on the comparison between the climatic water balance values recorded and their trend shown by the historical series available, in this case from 1981 to 2021. SPEI values ≤ -1 indicate drought conditions, while SPEI values ≥ 1 indicate humid conditions, i.e. water surplus compared to the long-term average trend. The index can be calculated on different time scales, depending on the objectives of the analysis: for example, a 6-month scale is adopted in agriculture. To focus on the most critical conditions, Figure 1 represents the worst SPEI6 values reached by at least 30% of the regional territory, i.e. equal to the thirty-eight percentile (Bachmair S., Kohn I., Stahl K., 2015. Exploring the link between drunk indicators and impacts. *Natural Hazards and Earth System Science.* 15: 1381-1397).

At national level, the SPEI6 drought index showed a period of "moderate drought" (-1.5 < SPEI6  $\leq$  -1) for 2021 which lasted from July to October, when the lowest value reached was equal to -1.3 (Figure 1). In particular, Lazio, Abruzzo, Marche, Molise, Campania and Puglia experienced persistent drought, with higher intensity in autumn, reaching peaks of "severe drought" (-2 < SPEI6  $\leq$  -1.5) in September, which also involved Umbria and Basilicata in October. In the North-East, humidity conditions from moderate to severe (1  $\leq$  SPEI6 < 2) characterised the first part of the year, conversely, in the North-West, frequent moderate drought events affected Piemonte, during almost the entire growing season, and conditions of "severe drought" (SPEI6  $\leq$  -1.5) also involved the Valle d'Aosta in April. "Normal conditions" (-1 < SPEI6 < 1) characterised the North, the Islands and Calabria. "Moderate drought" affected some regions (Friuli Venezia-Giulia, Emilia-Romagna, Toscana, Umbria and Lazio) also in November. On the opposite, in Sicilia, at the end of the year, a "moderate water surplus" (1  $\leq$  SPEI6 < 1.5) was reached.

The index for heavy precipitation (R95pTOT) measures the annual amount of daily rainfall (in mm) exceeding the ninety-fifth percentile threshold<sup>3</sup>, with reference to each data grid cell. In Italy, in 2021, this index was equal to 200 mm, corresponding to 22% of the annual total precipitation (Figure 2). A similar phenomenon was measured in the previous two years, when heavy rainfall amounted to around 300 and 250 mm respectively for 2019 and 2020 (in both cases corresponding to 27% of the annual total precipitation).





Source: CREA-Istat, processing on ERA5 data (Copernicus programme)

The R95pTOT index was higher than the national value (200 mm) in 13 regions, reaching the maximum values in Campania, (419 mm, equal to 32% of the annual total) and in Friuli Venezia-Giulia (355 mm, equal to 22% of the annual total). The lowest values, below 100 mm of heavy precipitation, was observed in Toscana, Emilia-Romagna and Puglia. The share of heavy precipitation on the annual total exceeded 25% in 6 regions: Campania, Marche, Sicilia, Calabria, Abruzzo and Lombardia.

<sup>3</sup> The R95pTOT index accounts for precipitation related to very wet days, defined as being higher than the 95th percentile of "wet days" (R ≥ 1mm) during the 1981-2010 reference period. The values are expressed as a percentage share of the annual total precipitation too. The index belongs to the list of indices (<u>https://surfobs.climate.copernicus.eu/userguidance/indicesdictionary.php</u>) defined by the Expert Team on Climate Change Detection and Indices (ETCCDI).


**GOAL** 14

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT<sup>1</sup>

#### In brief

- In the period 2015-2020, the median value of marine litter along the Italian coast was 409 items per 100 metres of beach. The highest concentrations were located in the Adriatic Sea sub-region (535) and the Western Mediterranean (427); the lowest concentration were located in the Ionian Sea and Central Mediterranean (250). Between 2015 and 2020, Emilia-Romagna and Campania recorded the most marked reductions of beached marine litter per 100 metres; on the other Friuli-Venezia Giulia and Abruzzo showed the largest increases of beached marine litter.
- In 2021, marine areas falling into the Natura 2000 Network covered 13.4% of Italian territorial waters, with an extension of 20,717 km<sup>2</sup>. Between 2020 and 2021, the area of Salina Island Seabed was extended by 309 km<sup>2</sup> (both terrestrial and marine areas largely overlapping with the Aeolian Archipelago). Over the period 2014-2021, the coverage of protected waters more than tripled (from 3.8% to 13.4%), although in 2021 it was still very limited.
- In 2021, 10.6% of the overall marine areas national, regional and Natura 2000 Network (net of their spatial overlaps) – were protected, in compliance with target 11 of the Aichi Biodiversity targets which are aimed to preserve biodiversity. Significant progress has been made in full implementation of the targets for Natura 2000 Network sites, since 97.4% of marine and terrestrial Sites of Community Importance have been designated Special Areas of Conservation.
- In 2020, Italy was very close to achieve the goal set by the Bathing Water Directive, with 97.3% of marine coastal bathing waters presenting at least sufficient quality levels (4,719 out of 4,848 sites), although there still was a small share (1.7%) of poor quality or not included into the sample (0.9%).

The statistical measures released by Istat for Goal 14 are five and refer to two UN-IAEG-SDGs indicators (Table 14.1).



<sup>1</sup> This section was edited by Antonino Laganà with contributions by Tiziana Baldoni and Giovanna Tagliacozzo.

Table 14.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to the previous year and convergence among regions

				VARIATIONS			CONVERGENCE
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	1	Compared to the previous year	AMONG REGIONS compared to 10 years before
14.1.1	Beached marine litter						
Beached n	narine litter (Ispra, 2020, N. per 100 metres beach lenght)	National contest	311		(a)		$\Leftrightarrow \Rightarrow$
14.4.1	Proportion of fish stocks wirthin biologically sustainable levels						
ish stock	in over exploitation (Western Mediterranean) (Ispra, 2018, percentage value)	Proxy	92.7				
14.5.1	Coverage of protected areas in relation to marine areas						
Coastal ba	thing waters (Istat, processing on Ministry of Health data, 2019, percentage values)	Proxy	65.5		(b)		$\Rightarrow \Leftarrow$
Marine pro	tected areas EUAP (Ministry of the Ecological Transition, 2019, km <sup>2</sup> )	Partial	3.076		(c)		
Marine are	as included in the network Natura 2000 (Ministry of the Ecological Transition, 2021, km <sup>2</sup> )	Partial	20.717		(d)		
egend					Note	es	
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGENCE		(a) Variation compared to 2015 (b) Variation compared to 2013 (a) Variation compared to 2012		
$\bigcirc$	STABILITY	=			(d) Variation con		npared to 2012
	DETERIORATION	$\Leftrightarrow \Rightarrow$	DIVERGENCE				
	NOT AVAILABLE / NOT SIGNIFICANT						

.

#### A large amount of marine litter is spread along Italian coasts

In coastal municipalities live more than one-third of the Italian residents, on average 357 inhabitants per km<sup>2</sup>, compared to 160 inhabitants of non-coastal territories. Along the coasts, the higher density of human activities, also due to tourism, impact on the abundance of beached marine litter on the territory. In 2021, the density of tourists<sup>2</sup> in coastal areas was five times higher than in non-coastal areas (2,772 and 536 presences per km<sup>2</sup> respectively).

In the period 2015-2020, marine litter on beaches in Italy was equal to 409 items per 100 metres<sup>3</sup>, with some variations between the sub-regions: Adriatic Sea (535 litter items/100 m), Western Mediterranean (427), Ionian Sea and Central Mediterranean (250). Marine litter was much higher than the threshold value of 20 litter items/100 m to define a beach in good environmental condition according to the European legislation<sup>4</sup>. It was also higher than the overall average of 133 of EU countries. Along Italian coastlines, one-third of marine litter included single-use plastic objects, which amounted to 121 litter items/100 m in 2015-2020. More than half of the coastal regions showed a decrease in beached marine litter between 2015 and 2020. The most pronounced reductions were in Emilia-Romagna and Campania, respectively 1,138 litter per 100 metres in 2015 and 279 in 2020, and 893 in 2015 and 133 in 2020. Conversely, Friuli-Venezia Giulia (258 litter items/100 m in 2015 and 514 in 2020) and Abruzzo (812 in 2015 and 1,045 in 2020) recorded the largest increases (Figure 14.1).

---- Italy 2015-2020 (median) - UE 2015-2016 (median) Objective UE (20 litter items/100 m) 2020 2015 1200 1000 800 600 400 200 0 Giulia ADFUZZO Marche Latic Liguria Puglie Sardegre Molis EmilaRonal Campar TOSCA Fril

Figure 14.1 - Beached marine litter, by region. Year 2015-2020 (N. per 100 metres beach lenght)

Source: Istat, processing on Ispra data

- 2 Tourist density is the ratio between the tourism presences and the surface of the surveyed territories. See National Institute of Statistics - See Istat. 2022 Anthropic activities and coastal health. Rome: Istat. <u>https://www.istat.it/it/</u> <u>archivio/274891</u>.
- 3 The number of beached marine litter and single-use plastic objects in Italy is calculated as a median of the years 2015-2020.
- 4 The threshold value equal to the 15th percentile of the total marine litter of the 21 European countries analysed (20 litter items/100 m) to define a beach to be in good environmental status is established in the European Commission's Implementation Guide under the Marine Strategy Framework Directive. See European Union 2020. A European Threshold Value and Assessment Method for Macro Litter on Coastlines. Luxembourg: European Union.





#### Slight increase in marine areas of the Natura 2000 Network

The preservation and expansion of marine protected areas have been at the heart of measures to combat climate change in the EU Biodiversity Strategy for 2030 and in the National Recovery and Resilience Plan (NRRP)<sup>5</sup>. In 2021, marine areas falling into the Natura 2000 Network<sup>6</sup> covered 13.4% of Italian territorial waters, with an extension of 20,717 km<sup>2</sup>. Between 2020 and 2021, the enlargement of the Special Protection Area (SPA) of Salina Island Seabed, both terrestrial and marine although largely overlapping with the SPA of the Aeolian Archipelago, recorded an overall increase in protected areas of 309 km<sup>2</sup> of territorial water. Between 2014 and 2018, the Italian sea protected area of the Natura 2000 Network remained substantially stable; in 2019 and 2020 they recorded an yearly doubling (from 3.8% in 2018 to 7.2 in 2019 and 13.4 in 2020)<sup>7</sup>, and finally recorded a slight increase in 2021 (1.5%). The largest increases were recorded in the Islands (12.7 percentage points), followed by the Centre (12 percentage points), the North-East (8.2 percentage points), and the South (5.6 percentage points).The North-West did not achieve any variation (Figure 14.2). The enlargements of protected area between 2018 and 2021 closed the infringement procedure opened by the European Commission against Italy<sup>8</sup>.





Source: Ministry of the Ecological Transition

- 5 NRRP, earmarked 100 million euro for the digitisation of national parks and marine protected areas (Mission 2, component 4, intervention 3, investment line 3.2).
- 6 The Natura 2000 Network is an ecological network including two types of territories: Sites of Community Importance (SCIs), identified by Member States in accordance with the Habitats Directive 92/43/EEC, governed by procedures for the adoption of articulated measures. These procedures can be summarised in three stages: in the first, Sites of Community Importance, pSCIs, are identified and proposed; in the second, pSCIs are designated SCIs; in the third, they are designated Special Areas of Conservation (SACs) by each Member State, where the conservation measures necessary to maintain or restore natural habitats are applied. This procedure must be completed within six years, unlike Special Protection Areas (SPAs), established under the Birds Directive 79/409/EU and subsequent Directive 147/2009/EU, which are designated by each Member State and automatically become part of the network.
- 7 See National Institute of Statistics Istat. 2021. SDGs 2021 Report. "Statistical information for the 2030 Agenda in Italy. Rome: Istat: <a href="https://www.istat.it/en/archivio/266473">https://www.istat.it/en/archivio/266473</a>.
- 8 Procedure opened by the European Commission in 2019, for the shortage of marine sites in the Natura 2000 Network (EU-Pilot 8348/16/ENVI).

In 2021, in accordance with the area definition of the World Database on Protected Areas (WDPA), national, regional and Natura 2000 Network<sup>9</sup> marine protected areas (net of their spatial overlaps<sup>10</sup>) were equal to 57,094 km<sup>2</sup>, 10.6% of Italian marine coastal waters (they were 8.7% in 2019), in line with Aichi target 11<sup>11</sup> (Figure 14.3).

Figure 14.3 – Marine protected areas. Year 2021 (km<sup>2</sup>)



Source: World Database on Protected Area (WDPA)

Moreover, the tools to plan and manage these areas (plans, regulations, specifications) has been analysed to assess their effectiveness in protecting biodiversity. In 2021, there have been recorded relevant advancements for the full implementation of the Natura 2000 Network: 2,297 (97.4%) out of 2,358 SCIs (both marine and terrestrial), have completed the EU process to be designated Special Areas of Conservation (SACs). On the other hand, the various tools for the management of the 31 marine protected areas are still underused. In 2020, 21 of the 31 implementing regulations have been released (the last one in 2017) and 10 are still at the preliminary stage, while only 18 of the 31 supplementary regulations have been approved.



<sup>9</sup> The World Database on Protected Areas considers 431 marine protected areas (12 international, 62 national and 357 regional) divided into: SACs (238), SPAs (80), marine reserves and nature areas (29), SCIs (28), nature reserves (13), Rasmar sites (12), SPAs Barcelona Convention (11), national, regional parks and reserves (13), other areas (6), and a part of the Pelagos Sanctuary (area of 87,500 km<sup>2</sup> between Italy, Monaco and France).

<sup>10</sup> Marine protected areas may have various spatial overlaps between them (from partial/total overlap to complete separation); in the case of overlap, the joining of areas shall be taken into account.

<sup>11</sup> The Aichi Biodiversity targets, adopted in 2010 by the United Nations on biodiversity, called for the protection of at least 17% of terrestrial and inland waters and 10% of coastal and marine areas by 2020.

# Along the Italian coast, 88.7% of sites were assessed as excellent marine and transitional waters

The analysis of marine coastal and transitional<sup>12</sup> bathing waters, according to the Bathing Water Directive<sup>13</sup>, provides a useful framework for assessing untreated water reaching the sea<sup>14</sup>. In 2020 in Italy, in the 15 coastal regions, 4,299 out of 4,848 monitored sites (88.68%) were classified as excellent status<sup>15</sup>, 290 with good (5.98%), 130 sufficient (2.68%), 84 poor (1.73%) and 45 sites with insufficient sampling (0.93%). Italy was very close to the target set by the Directive aimed to ensure that all bathing water sites conform to at least sufficient quality and to increase the number of those in good and excellent classes.



Figure 14.4 - Marine-coastal waters, by water quality status. Year 2020 (percentage values)

Source: Istat, processing on EEA data

<sup>12</sup> For bathing waters, only coastal and transitional marine waters (brackish waters such as lagoons, coastal ponds, and estuarine delta areas) were considered, excluding inland waters.

<sup>13</sup> The Bathing Water Directive defines bathing waters as "areas in which the competent authorities provide for an adequate number of people to bathe and where there are no permanent prohibitions" (Directive 2006/7/EC). The subsequent Implementation Decree of 30 March 2010 classifies water quality as "excellent", "good", "sufficient" and "poor", depending on the presence of microbiological parameters (intestinal enterococci and escherichia coli). There are also other factors of health concern that may lead to preventive measures in the case of the presence of values considered to be a health risk.

<sup>14</sup> It is estimated that about 70% of the resident population (42.3 million inhabitants) is connected to sewage treatment plants and 339 municipalities are overall without the service or partially purified. See Istat. 2022. "Istat water statistics. Years 2019-2021". Statistiche Report. Rome: Istat. <u>https://www.istat.it/en/archivio/268982</u>.

<sup>15</sup> Data in line with EU countries of 88.4%, corresponding to 12,690 bathing waters.

There were many compliant coastal sites, 4,719 (97.3% of the total monitored), although there was still a proportion with poor or unsampled quality. The region that met the strictest standards (excellent quality) was Puglia (98.7%), followed by Sardegna (98.5%). Conversely, Abruzzo recorded the lowest share (72.6%). In almost all regions there was still a minimal presence of sites with poor or unclassified waters, which prevented the full achievement of the Directive's target. In Veneto, Emilia-Romagna, Puglia and Basilicata, only waters of excellent, good and sufficient quality were counted (Figure 14.4).



#### The problem of marine micro-litter<sup>1</sup>

Italy must evaluate not only the abundance and composition of marine litter on the coast, in the surface layer of the water column, and in seabed sediment, but also of micro-litter in the surface layer of the water column, in accordance with the implementation of the Marine Strategy Framework Directive 2008/56/EC, (MSFD) to define the good environmental status in relation to Descriptor 10 (marine debris).

Micro-litter is made up of particles smaller than 5 mm of anthropogenic origin (solid, synthetic or with a polymeric structure). It is very difficult to establish the origin of the micro-litter once it enters the environment. The microparticles in the sea can have a double origin: primary and secondary. The primary include the microparticles such as pellets and micro-granules used in cosmetics or abrasive cleaning products produced by industries. The secondary come from the fragmentation and degradation of macro litter. Italy has been carrying out monitoring programmes on micro-litter in the surface layer of the water column since 2015.

At the European level, the threshold value for defining the good environmental status on marine micro-litter has not yet been established. Although we do not have yet sufficiently long time series to evaluate the trends in the concentration of micro-litter, it is feasible to have a first baseline on the level of pollution. Basing on the processing of the data on the concentration of micro-litter on the surface of the water column in the period 2015-2020<sup>2</sup>, the spatial concentration of micro-waste shows an almost homogeneous distribution in the three sub-regions considered, with a median density of microparticles in our seas equal to 0.04 microparticles/m<sup>2</sup> or 40.000 microparticles/km<sup>2</sup> (Table 1).

### Table 1 - Micro-litter distribution in the surface layer of the water column. by subregion. Years 2015-2020 (microparticles/m<sup>2</sup>)

SUBREGION	1° quartile (microparticles/m²)	Median (microparticles/m <sup>2</sup> )	3° quartile (microparticles/m²)	Variance (microparticles/m <sup>2</sup> )	Coefficient of variation	N
Adriatic Sea	0.02	0.04	0.13	0.03	0.25	507
Ionian Sea and Central Mediterranean	0.02	0.04	0.10	0.02	0.21	273
Western Mediterranean	0.02	0.05	0.12	0.02	0.21	841

Source: Ispra

Microplastics can have an impact on marine organisms through direct or involuntary ingestion, thus entering the food chain: more than 50% of fish ingest microplastics<sup>3</sup>.

Currently the main source of microplastics in our seas is the degradation of plastic objects produced in the 1990s and, in case the future release of plastic into the sea does not stop, in 2050 the concentration of microplastics in the sea will be four times the current one<sup>4</sup> (Figure 1).

<sup>1</sup> This section was edited by Tomaso Fortibuoni, Marco Matiddi, Raffaella Piermarini, Francesca Ronchi, Cecilia Silvestri (ISPRA) with contributions by Antonino Laganà.

<sup>2</sup> See Italian Institute for Environmental Protection and Research - ISPRA. 2021. Stato dell'Ambiente 95/2021 in Annuario dei dati ambientali 2020. Roma: ISPRA.

See Sbrana, A., Valente, T., Scacco, U., Bianchi, J., Silvestri, C., Palazzo, L., De Lucia, G. A., Valerani, C., Ardizzone, G., Matiddi M. 2020. "Spatial variability and influence of biological parameters on microplastic ingestion by Boops boops (L.) along the Italian coasts (Western Mediterranean Sea)". *Environmental Pollution*, 263.

<sup>4</sup> See Italian Institute for Environmental Protection and Research - ISPRA, 2021. *Transizione Ecologica Aperta: Dove va l'ambiente italiano? – Rapporto statistico* 2021. Roma: ISPRA.



Figure 1 - Trend and future scenarios of the microplastics concentration in the surface layer of the water column. Years 1950-2050 (tonnes)

Source: Ispra, processing on data by Lebreton et al. 2019







### **GOAL 15**

**PROTECT, RESTORE AND PROMOTE** SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS<sup>1</sup>

#### In brief

- In 2021, the system of protected areas provided a high coverage of the 172 Key Biodiversity Areas identified in Italy (75.9% for terrestrial ecosystems, 85.2% for freshwater ecosystems); however, most EU countries are closer to the goal of total coverage.
- Land consumption has increased again. In 2021, the areas made impervious by artificial coverage recorded an average increase of 17.4 hectares per day, compared with 15.9 in the previous year, reaching 7.2% of national territory. However, many regions have approached the goal of zero land consumption; the most critical situations were in Piemonte, Liguria, Lombardia, Veneto, Lazio and Campania.
- In 2020, 44.4% of the Italian territory had a high or very high degree of fragmentation, which prevents its ecological functionality. Puglia and Marche had the highest rates, although in almost all regions fragmentation affected more than a quarter of the land area.
- Among the birds nesting in Italy, a positive decrease in the number of threatened species at risk of extinction is observed (26.1% in 2019, compared to 30% in 2013). However, Italy remains far away from the goal of securing all endangered species by 2020.

The statistical measures released by Istat for Goal 15 are twenty-two and refer to ten UN-IAEG-SDGs indicators (Table 15.1).



159

<sup>1</sup> This section was edited by Luigi Costanzo.

## Table 15.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and to previous year and convergence among regions

				VARIATIONS		CONVERGEN-	
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	REGIONS compared to 10 years before	
15.1.1	Forest area as a proportion of total land area						
Forest area	as a proportion of total land area (FAO-INFC, 2020, percentage values)	Identical	31.7			=	
Forest area	a index (Istat-Ispra, 2020, percentage values)	National context	37.8			=	
15.1.2	Proportion of important sites for terrestrial and freshwater biodiversity that are covered by pro-	tected areas, by e	cosystem ty	pe			
Average pr Internation	oportion of Terrestrial Key Biodiversity Areas (KBAs) covered by protected areas (BirdLife al, IUCN and UNEP-WCMC, 2021, percentage values)	Identical	75.9				
Average pr Internation	oportion of Freshwater Key Biodiversity Areas (KBAs) covered by protected areas (BirdLife al, IUCN and UNEP-WCMC, 2021, percentage values)	Identical	85.2		$\bigcirc$		
Protected (	natural areas (Istat, 2017, percentage values)	National context	21.6			=	
15.2.1	Progress towards sustainable forest management						
Forest area	a net change rate (FAO, 2020, percentage values)	Identical	0.57				
Above-gro	und biomass in forest (FAO, 2015, tonne per hectare)	Identical	110.6				
Proportion	of forest area within legally established protected areas (FAO, 2020, percentage values)	Identical	35.1				
Forest area	a certified under an independent verification scheme (Istat-Ispra, 2020, thousand hectares)	Identical	923				
15.3.1	Proportion of land that is degraded over total land area						
Soil sealin	g from artificial land cover (Ispra, 2021, percentage values)	Proxy	7.21		(a)	=	
Fragmenta	tion of natural and agricultural land (Ispra, 2020, percentage values)	National context	44.4		(a)	=	
15.4.1	Coverage by protected areas of important sites for mountain biodiversity						
Average pr Internation	oportion of Mountain Key Biodiversity Areas (KBAs) covered by protected areas (BirdLife al, IUCN and UNEP-WCMC, 2021, percentage values)	Identical	75.5				
15.4.2	Mountain Green Cover Index						
Mountain (	Sreen Cover Index (Ispra, 2020, percentage values)	Proxy	0.24		(a)	(b) =	
15.5.1	Red List Index						
Proportion (Ispra, 201	of species threatened with extinction, by level of the threat: Vertebrates, terrestrial species 3, percentage values)	Proxy	24.3				
Proportion percentage	of species threatened with extinction, by level of the threat: Dragonflies (Odonata) (Ispra, 2014, evalues)	Proxy	11.2				
Proportion percentage	of species threatened with extinction, by level of the threat: Saproxylic Beetles (Ispra, 2014, e values)	Proxy	21.0				
Proportion Ropalocera	of species threatened with extinction, by level of the threat: Butterflies (Lepidoptera a) (Ispra, 2015, percentage values)	Proxy	6.3				
Proportion values)	of species threatened with extinction, by level of the threat: Bees (Ispra, 2018, percentage	Proxy	13.9				
Proportion values)	of species threatened with extinction, by level of the threat: Birds (Ispra, 2019, percentage	Proxy	26.1				
15.7.1 15.c.1	Proportion of traded wildlife that was poached or illicitly trafficked						
Checks do	ne in application of the CITES (Ispra, 2016, N.)	Proxy					
Offences d	etected in application of the CITES (Ispra, 2020, N.)	Proxy					
15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species							
Spreading	of alien animal and vegetal species (Ispra, 2019, N.)	National context					
Legend					Notes		
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGENCE (a) Varia (b) Varia		(a) Variation co (b) Variation co	empared to 2012 empared to 2018	
$\bigcirc$	STABILITY	=	STABILITY				
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGEN	ICE			
	NOT AVAILABLE / NOT SIGNIFICANT						

#### Key Biodiversity Areas not fully covered by the system of protected areas

The degree of coverage of Key Areas for Biodiversity (KBA)<sup>2</sup> by national systems of protected areas is an indicator of the progress made by countries in the conservation of biodiversity. Globally, the goal of total coverage is still far away. According to the most recent estimates (2021), the coverage of the more than 16,000 KBAs surveyed worldwide was about 44% on average (without major differences between terrestrial and freshwater ecosystems), and even lower in the Less Developed Countries (38.1 % for terrestrial ecosystems, 40 % for freshwater ecosystems).





Source: BirdLife International, IUCN and UNEP-WCMC

The Italian system of protected areas, with an area equal to 21.7% of the national territory<sup>3</sup>, ensured a good level of coverage of the 172 KBAs surveyed in our country: 75.9% for terrestrial ecosystems and 85.2% for freshwater ecosystems. In most EU countries, however, coverage rates were higher: the goal of total coverage can be assessed as substantially achieved by Bulgaria and Latvia for both types of ecosystems, and by Denmark, Ireland, Lithuania and Croatia for freshwater ecosystems (Figure 15.1).

In 2021, in mountain environments, whose protection is considered strategic for the conservation of biodiversity, the average coverage of the KBAs was 40.5% worldwide and 41.7% in the Less Developed Countries; in Italy it reached 75.5%. In the EU27, the countries closest to the total coverage goal were Bulgaria, the Czech Republic and Finland, which exceeded 95%.



<sup>2</sup> The KBAs are "sites contributing significantly to the global persistence of biodiversity in terrestrial, inland water and marine environments" (IUCN. 2016. A global standard for the identification of Key biodiversity areas). KBA identification is an ongoing process in charge of the KBA Partnership, a network of NGOs, academic institutions and governmental organisations. The World Database of Key Biodiversity Areas records 16,356 sites worldwide, covering a total area of 20.7 million km<sup>2</sup> (2021).

Total land area, net of overlappings, of the sites included in the Official list of protected natural areas - EUAP (G.U. no. 125 of 31/5/2010) and/or belonging to the Natura 2000 network (Sites of Community Importance and Special Areas of Conservation, according to the Directive 92/43/CEE "Habitat"; Special Protection Areas, according to the Directive 2009/147/CE "Birds").

## Land consumption has arisen again, although many regions went close to the zero-consumption goal

Land consumption due to the construction of new buildings and infrastructure undermines a non-renewable resource, valuable for supporting the life on earth<sup>4</sup>. Soil sealing produced by artificial coverage and the fragmentation of open spaces produced by urbanisation are two aspects of a single process of land degradation, irreversible in the short to medium term, which Italy has committed to halt by 2030<sup>5</sup>.







Source: Istat, processing on Ispra data

At the end of 2021, the overall extent of soil made impervious to water by artificial coverings was 7.2% of the national territory. The share was significantly higher in the North (8.7% in the North-West, 8.4% in the North-East), slightly below the national average in the Centre (6.8%) and the South (6.6%), and lower in the Islands  $(5.0\%)^6$ .

In 2021, the increase in artificially sealed surfaces was 63.3 km<sup>2</sup>, equal to 17.4 hectares per day, a value substantially in line with those of 2018-2019. In 2020, a year also characterised by the stop of construction sites during the lockdown, the pace had fallen to 15.9 hectares per day (Figure 15.2a). In recent years, however, several regions (Valle d'Aosta, Toscana, Umbria, Molise, Calabria, Sardegna and the Autonomous Provinces of Bolzano and Trento) have approached the goal of zero land consumption, containing the expansion of sealed surfaces.Piemonte, Liguria and Lombardia, on the other hand, were the regions furthest from the goal, with increases between 0.4 and 0.6 percentage points in the period 2016-

Source: Istat, processing on Ispra data

<sup>4</sup> Soil performs a number of ecological functions, such as the production of vegetal biomass, the sequestration of carbon from atmosphere, the regulation of climate, and the regulation of the cycles of water and other elements essential to life, such as Phosphorus and Nitrogen. Soil is also an important reservoir of biodiversity.

<sup>5</sup> See National Strategy for Sustainable Development - SNSvS. 2017 ("Planet" area, strategic goal II.2: Stop land consumption and combat desertification). The SNSvS also aims to "ensure the restoration and defragmentation of ecosystems, and promote urban-rural ecological connections" ("Planet" area, strategic goal III.4).

<sup>6</sup> Sistema nazionale per la protezione dell'ambiente - SNPA. 2022. Land Consumption, Land Cover Changes and Eco-system services (time series revised). <u>https://www.snpambiente.it/wp-content/uploads/2022/07/EN\_Sintesi\_Rapporto\_consumo\_di\_suolo\_2022.pdf</u>.

2021. The situation in Veneto, Lazio and Campania was also of concern since in the same period these regions have made smaller increases, although higher than the national average, and recorded figures significantly above the average for the overall share of sealed surfaces too.





The impact of urbanisation on environment and landscape affects an area much larger than that physically occupied by artificial coverings. According to the estimates of Ispra, in 2020, 44.4% of the Italian territory had a high or very high degree of fragmentation, such to substantially limiting, or completely preventing, the performance of the ecological functions proper to natural or semi-natural environments<sup>7</sup>. The phenomenon has continued to progress at a very slow pace, as the incidence was already 44% in 2012, and its geography deviates, in part, from that of soil sealing. In 2020, the most affected regions were Puglia and Marche, with about two thirds of the regional territory, followed by Veneto, Emilia-Romagna, Campania and Lombardia (between 55 and 60%). The incidence of fragmentation, however, exceeded 25% in all other regions, except Valle d'Aosta (2.9%) and the Autonomous Provinces of Trento and Bolzano (7.7% and 1.2%, respectively).



Source: Istat, processing on Ispra data

<sup>7</sup> Ibid. (time series revised). Artificial barriers created by buildings and infrastructure disrupt the continuity of ecosystems, making ecologically inert and unproductive even the residual spaces that are not large enough. The degree of fragmentation is calculated on the basis of a density measure, derived from soil coverage analysis, as the number of particles not interrupted by artificial covering elements per unit of territory (effective mesh density). The methodology is described in Jaeger. 2000. Landscape division, splitting Index, and effective mesh size: new measures of landscape fragmentation. Landscape Ecology, no. 15.

#### Share of endangered species reduced among the birds nesting in Italy

Due to its geographical location and the variety of natural environments, Italy is a country relatively rich in biodiversity – whose conservation, however, has to deal with high anthropogenic pressure on the ecosystems.

The state of biodiversity is monitored through the compilation and periodic updating of the Red Lists of threatened species, which classify animal and vegetal species according to the level of the extinction threat<sup>8</sup>. In Italy, Red Lists have been published for different taxonomic groups present over the national territory, although two subsequent and recent editions are available only for the class of Birds. The two surveys, carried out in 2013 and 2019, showed a reduction of about 4 percentage points in the share of threatened species (from 30% to 26.1%)<sup>9</sup>. Despite the positive trend, 2019 data certified that more than one quarter of the species nesting in Italy were still at risk of extinction, although the goal of securing all threatened species had to be achieved by 2020 (target 15.5). Moreover, among the endangered species, the share of the vulnerable ones diminished, while those of the most seriously threatened species (endangered and critically endangered) increased (Figure 15.4).



Figure 15.4 - Species of birds nesting in Italy, by level of extinction threat. Years 2013 and 2019 (percentage values)

Source: Istat, processing on Ispra data

<sup>8</sup> The Red List Index is the reference indicator for target 15.5. It is calculated, by territorial units or taxonomic groups, on the basis of the Red Lists of endangered species, managed by the International Union for the Conservation of Nature (IUCN). The classification of species is based on quantitative criteria. The species threatened with extinction are those falling into the categories CR ("Critically endangered", if the population decreased by 90% in 10 years, or the area of occupancy reduced to less than 100 km<sup>2</sup>, or the number of mature individuals is lesser than 10,000), EN ("Endangered", if the population decreased by 70% in 10 years, or the area of occupancy reduced to less than 5,000 km<sup>2</sup>, or the number of mature individuals is lesser than 2,500), and VU ("Vulnerable", if the population decreased by 50% in 10 years or the area of occupancy reduced to less than 20,000 km<sup>2</sup>, or the number of mature individuals is lesser than 10,000).

<sup>9</sup> See the other statistical measures referred to SDG indicator 15.5.1 and disseminated with this Report, based on the results of the Italian Red Lists of Vertebrates (2013), Dragonflies (2014), Saproxylic beetles (2014), Butterflies (2016) and Bees (2018), published by the IUCN Italian Committee. At present, it is not considered to have a sufficient basis for a comprehensive assessment of the state and trends of biodiversity in the terrestrial environments of Italy.

# The growth of woodlands in Italy: a problem of adapting global indicators to the national context<sup>1</sup>

When talking about forests as providers of ecosystem services (environmental, productive, and socio-cultural), the focus is often on their capacity to absorb and store carbon dioxide from the atmosphere, because of the importance of this function in mitigating climate change. From this point of view, what is most important in monitoring sustainability is to verify that forest areas are increasing or, at least, not decreasing<sup>2</sup>.

A purely quantitative sustainability indicator, however, can be of absolute relevance only at global level (overall, a growth of forest areas is certainly positive for the planet). Conversely, at local level the interpretation of such an indicator requires some caution. Generally, developed countries do not have a deforestation issue (meant as an irreversible loss of forest cover). Nonetheless, they may have an issue with the ecological quality of forest ecosystems. In Italy, there has long been an expansion of forest areas, largely following the quitting and spontaneous re-naturalisation of vast croplands and grazing areas, abandoned over the last fifty years. For these evolving areas, however, no specific management practices have been developed, in order to protect the pioneering formations<sup>3</sup> and address them towards stable forest types, able to enhance the provision of ecosystem services. Consequently, the abandonment of agricultural or grazing practices and the progressive development of spontaneous vegetation, having altered ecological balances consolidated over time, often resulted in a loss of biodiversity (flora and fauna), ecotones (woodland-pasture, woodland-crops, etc.)<sup>4</sup> and landscape diversity in mountain and rural areas.

Data from the 3rd National Forest Inventory (INFC 2015) confirm the trend towards growth and densification of forest areas in Italy, certifying, in the 2005-2015 decade, an average increase in the volume of above-ground biomass<sup>5</sup> by more than 2% per year (equal to about 37.8 million m<sup>3</sup>), and an overall increase of approximately 5.6% of the forest area<sup>6</sup>. Moreover, the INFC 2015 estimates that 86.1% of the total forest area is accessible and theoretically available for roundwood removal.

Despite this evolution, our country remains characterised by a poor use of its own forest resources. According to recent estimates, the amount of removals is between 30 and 45% of the annual increase in biomass. In the last decade, the removal of roundwood for industrial and energy uses has shown a substantially steady trend, net of the fallout of extreme events such as the Vaia storm of 2018<sup>7</sup> (Figure 1). At the same time, Italy has been a net importer of wood and wood products<sup>8</sup>, for both firewood and timber. On average, over the period 2011-2020, the

5 Above-ground biomass is the set of organic matter living above forest soil, including stems, strains, branches, bark, seeds and foliage.



<sup>1</sup> This section was edited by Raoul Romano (CREA - Council for Agricultural Research and Economics) with contributions by Giovanni Seri and Luigi Costanzo.

<sup>2</sup> Within the Istat-SDGs framework, in particular, these monitoring objectives are met by indicators 15.1.1 - Forest area as a proportion of total land area, and 15.2.1 - Forest area net change rate.

<sup>3</sup> Forest populations, heterogeneous in composition and structure, that colonise the areas made available, e.g. by abandonment, giving place to the initial stage of the formation of a forest area.

<sup>4</sup> In landscape ecology, ecotones are defined as transition environments between two different ecosystems. As ecotones host both species belonging to the neighbouring ecosystems and species characteristic of the ecotonal area itself, they are generally high in biodiversity. https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/18158.

<sup>6 &</sup>lt;u>https://www.inventarioforestale.org/sites/default/files/datiinventario/pubb/Sintesi\_INFC2015.pdf.</u>

<sup>7</sup> The Vaia storm affected about 40,000 hectares of woodlands in the North-East of Italy, causing over 15 million m<sup>3</sup> of timber to crash.

https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/18158.

<sup>8</sup> Istat, Material flow accounts. On low roundwood removal in Italy, see also: Rete rurale nazionale 2014-2020. 2020. The state of Italian forests. Executive summary. Rome: RRN. <u>https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/21600</u>.

2022 SDGs Report. Statistical information for 2030 Agenda in Italy

imports of wood have exceeded the exports by almost 4 million m<sup>3</sup> per year (Figure 2). As a result, part of the pressure exerted by our economic system on forest resources has been in fact transferred abroad, generating environmental and social impacts in other parts of the planet and contributing, albeit to a limited extent, to the worsening of the sustainability indicators of forest management in other countries.

Unfortunately, the data currently available on forest uses are very lacking and should still be integrated with those relating to the loss factors that do not generate removals (such as fires, crashes and cuts that are not recovered or not recoverable), as well as with those relating to the final use of the wooden materials used. However, even considering these elements in a prudential way, the current growth rate of Italian forest areas seems allow a sustainable intensification of removals, in line with the commitments of the ecological transition, with the development of a low-impact bio-economy and with the aim of the National Forest Strategy<sup>9</sup> di "produrre meglio, ancor prima che produrre di più", in modo da incrementare l'input di legnto "produce better, even before producing more", so to increase the input of quality wood of national origin for our production system, and limit the recourse to imports.









Source: Istat, processing on Eurostat data

Source: FAO



### **GOAL 16**

**PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES** FOR SUSTAINABLE DEVELOPMENT; MAKE ACCESS TO JUSTICE AVAILABLE TO ALL AND CREATE EFFECTIVE, ACCOUNTABLE AND INCLUSIVE BODIES AT ALL LEVELS<sup>1</sup>

#### In brief

- In 2020, in Italy 289 voluntary homicides were committed in Italy, corresponding to 0.5 per 100,000 inhabitants. The homicide rate decreased significantly.
- At 31 December 2021, there were 8,527 pre-trial detainees, equal to 15.8% of the prison population, which is a smaller number in absolutes values, but represents a higher incidence on the whole population. In 2021, the crowding index of adult penitentiary institutions increased slightly compared to the previous year, due to the clearing of the measures adopted to prevent the spread of COVID-19 in prisons. Data showed an increase in the number of inmates per 100 available places, from 105.5 to 106.5.
- In 2021, the duration of civil proceedings in ordinary courts stopped its long-lasting decrease. It needed 7 additional days on average (from 419 to 426 days) although pending trials in ordinary and second instance courts were 6.7% less than the previous year.
- In 2021, the percentage of households complaining of difficulties in reaching at least three essential services keeps decreasing slightly (from 6.2% to 5.5%).

The statistical measures released by Istat for Goal 16 are eighteen and refer to nine UN-IAEG-SDGs indicators. (Table 16.1).



<sup>1</sup> This section was edited by Alberto Violante with contributions by Giovanna Tagliacozzo, Barbara Baldazzi, Maria Giuseppina Muratore and Franco Turetta.

## Table 16.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, last available value and variations compared to 10 years before and to the previous year and convergence among regions

				VARIATIONS			CONVER-
Ref, SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before		Compared to the previous year	GENCE BETWEEN REGIONS compared to 10 years before
16.1.1	Number of victims of intentional homicide per 100,000 population, by sex and age						
Intentiona	homicide rate (Ministry of the Interior, 2019, per 100,000 inhabitants)	Identical	0,5				$\Rightarrow \Leftarrow$
16.1.3	Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months						
Proportion	n of persons victims of robbery in the previous 12 months (Istat, 2015/16, percentage values)	Partial	0.2				
Proportion values)	n of persons victims of physical assault in the previous 12 months (Istat, 2015/16, percentage	Partial	1.2				
16.1.4	Proportion of population that feel safe walking alone around the area they live						
Perception	n of safety walking alone in the dark (Istat, 2020, percentage values)	Identical	62,2				$\Rightarrow \Leftarrow$
16.2.3	Proportion of young women and men aged 18-29 years who experienced sexual violence by age 18						
Proportion percentag	or of persons aged 18-29 years who experienced sexual violence by age 18 (Istat, 2015/16, e values)	Identical	Women 4.1 Men 0.7				
16.3.1	Proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms						
Reporting percentag	rate of victims of physical assault for population aged 14-65 years old (Istat, 2015/16, e values)	Partial	27.0				
16.3.2	Unsentenced detainees as a proportion of overall prison population						
Unsentend of Prison a	ced detainees as a proportion of overall prison population (Ministry of Justice - Department administration, 2020, percentage values)	Identical	15,8				$\Leftrightarrow \Rightarrow$
Juveniles Departmei	unsentenced detainees as a proportion of overall prison population (Ministry of Justice - nt of Prison administration, 2018, percentage values)	Identical	91,2		(a)		
Prison des 2020, perc	sity (Istat, processing of data from Ministry of Justice- Department of Prison administration, entage values)	Context Indicator	106,5				$\Leftarrow \Rightarrow$
16.5.1	Proportion of persons who had at least one contact with a public official and who paid a bribe during the previous 12 months	e to a public officia	I, or were asked for	r a bribe by the	ose put	olic officials,	
Household services in	is who have received requests for money, gifts or favours in exchange of facilitations or the previous twelve months (Istat, 2015/16, percentage values)	Proxy	7.9				
Households who have received requests for money, gifts or favours in exchange of facilitations or services in the previous three years (Istat, 2015/16, percentage values)		Proxy	1.7				
Household services d	is who have received requests for money, gifts or favours in exchange of facilitations or uring the life (Istat, 2015/16, percentage values)	Proxy	1.2				
16.6.2	Proportion of population satisfied with their last experience of public services						
Trust in ju	dicial system (Istat, 2020, mean score)	Partial	4,8				=
Trust in po	blice and fire brigade (Istat, 2020, mean score)	Partial	7,5		(b)		$\Rightarrow \Leftarrow$
Composite	e index of service accessibility (Istat, 2018-2020, percentage values)	Partial	5,5		(c)		=
Length of days)	civil proceedings (Ministry of Justice - Judicial organization department, 2020, number of	Context Indicator	426		(b)		=
16.7.1 Proportions of positions in national and local institutions, including (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions, by sex, age, persons with disabilities and population groups							
Women ar and Senat	nd political representation in Parliament (Istat, processing of data from Chamber of Deputies e, 2018, percentage values)	Identical	35.4		(d)		$\Rightarrow \Leftarrow$
Youth and and Senat	political representation in Parliament (Istat, processing of data from Chamber of Deputies e, 2018, percentage values)	Identical	42.2				
Logonda						Noto	
	IMPROVEMENT	⇒⇐	CONVERGENCE			(a) Variation comp (b) Variation comp (c) Variation comp	pared to 2013 pared to 2012 pared
$\bigcirc$	STABILITY	=	STABILITY			respectively to the 2008-2010 and 20	averages 17-2018
	DETERIORATION	$\Leftrightarrow \Rightarrow$	DIVERGENCE			(d) Variation comp respectively to 200	pared 08 and 2014
	NOT AVAILABLE / NOT SIGNIFICANT						

#### Intentional Homicides recorded a further reduction

In 2020, in Italy there were 289 intentional homicides (0.5 per 100,000 inhabitants). Crimes have reduced by 56 homicides, comparing to 2019 and are steadily diminishing throughout the years.

Italy, together with Slovenia, has the lowest homicide rate in Europe  $(0.5)^2$ . Although the average rate is stable, a reduction of victims occurred in particular age classes. Homicides decreased in almost every age class, except for the young people between 14 and 17 years and for the adults between 35 and 44 years among whom there was an increase of 3 and 14 victims respectively. In the age class of 45-54 year old people no variation was registered.

At a regional scale South and Islands improved clearly, especially in Calabria where the homicide rate halved (from 1.5 to 0.7) and in Abruzzo. Homicide rates raised slightly in the North-West with a special increase in Liguria and Puglia. (Figure 16.1).



Figure 16.1 - Intentional homicide rate, by region. Year 2020 (per 100,000 inhabitants)

In 2020, homicide victims per 100,000 inhabitants were more often males (0.6) than females (0.4). Homicides of men were perpetrated mainly in the South, because of crimes due to mafia-type criminal associations were more widespread. Homicides of women, which occur mainly in the domestic environment, did not show a prevalent geographical location (see Goal 5).



Source: Ministry of the Interior

#### Unsentenced detainees with a conviction decreased slightly

As of 31 December 2021, the Ministry of Justice recorded 54,134 people detained in adult correctional institutions (in 2020 they were 53,364), of whom 51,897 were men and 2,237 were women. The increase is entirely caused by the male detainees. There were 8,527 inmates awaiting first trial, equal to 15.8% of the whole convicted population, which is marginally lower than in 2020.

By 2017 people in prison continuously declined; in last year a small increase in prison population stopped the trend (+1,259 in 2021). Overall release from prison maintained a constant trend. Among measures alternative to prison, home detention and deferment of sentence remained stable too, like alternative measures connected with Social Services as penitentiary and judicial probation<sup>3</sup>.

The incidence of pre-trial detainees was higher among young detainees: 49.3% of young people from 18 to 20 years imprisoned were unsentenced. The highest incidence matched with a worrying trend (only three years ago they were 39.4%), that can only be partially explained with the delay of the administration of criminal justice after the pandemic period (Figure 16.2).





Source: Ministry of Justice

In 2021, the prison density index (calculated as the number of inmates per 100 regulatory places) increased to 106.5 (it was 105.5 in 2020), but indicating overcrowded conditions.

<sup>3</sup> The Italian Institute of probation is articulated in different measures quite different and not comparable to the anglosaxon ones.

# Post-pandemic reversed the declining trend of the duration of trials. Accessibility to services improved

After ten years of constant improvement, pandemic has reversed the process of reducing the length to complete civil proceedings by ordinary courts. The average trial duration in 2021 was 426 days, seven days more than the previous year (Figure 16.3).

In 2021 regional disparities widened between North and South and Islands, which suffered a higher increase in the duration (+14 days compared to 2020), compared to the central regions having a stable duration and the northern regions slightly improving (-4 days). The judicial districts of Sardegna, Sicilia and Molise showed the worst change.





Source: Ministry of Justice

In 2020, the share of households complaining of difficulties in reaching at least three essential services decreased meaningfully, reaching 5.5% percent (6.2% in 2019), sustained by the improvement registered in South and Islands, where the share diminished from 9.2% to  $7.9\%^4$ .



<sup>4</sup> Essential services were identified among pharmacies, emergency rooms, post offices, police, municipal offices, kindergarten, nursery schools, primary schools, junior high schools, grocery stores, markets, supermarkets.

#### Italian prison overcrowding and quality of life<sup>1</sup>

In SDGs-Istat System, prison density index is a national context indicator, calculated as the ratio between the average inmate population and the available places in State prisons. It is important to describe the sustainability and equity conditions of the Italian and judicial system in order to measure target 16.3 of UN 2030Agenda. It is very important to evaluate the efficacy of re-educating action of penitentiary system and the well-being of prison population. In 2009 and 2013 the Italian State was condemned twice by the Human Rights European Court<sup>2</sup>, to push Italian parliament and Italian government to issue several laws<sup>3</sup>, in order to reduce, conveniently, prison population, through the promotion of measures alternative to detention.





Source: Ministry of Justice - Department of Prison administration

In the immediate aftermath of the first European Human Right Court expression against Italy, prison density index progressively decreased. The balance between prison inflows and outflows diminished significantly, falling from more than 13,300 to around 6,600, but remained positive (Fig. 1).

Nonetheless, prison population visibly decreased, for the underestimation of the outflows due to the exclusion of detainees with a sentence under 18 months into home detention, as regulated by Law 199/2010. Only between 2010 and 2013 this new institutional modality contributed to reduce prison density of 9,000 exits into home detention. In 2014 for an abrupt decrease of entrances, falling of more than 9,000 people, the net entrances and exits balance turned negative and prison density index reached 108.

<sup>1</sup> This section was edited by Simona Iachini, Roberto Mascagni, Flavia Tagliafierro (Department Penitentiary Administration) with contributions by Alberto Violante.

See Judgment 16th July 2009 - Recourse n. 22635/03 - Sulejmanovic vs Italy, and sentence 8th January 2013 - Recourse nn. 43517/09, 46882/09, 55400/09, 57875/09, 61535/09, 35315/10 and 37818/10 Torreggiani and other vs Italy.

<sup>3</sup> It started with Law 199/2010 which introduced the penal execution by home detention for sentences not over 12 months (18 months after the Law Decree 146/2013).

Until 2017, the balance between entrances and exits increased again, nonetheless the prison density index stood at a little higher degree over the previous one. Beside the laws cited above, which resulted in exits to home detention at around 2,000, new laws between 2013 and 2014, de-penalised some crimes and promoted a series of measures alternative to the prison execution of the sentence<sup>4</sup>.

An important part of the re-education for inmates regards paid prison labour. In order to organise the participation to incarcerated labour force it needs adequate human resources and physical spaces, which cannot immediately expand as the incarcerated population grows, for organisational, technical and financial reasons. This results into a growing percentage of inmates working for the Department of Penitentiary administration when the prison density index decreases (Figure 2). The same, even if in a smaller intensity, is true for the share of inmates working for private employers.





Source: Ministry of Justice - Department of Prison administration

The introduction of measures alternative to jail sentences - specifically those for drug related crimes - and the pronouncement n. 32 of 2014 of Constitutional court, which declared illegitimate the Italian Act on Drugs, pushed down the prevalence of drug related crimes on prison population (Fig. 3). The decrease of inmates for this kind of crime had positive effects upon the whole incarcerated population, due to the high frequency of drug related crimes among inmates.





#### Figure 3 - Prevalence of drug-rekated crimes and Prison density index. Years 2011-2021 (percentage values)

Source: Ministry of Justice - Department of Prison administration



### **GOAL 17**

**STRENGTHENING MEANS OF IMPLEMENTATION** AND RENEWING THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT<sup>1</sup>

#### In brief

- In 2021, total government revenue as a proportion of GDP accounted for 43.5% of GDP, an increase of 0.7 percentage points compared to 2020 and 2.2 points compared to ten years earlier. The increase recorded in the last year is mainly due to the increase in receipts from indirect taxes (14.5 %; + 0.8 percentage points compared to 2020). Direct taxes (15 %; -0.1 p.p. compared to 2020) and social contributions (13.5 %; -0.1 p.p. compared to 2020) recorded a slight reduction.
- In 2020, the ratio of Official Development Assistance (ODA) to gross national income remained stable compared to the previous two years (0.22 %). ODA to Least Developed Countries on gross national income also remained unchanged compared to the previous year (0.06 %). Italy was still far from meeting the targets set out in the 2030 Agenda.
- In 2021, the foreign workers' remittances in Italy amounted to about 7.7 billion euro, an increase of 14.3 % compared to 2020. The yearly average in 2011-2020 of remittances was 0.36 % of GDP, and in 2021 it reached 0.44 %.
- In 2021, regular Internet users (16 to 74 years-old) were 80.2 %, lower than the EU27 average (87%). Among regular Internet users, 39.8 % purchased goods or services online (+ 8.4 points compared to 2020), 45.3 % carried out online banking transactions and 34.1 % interacted online with the Public Administration or with public service providers.

The statistical measures released by Istat for Goal 17 are eleven and refer to five UN-IAEG-SDGs indicators (Table 17.1).



<sup>1</sup> This section was edited by Carmen Federica Conte.

## Table 17.1 - Statistical measures released by Istat, taxonomy compared to SDGs indicators, variations compared to 10 years before and previous year and convergence among regions

				VARIATIONS		CONVERGENCE AMONG REGIONS		
Ref. SDG	INDICATOR	Compared to SDG indicator	Value	Compared to 10 years before	Compared to the previous year	Compared to 10 years before		
17.1.2	Total government revenue as a proportion of GDP, by source							
Total gove	rnment revenue as a proportion of GDP, by source (Istat, 2021, percentage values)	Proxy	43.5					
17.2.1 Net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' gross national income (GNI)								
Official De and Interna	velopment Assistance as a proportion of gross national income (Ministry of Foreign Affairs ational Cooperation, 2020, percentage values)	Identical	0.22		(a)			
Official De income (M	velopment Assistance to Least Developed Countries as a proportion of gross national inistry of Foreign Affairs and International Cooperation, 2019, percentage values)	Identical	0.06		(a)			
17.3.2	Volume of remittances (in United States dollars) as a proportion of Total GDP							
Foreign wo prices).	orkers' remittances (Istat processing on Bank of Italy data, 2021, Millions euro (current	Proxy	7736.5					
Foreign wo	orkers' remittances (Istat processing on Bank of Italy data, 2021, percentage values)	Proxy	(*)					
17.6.2	Fixed Internet broadband subscriptions per 100 inhabitants, by speed							
Household	is with fixed and/or mobile broadband connection (Istat, 2021, percentage values)	Proxy	79.5			$\Rightarrow \Leftarrow$		
Household	is with Internet access (Istat, 2021, percentage values)	National context	90.3			$\Rightarrow \Leftarrow$		
17.8.1	Proportion of individuals using the Internet							
Individuals values)	s aged 6 years and over who used the Internet in the last 3 months (Istat, 2021, percentage	Identical	74.9			$\Rightarrow \Leftarrow$		
People wh months (Is	o have ordered/purchased goods or services for private use on the internet in the last 3 tat, 2021, percentage values)	National context	39.8			$\Rightarrow \Leftarrow$		
People wh 2021, perc	o have carried out online banking transactions (internet banking) in the last 3 months (Istat, entage values)	National context	45.3			$\Rightarrow \Leftarrow$		
People wh 2021, perc	o have interacted online with the Public Administration or public service providers (Istat, entage values)	National context	34.1			$\Rightarrow \Leftarrow$		
Legend					Notes			
	IMPROVEMENT	$\Rightarrow \Leftarrow$	CONVERGENC	E	<ul> <li>(a) Variation com</li> <li>(*) Please refer to www.istat.it</li> </ul>	pared to 2013 the data table on		
$\bigcirc$	STABILITY	=	STABILITY					
	DETERIORATION	$\Leftarrow \Rightarrow$	DIVERGENCE					
	NOT AVAILABLE / NOT SIGNIFICANT							

#### In 2021, the ratio between total government revenue and GDP increased

In 2020, in EU27, the total receipts from taxes and social contributions on GDP amounted to 41.3%, a slight increase (+0.3 p.p.) compared to 2019. Denmark (48%), France (47.5%), Belgium (46.2%) were the countries with the highest shares. Spain recorded a significant increase (37.5%; +2.1 p.p. compared to 2019), while in Ireland, the country of the EU27 with the lowest tax revenue/GDP ratio, there was a further reduction (20.8%; -1.9 p.p. compared to 2019).

In 2021, in Italy, total government revenue on GDP ratio was 43.5% (+0.7 percentage points compared to 2020 and +2.2 points compared to 2011); Figure 17.1). The increase over the last year was mainly due to the increase in receipts from indirect taxes (14.5%; +0.8 points compared to 2020). Tax revenues increased after the contraction in 2020, due to the lockdown measures. In 2021 there was a slight reduction of revenues from direct taxes (15%; -0.1 p.p. compared to 2020) and actual social contributions (13.5%; -0.1 p.p. compared to 2020).





Source: Eurostat-Istat, National Accounts

#### Official Development Assistance on gross national income was stable

In 2020, in Italy, the share of Official Development Assistance (ODA) on gross national income (GNI) compared to the previous year (0.22%) remained stable. In EU27 average it increased to 0.50% (it was 0.41% in 2019). Among countries, Sweden (1.14%), Luxembourg (1.02%), Denmark and Germany (both 0.73%) exceeded the target of the 2030 Agenda (0.7%). In terms of share of ODA to Least Developed Countries (LDCs) to GNI, Luxembourg (0.47%), Sweden (0.32%) and Denmark (0.22%) recorded the highest shares in 2019, exceeding the threshold set by the EU27 (0.15-0.20%). In 2019, Italy recorded a share of ODA to LDCs equal to 0.06%, unchanged from the previous two years.



#### The flow of foreign workers' remittances continued to increase

In 2021, in Italy workers' remittances amounted to around 7.7 billion euro, an increase of 14.3% compared to 2020. Foreign remittances accounted for 0.44% of GDP (it was 0.41% in 2020 and 0.36% as average in 2011-2021).

The largest flow of remittances abroad was from Lombardia (1.8 million euro), Lazio (1.1 billion) and Emilia-Romagna (790 million), the regions with largest foreign population. In 2021 Sardegna and Puglia recorded the largest increase of output flows (respectively 30.8% and 21.9% compared to 2020), nevertheless more than half of the regions in the country recorded output flows above the national average (14.3%; Figure 17.2).

Figure 17.2 - Foreign population resident at 1/1/2022(a) and percentage change in foreign workers' remittances, by region. Years 2020-2021 (N:, percentage values)



Source: Istat, processing on Bank of Italy data (a) Provisional data.

In 2021, the main destination of remittances from Italy was Bangladesh, 11.3% of the total, followed by Pakistan (7.7%) and the Philippines (7.6%). In the last year, the share of outflows has increased significantly to Pakistan (+1.3 percentage points), Philippines (+1.0 percentage points) and Bangladesh (+0.8 percentage points). Conversely flows to Sri Lanka (-1.1 percentage points) and Eastern Europe have decreased (Romania, Ukraine and Moldova -1.6, -0.8 and 0.4 percentage points respectively).

# Many more people made online purchases or banking transactions and interacted with the Public Administration on the Internet

In 2021, 80.2% of Italians in the 16-74 age group used the Internet (see Goal 5). In EU27 countries, the average was equal to  $87\%^2$ . Data show a significant increase in recent years: +3.8 percentage points compared to 2020 and 2.5 percentage points in 2020 compared to 2019. Men accessed the Internet more frequently than women (81.7% versus 78.7%) although in the last decade the gap has narrowed. The internet usage decreased in the older age classes. In 2021, almost all children in the age class 16-19 used the Internet (96.8%; +5 p.p. compared to 2020 and +13.6 p.p. compared to 2011); users in the age class 65-74, despite the expansion of the last decade, were slightly less than 50% (49.7%; +7 points compared to 2020 and +38 p.p. compared to 2011).

Familiarity with the Internet was more widespread among people with a high level of education (94.5%; +1.9 p.p. compared to 2020 and +9.8 points compared to 2011) than those with a low level (64.3%; +3.8 points compared to 2020 and +36.1 compared to 2011). The share of Internet users was higher in the North-West (83.4 %; +3.9 percentage points compared to 2020 and +27.5 p.p. compared to 2011). In the South and Islands the value stood at 74.3 % (+5.3 points compared to 2020 and +32.3 p.p. compared to 2011).

In 2021, 45.3% of Internet users used carried out banking transactions, a share lower than the EU27 average (58%)<sup>3</sup>. A larger share of men accessed Internet banking (49.6%) than women (41.1%) although in the last year the gender gap decreased by more than 1 percentage point. Users were in greater proportion among people with a high educational level (73.5%) and aged 25 to 44 (25-34 years 59.7%; 35-44 years 57.5%). Territorial differences were still pre sent. In the North, the percentage of Internet banking users was 53.7%; in the South and Islands 31.3%.

In 2021, 39.8% of Internet users (in the age group 16-74) purchased goods or services online (+8.4 percentage points compared to 2020)<sup>4</sup>. Online purchases were concentrated between young people (56.7% in the 25-34 age group; +12.5 percentage points compared to 2020 and +38.8 p.p. compared to 2011 and 55.3% in the 20-24 age class, +8.2 points compared to 2020 and +40 points compared to 2011). However also older users (65-74 years) used increasingly Internet to make purchases (14.2%; +3.8 percentage points compared to 2020 and +12.7 p.p. compared to 2011).

In 2021, 34.1% of users interacted online with the Public Administration or with public service operators (+4.7 percentage points compared to 2020 and +11.9 p.p. compared to 2011 (in EU27 countries, the average was  $58\%^5$ ). The share of users who interacted online with the Public Administration was higher between 35 and 54 years (40.9% in the 35-44 age group; 40.1% in the 45-54 age group), and lower in 65-74 age group (19.5%; +5 percentage points compared to 2020 and 13 p.p. compared to 2011).



<sup>2</sup> See <u>http://ec.europa.eu/eurostat</u>.

<sup>3</sup> See <u>http://ec.europa.eu/eurostat</u>.

<sup>4</sup> Data on online purchases of goods and services in EU27 in 2021 are not available yet.

<sup>5</sup> See <u>http://ec.europa.eu/eurostat</u>.

### Figure 17.3 - People who ordered/purchased goods or services for private use on the Internet (a), people who have carried out online banking transactions (a) and people who have interacted online with the Public Administration or public service providers (b). Years 2011-2021 (percentages values)



Source: Istat, Survey on Aspects of daily life (a) In the 3 months before the interview. (b) In the 12 months before the interview.

#### Internet access of Italian households<sup>1</sup>

COVID-19 pandemic has accelerated the use of digital technologies in different areas of everyday life and has helped to highlight the potential of Information and Communication Technology to enable the exercise of fundamental rights, such as those for education and health. This evolution has made the impact of digital divides on social inclusion more evident. In 2021, almost all Italian households with at last one member aged between 16 and 74 had Internet access available<sup>2</sup>. Between 2019 and 2021, Italy almost closed the gap with the EU27 average, with an increase of 5 p.p. (Figure 1).

Figure 1 - Households with at least one 16-74 year-old component with Internet access, by country Years 2010-**2021** (percentage values)



Fonte: Eurostat

The increase of smart working and the continuation of distance learning made adequate technology necessary, as well as the availability of Internet access in homes. In 2021, in Italy, 69.7% of households had Internet access and a PC (Figure 2). Compared to 2019, there was an increase of 4.6 percentage points due to the growth, both for households with Internet access (from 76.1 % to 81.5%), and for those with a PC (from 66.1% to 70.3%). The territorial differences between South and Islands (63.6%) compared to North and Centre (72.3%) were confirmed in 2021.

Generational and cultural factors affect the digital divide. Almost all households with at least one minor had both an Internet connection and a PC (91.8%). Among households that include exclusively member over 75 years this share dropped to 34.2% (Figure 2), although in this age group the availability of an Internet connection has increased by 10.7 p.p. in the last two years. Another discriminatory factor is the level of education: 94.8% of households with at least one component with tertiary education had a connection and a PC (only 34.2% for those with low educational level). The gap between households with different levels of education lowered in case of availability of home connection (98.1% and 52.8%).



 <sup>(</sup>a) For France, the 2020 data refers to that of 2019 since it is not available.
 (b) Germany in 2021 presents a break in the series.

<sup>1</sup> This section was edited by Laura Zannella with contributions by Carmen Federica Conte.

<sup>2</sup> The indicator refers to the percentage of households (with at least one component in the age group between 16 and 74) who have Internet access from home, so that each of the components can browse the Internet from home, even just to send an email.



Figure 2 - Households with Internet access and at least one PC, by region. Years 2019, 2021 (percentage values)

Most households without Internet access from home indicated as a main reason that they are not able to connect (60%), while 23.3% said they do not believe that the Internet is a useful and interesting tool.

The reasons behind the lack of availability of Internet access differ in accordance with the household type. In elderly single households, the share of those who record a lack of capacity (68.2%) was higher; those who do not believe Internet is useful and interesting were less than a quarter (23.6%).

#### Figure 3 - Households with Internet access and at least one PC, by type and highest educational attainment level. Years 2019, 2021 (percentage values)



Source: Istat, Survey on Aspects of daily life

Source: Istat, Survey on Aspects of daily life

56.7% of households with at least one minor who do not have access to the Internet at home were motivated by the high cost of connecting services or devices needed to connect, while 25.8% did not believe it is necessary because they can access to the Internet from another place.

183


### ISTAT-SDGS STATISTICAL MEASURES BY TARGET AND TYPOLOGY





### Goal 1

			TATISTICAL MEASU	RES
	TARGET	Identical	Proxy / Partial	National context
1.1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.			<b>1.11.</b>
1.2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.	A	A	A.++.+ A.++.+
1.3	Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.			t.++.t
1.4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.		8.4449 8.4449 8.4449 8.4449 8.4449 8.4449 8.4449 8.4449 8.4449 8.4449	<b>(), † † , †</b>
1.5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.		8.4447 (8.4447 (8.4447 (8.4447	
1.a	Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions.	freed	hiff	
1.b	Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions.			



. . . . . . . . . . . . .

Goal 2

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
2.1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.			<u></u>
2.2	By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.		<u></u>	<b>(</b> ()
2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.			
2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.			
2.5	By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.			
2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.		<b></b>	
2.b	Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.			
2.c	Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.			

### Goal 3

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
3.1	By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.			-
3.2	By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.	-11/2 -11/2		
3.3	By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.			
3.4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	-4/2 -4/2 -4/2		
3.5	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.			
3.6	By 2020, halve the number of global deaths and injuries from road traffic accidents.			
3.7	By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.	-11/2 -11/2		
3.8	Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.			
3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	-4/2		
3.a	Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate.			
3.b	Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.			
3.c	Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States.			
3.d	Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.			

. . . . . . . . . . . . .



Goal 4

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
4.1	By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.			
4.2	By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.			
4.3	By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.			
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.			
4.5	By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.	(a)		
4.6	By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.			
4.7	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of cultures contribution to sustainable development.			
4.a	Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.			
4.b	By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries.			
4.c	By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.			

(a) The parity indices are 21 and refer to 15 statistical measures of Goal 4.

### Goal 5

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
5.1	End all forms of discrimination against all women and girls everywhere.			
5.2	Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation.	¢ ¢	(† (†	ġ ġ ġ
5.3	Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation.			
5.4	Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.	Ę		<b>(</b>
5.5	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.		Image: second se	
5.6	Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences.			Ţ
5.a	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws.			
5.b	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.		Ę	(e)
5.c	Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.			

.....



•

Goal 6

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National nazionale
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all.			<b>V V V</b>
6.2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.			
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.		<b>777</b> <b>777</b> <b>7</b>	<b>Q Q</b>
6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.		<b>ÖÖ</b>	
6.5	Entro il 2030, realizzare la gestione integrata delle risorse idriche a tutti i livelli, anche attraverso la cooperazione transfrontaliera, dove necessario.	V		
6.6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.	V		
6.a	By 2030, expand international cooperation and capacity-building support to developing countries in water-and sanitation-related activities and programmes, including water harvesting, desalina- tion, water efficiency, wastewater treatment, recycling and reuse technologies.	V		
6.b	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.			

### Goal 7

			STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context	
7.1	By 2030, ensure universal access to affordable, accessible, reliable and modern energy services.			<b>*</b> **	
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix.		<b>*</b> * *		
7.3	By 2030, double the global rate of improvement in energy efficiency.			<b>※</b>	
7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.				
7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support.				

## 193

Goal 8

.....

		STATISTICAL MEASURES		JRES
	TARGET	Identical	Proxy / Partial	National context
8.1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries.	M		
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.	<b>M</b>		
8.3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.		<u> </u>	
8.4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead.			
8.5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.			
8.6	By 2020, substantially reduce the proportion of youth not in employment, education or training.	<b>M</b>		<b>M</b>
8.7	Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms.			
8.8	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.			
8.9	By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.		<b>M</b>	<b>M</b>
8.10	Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all.			
8.a	Increase Aid for Trade support for developing countries, in particular least developed countries, including through the "Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries".			
8.b	By 2020, develop and operationalize a global strategy for youth employment and implement the "Global Jobs Pact of the International Labour Organization".			

### Goal 9

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.		88	& & & & &
9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.			
9.3	Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.			
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.			
9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.			& & & & & & & & & & & & & & & & & & & &
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States.			
9.b	Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.			
9.c	Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.			

. . . . . . . . . . . . . . . .



•



Goal 10

		STATISTICAL MEASURES		RES
	TARGET	Identical	Proxy / Partial	National context
10.1	By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.		¢	
10.2	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.			
10.3	Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.			
10.4	Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.			
10.5	Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations.			
10.6	Ensure enhanced representation and voice for developing countri- es in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.			
10.7	Facilitate orderly, safe, regular and responsible migration and mobi- lity of people, including through the implementation of planned and well-managed migration policies.		¢	
10.a	Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements.			
10.b	Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes.		¢	
10.c	By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent.			

### Goal 11

		STATISTICAL MEASURES		JRES
	TARGET	Identical	Proxy / Partial	National context
11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.			
11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.			Alle Alle Alle
11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.			
11.4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage.		A	
11.5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.		Alde Alde Alde	
11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.			Allo Allo Allo
11.7	By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.			
11.a	Support positive economic, social and environmental links betwe- en urban, peri-urban and rural areas by strengthening national and regional development planning.			
11.b	By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.			
11.c	Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.			



Goal 12

		STATISTICAL MEASURES		RES
	TARGET	Identical	Proxy / Partial	National context
12.1	Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries			
12.2	By 2030, achieve the sustainable management and efficient use of natural resources.	0000		
12.3	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.			
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.			
12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.		0000	
12.6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.		000	
12.7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities.			00
12.8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.			
12.a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production.	00		00
12.b	Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	00		00000 00
12.c	Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.	0		

### Goal 13

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.		<b>000</b> 0	000 000 0
13.2	Integrate climate change measures into national policies, strategies and planning.	000		000 000
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.		0	
13.a	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.			
13.b	Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.			

# 199

•



Goal 14

		STATISTICAL MEASURES		
	TARGET	Identical	Proxy / Partial	National context
14.1	By 2025, prevent and significantly reduce marine pollution, in particular from land-based activities, including marine debris and nutrient pollution.			•
14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.			
14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.			
14.4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.			
14.5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.			
14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation.			
14.7	By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.			
14.a	Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.			
14.b	Provide access for small-scale artisanal fishers to marine resources and markets.			
14.c	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want".			

### Goal 15

		STATISTICAL MEASURES		IRES
	TARGET	Identical	Proxy / Partial	National context
15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.	<b>88</b> 8		99
15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.	66		
15.3	By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.			
15.4	By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.			
15.5	Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.		868 868	
15.6	Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.			
15.7	Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.		(b)	
15.8	By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species.			
15.9	By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.			
15.a	Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.			
15.b	Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.			
15.c	Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities.		(b)	

(b) The measures referred to target 15.7 and those referred to target 15.c are the same.



201

### Goal 16

			STATISTICAL MEASU	JRES
	TARGET	Identical	Proxy / Partial	National context
16.1	Significantly reduce all forms of violence and related death rates everywhere.			
16.2	End abuse, exploitation, trafficking and all forms of violence against and torture of children.		×	
16.3	Promote the rule of law at the national and international levels and ensure equal access to justice for all.			
16.4	By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.			
16.5	Substantially reduce corruption and bribery in all their forms.			
16.6	Develop effective, accountable and transparent institutions at all levels.			
16.7	Ensure responsive, inclusive, participatory and representative decision-making at all levels.			
16.8	Broaden and strengthen the participation of developing countries in the institutions of global governance.			
16.9	By 2030, provide legal identity for all, including birth registration.			
16.10	Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.			
16.a	Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.			
16.b	Promote and enforce non-discriminatory laws and policies for sustainable development.			

### Goal 17

		STATISTICAL MEASURES		IRES
	TARGET	Identical	Proxy / Partial	National context
17.1	Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.		8	
17.2	Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries.			
17.3	Mobilize additional financial resources for developing countries from multiple sources.		<b>*</b>	
17.4	Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress.			
17.5	Adopt and implement investment promotion regimes for least developed countries.			
17.6	Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.		*	<b>(89)</b>
17.7	Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.			
17.8	Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.	*		
17.9	Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation.			
17.10	Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda.			
17.11	Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020.			
17.12	Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access.			
17.13	Enhance global macroeconomic stability, including through policy coordination and policy coherence.			
17.14	Enhance policy coherence for sustainable development.			
17.15	Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development.			

. . . . . . . . . . . . .



•



## Goal 17 follow

		ST	ATISTICAL MEASU	RES
	TARGET	Identical	Proxy / Partial	National context
17.16	Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.			
17.17	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.			
17.18	By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.			
17.19	By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries.			

# 3. "NO ONE LEFT BEHIND": ISTAT-SDGS STATISTICAL MEASURES TO MEASURE INEQUALITY 1

### **3.1 Introduction**

Launched in the 1990s, the debate on inequalities has gradually emphasised their multidimensional nature, referring to a variety of domains related to income and wealth, education, work, health, environment and – transversely – territorial, gender and intergenerational opportunities, all equally relevant for development based not exclusively on economic growth. The contrast to inequalities has become one of the objectives of major international policies, as part of a process culminating in the adoption of the 2030 Agenda for Sustainable Development, especially with Goal 10 (Reduced inequalities) and Goal 5 (Gender equality) as well as in a variety of targets and related monitoring indicators that are part of other Goals.

The evolution of measurement within the 2030 Agenda and its implementation into national<sup>2</sup> and European policies has highlighted the importance of broadening statistical information for monitoring progress towards overcoming inequalities, as persistent gaps and imbalances are hampering sustainability. Six years after its launch, the Istat-SDGs system makes available a plenty of information for the analysis of inequalities in the social, economic and environmental domains of sustainable development (see Chapter 1).

In this chapter, we propose a first suggestion to summarise territorial and gender inequalities with the aim of contributing to the debate on sustainable development, in the awareness of the need to continue to strengthen the development of methods and sources to broaden the horizons of measurement and analysis.

#### **3.2 Territorial inequalities**

In Italy, territorial imbalances have long been the subject of political and institutional attention, primarily in order to reduce the gap between southern Italy and the rest of the country. The increase in social and economic inequalities caused in many western countries by the 2008-2012 recession and by the pandemic crisis, has called for the urgency of policies that are sensitive to territorial inequalities.

Next Generation EU, an ambitious programme of over 800 billion euro for the sustainable and resilient development of the Member States, is the European policy to tackle with the effects of the pandemic crisis. The Italian NRRP, which results from the Next Generation EU, aims to give new impetus to the country by setting up six missions (see Chapter 1). In addition, the NRRP identifies intergenerational, gender and territorial equal opportunities



<sup>1</sup> This Chapter was edited by Barbara Baldazzi, Lorenzo Di Biagio, Leopoldo Nascia and Paola Ungaro (paragraph 3.2); Daniela Fantozzi, Alberto Violante and Paola Ungaro with contributions by Barbara Baldazzi and Lorenzo Di Biagio (paragraph 3.3).

<sup>2</sup> For a description of National Sustainable Development Strategy measurement process, see Chapter 4.

as cross-cutting priorities, on the basis of which Missions and Reforms are assessed. The synergies between the NRRP and the 2030 Agenda establish a common ground for the goal of tackling inequalities and for the details of the measurements needed to assess progress.

This paragraph proposes a first measurement of the progress of the Italian regions and Autonomous Provinces, with respect to the Goals and targets of the 2030 Agenda.

The methodological framework for this in-depth analysis has been conditioned by two important elements. The first is that only a minority of the Agenda targets are based on clear quantitative benchmarks. The second refers to the universality of the objectives of the Agenda, which need to be placed in the national context. For these reasons, we decided to analyse territorial trends in terms of distance, not from a predetermined target, but from the *best performance (bp)*, defined as the best outcome by one or more regions/Autonomous Provinces from 2010 to the present.

The distance has been calculated for each Istat-SDGs statistical measure for which regional detail is available<sup>3</sup>. These are 152 measures, covering all the 17 Goals.

For each statistical measure *j* (with *j* from 1 to 152) the best performance value is defined as:

$$bp_j = \max_{i \in Reg, t \ge 2010} \{x_{j,i,t}\},$$

where  $x_{j,i,t}$  is the value of measure *j* for region *i* at time *t*. The set of the regions *Reg* includes the two Autonomous Provinces of Trento and Bolzano, but not Trentino-Alto Adige. For negative measures (i.e., where an increase indicates a deviation from the targets) the minimum, rather than the maximum, is considered.

For many of the measures considered, the best-performing region(s)/Autonomous Province(s) are Valle d'Aosta, Trento and Bolzano. Overall, almost two thirds of the *bps* have been achieved in the North; over 50% have been achieved over the last 5 years (Figure 3.1).

For each measure *j*, the distance  $d_{j,i}$  of each region *i* from the best performance is calculated on the latest available data (usually *t*=2021)<sup>4</sup> and normalised by a traditional standardisation (*z*-*score*)<sup>5</sup>, to allow comparisons and aggregations of different measures.

<sup>3</sup> The following were excluded from the analysis: statistical measures that do not have a clear direction of improvement, those that are not available in time series or that have been updated at the latest in 2017 or before, measures which report absolute values and those which represent rates of change.

<sup>4</sup> For the sake of simplicity, the index t is excluded from the formulae.

<sup>5</sup>  $d_{j,i} = \frac{|x_{j,i} - bp_j|}{s_j}$  where  $s_i = \sqrt{\frac{1}{\#Reg} \sum_{i \in Reg} (x_{j,i} - \mu_j)^2}$  is the standard devation of the  $x_{j,i}$ 's (with  $\mu_j$  average over *i* of the  $x_{j,i}$ 's). In case of missing values for the Autonomous Provinces of Trento or Bolzano, data for the Trentino-Alto Adige region were entered (if available); in case of missing values for some (but not all) regions, the standard deviation has been calculated using only available regional data. On the measurement of distances see Gennari, P., e M. D'Orazio, 2020,"A statistical approach for assessing progress towards the SDG targets". Statistical Journal of the IAOS, Volume 36, Issue 4:1129-1142. https://doi.org/10.3233/SJI-200688 and OECD, 2022, The Short and Winding Road to 2030: Measuring Distance to the SDG Targets. Paris, France: OECD Publishing, https://doi.org/10.1787/af4b630d-en.



Figure 3.1 - Number of best performances, by region and year

The distance  $d_{j,i}$  can be interpreted as the distance from *bp* according to a standardised unit of measure (s.u., or unit of standard deviation)<sup>6</sup>.

To calculate, for each Goal, the overall distance of Italy and the regions from the best performance (i.e., from the overall performance of an ideal region that reaches the *bp* in each measure), the distances of the various statistical measures have been aggregated by applying a simple weighted<sup>7</sup> arithmetic average<sup>8</sup>. The distribution of regional distances from the best performance for each Goal is represented by the boxplot in Figure 3.2<sup>9</sup>.

7 If for every Goal *k*, with k=1,...,17, we consider the set  $\mathcal{H}_k$  of the UN-IAEG-SDGs indicators associated with the Goal, and each  $H \in \mathcal{H}_k$  is in turn the set of all statistical measures associated with indicator *H*, then the overall distance  $D_{k,i}$  of the region *i* for Goal *k* is defined as  $D_{k,i} = \sum_{n \in \mathcal{H}_k} \frac{1}{\#\mathcal{H}_k} \sum_{j \in H} \frac{1}{\#H} d_{j,i}$ . Note that by this way each UN-IAEG-SDGs indicator has the same weight, so that the "dimensionality" effect is kept under control and the relevance of the indicator does not depend on the number of statistical measures associated with it, measures that are often also highly correlated. Moreover, subjective choices about the relative importance of the indicators within the same Goal are avoided. See Gennari, P., e M. D'Orazio, 2020, "A statistical approach for assessing progress towards the SDG targets". Statistical Journal of the IAOS, Volume 36, Issue 4:1129-1142. <u>https://doi.org/10.3233/SJI-200688</u>; Chelli, F.M., B. Ermini, M. Gallegati, e A. Gentili. 2022. "Investigating Regional Disparities in Italy's Well-Being Since Unification (1871–2011)". Ital Econ J. <u>https://doi.org/10.1007/s40797-022-00206-2</u>.



<sup>6</sup> Considering the tertiles of the distribution of regional distances, a distance can be considered small if it is less than 1.3 s.u., medium if between 1.3 and 2.7 s.u., large if greater than 2.7 s.u. About three quarters of the distances are less than 3.

<sup>8</sup> The arithmetic mean is widely used in the literature both for the sake of simplicity and for the clarity in the readability of the results. In particular, the arithmetic mean is used by the OECD to calculate the distances from the targets, by Bertelsmann Stiftung and Sustainable Development Solutions Network for the calculation of the SDG Index and Dashboards, by Eurostat for the calculation of the status score of each country (Eurostat 2022). See Eurostat, 2022, Sustainable development in the European Union - Monitoring report on progress towards the SDGs in an EU context - 2022 edition. Luxembourg: Publications Office of the European Union, <a href="https://ec.europa.eu/eurostat/web/products-flagship-publications/-/ks-09-22-019">https://ec.europa.eu/eurostat/web/products-flagship-publications/-/ks-09-22-019</a>; OECD, 2022, The Short and Winding Road to 2030: Measuring Distance to the SDG Targets. Paris, France: OECD Publishing, <a href="https://doi.org/10.1787/af4b630d-en">https://doi.org/10.1787/af4b630d-en</a>; Sachs, J., C. Kroll, G. Lafortune, G. Fuller, e F. Woelm, 2022, Sustainable Development Report 2022. Cambridge, UK: Cambridge University Press, <a href="https://www.sdgindex.org/reports/sustainable-development-report-2022/">https://www.sdgindex.org/reports/sustainable-development-report-2022/</a>; Schmidt-Traub, G., C. Kroll, K. Teksoz, D. Durand-Delacre, e J.D. Sachs, 2017, "National baselines for the Sustainable Development Goals assessed in the SDG Index and Dashboards". Nature geoscience, Volume 10, Issue:8: 547-555. <a href="https://www.nature.com/articles/ngeo2985">https://www.nature.com/articles/ngeo2985</a>.

<sup>9</sup> In the boxplot the bottom and top edges of the box represent the first and third quartiles, while the inner horizontal segment represents the median. Vertical lines called "whiskers" extend from the ends of the box, at most one and a



Figure 3.2 - Overall distance of regions from the best performance, by Goal

An overall examination of the distances from the *bps* shows how the regions behave more or less heterogeneously, considering different Goals.

The Goals with lower variability are 3 (Good health), 11 (Sustainable cities and communities) and 12 (Responsible consumption and production). Goal 17 (Partnerships for the Goals), Goal 10 (Reduced inequalities) and Goal 8 (Decent work and economic Growth) are the ones with the largest interquartile range. The regions closest to the best performance (in the lower part of the figure) are mainly regions in the North, except for Marche for the Goal 12, Basilicata for the Goal 14 (Life below Water) and Abruzzo for the Goal 15 (Life on Land). In the upper part of the graph, conversely, there are the regions farthest away from the most favourable situations, which are mainly southern regions, with the exceptions of Friuli-Venezia Giulia for Goal 6 (Water) and 14, Valle d'Aosta for Goal 11, Emilia-Romagna for Goal 13 (Climate action) and Lombardia for Goal 15. Some regions are outliers: comparing to other regions, Bolzano, for Goal 7 (Affordable and clean energy), and Valle d'Aosta, for 16 (Peace and strong institutions), are less far from the best performance , while Sicilia, for Goal 6, and Sicilia and Sardegna, for 7, are much further away.

The details of the positioning of each region in relation to the best performance are illustrated by the radar charts in Figures 3.3-3.6, grouped according to the traditional "5 P" of the 2030 Agenda (People, Prosperity, Planet, Peace and Partnership). In the charts, the *bp* is represented by the central point, the average distance of Italy from the *bp* by the circle in bold and the distances of the regions by the coloured points.

In the area People (Figure 3.3), the distance from the best performance (represented in the radar chart as the central point) for Goal 3 (Good health) is similar for all regions,

half times the interquartile range. All values outside the whiskers are considered atypical (outlier).







(a) The central point of the radar chart represents the best performance and the circle in bold represents the Italian average (scale from 0 to 4).





Figure 3.4 - Overall distance of regions from the best performance, by Goal (Prosperity) (a)







(a) The central point of the radar chart represents the best performance and the circle in bold represents the Italian average (scale from 0 to 4).





(a) The central point of the radar chart represents the best performance and the circle in bold represents the Italian average (scale from 0 to 4).



approximating the average distance calculated for Italy (circle in bold). A greater variability characterises Goal 1 (Poverty), with the 8 southern regions external to the circle that perform worse than the Italian average, and, conversely, almost all the other regions within the circle, closer to the best performance. Similarly, for Goal 2 (Zero hunger) the southern regions show higher-than-average distances from the best performance, with the exception of Sardegna, but with the inclusion of Veneto. This is also the case for Goal 4 (Education), Basilicata and Abruzzo are comparable with the Italian average, the Autonomous Province of Bolzano shows a wider distance than the geographically neighboring regions. Finally, the profile of Goal 5 (Gender Equality) is more heterogeneous, with Liguria, Piemonte, Campania, Basilicata and Puglia more distant from the best performance.

In the area Prosperity, the Nord-South polarisation is high for Goal 10 and 8: southern regions are outside the circle that represents Italy and the central-northern regions closer to the best performance and to the Italian average, with the exception of Umbria for Goal 8. Goal 7 is more articulated: Sardegna, Sicilia e Puglia are furthest from the best performance, the Autonomous Provinces of Trento and Bolzano and the Valle d'Aosta are very close to the central point.

Goals 9 (Industry, innovation and infrastructure) and 11 show many points close to or overlapping with the Italian average profile. Nonetheless, they record trends above the country average; for Piemonte, Lombardia, Lazio and the Autonomous Province of Trento in Goal 9; for Sardegna, Lombardia, Friuli-Venezia Giulia and Lazio in Goal 11.

In the Goals in the Planet area, regional rankings are very different and often do not show the North-South dichotomy. In Goal 6 Lazio, Sicilia, Veneto and Friuli-Venezia Giulia are the only regions far from the centre and from the Italian average.

The Goal 14 radar chart shows that only Sicilia and Abruzzo are the southern regions outside the circle of the Italian average, conversely the other southern regions are inside and in some cases very close to the central point. Also in Goal 15 southern regions are the most virtuous, Piemonte, Lombardia, Veneto and Emilia-Romagna are the furthest from the centre. Finally, despite in Goal 12 regions are homogeneously close to the average for Italy, in Goal 13 regions are clustered around the centre of the graph, with the exception of Liguria, Campania and Emilia-Romagna.

Goal 16 and 17 in the Peace and Partnerships area show different situations. Goal 17 reflects the country's different speeds of technological innovation, with all the southern regions lagging behind in the ICT area and far from the central point. In Goal 16, the best results are located in the smallest regions, such as Valle d'Aosta, the Autonomous Province of Trento, Molise, Abruzzo and Umbria.





(a) The central point of the radar chart represents the best performance and the circle in bold represents the Italian average (scale from 0 to 4).

### 3.3 Gender inequalities

Goal 5 of the 2030 Agenda aims to achieve gender equality and empower all women and girls. It sets out nine targets relative to the elimination of all kind of discrimination, violence and harmful practices against women, the enhancement of female care and domestic work, the increase of women's participation in decision-making, the protection of female sexual and reproductive health, the recognition of equal opportunity to access to economic, natural and technological resources (see Goal 5).

Equality between women and men represents a shared and indispensable objective of social rights policies in Europe as well. It is the core of the new European Gender Equality Strategy 2020-2025, which promotes key actions to build 'a Europe where women and men, girls and boys, in all their diversity, are equal – where they are free to pursue their chosen path in life and reach their full potential, where they have equal opportunities to thrive, and where they can equally participate in and lead our European society' (See COM(2020) 152 final).

In Italy, the NRRP defines the reduction of gender inequality as one of the three cross-cutting priorities, identifying a useful application frame in the National Strategy for Gender Equality, in line with the European Strategy. The National Strategy for Gender Equality 2021-2026 sets out the measures envisaged for the achievement of the targets, within five strategic priorities: Employment, Income, Skills, Time and Power<sup>10</sup>. The context data analysed by the National Strategy also assess on the Gender Equality Index, made available by the European Institute for Gender Equality (EIGE), which provides an overall score for each country about performance in the main domains surveyed<sup>11</sup>. According to EIGE, Italy currently ranks fourteenth



<sup>10</sup> See Equal Opportunities Department - Presidency of the Council of Ministers. 2021. National Strategy for Gender Equality: (<u>https://www.pariopportunita.gov.it/media/2049/strategia\_parita-\_genere\_en.pdf</u>).

<sup>11</sup> The Gender Equality Index is a composite indicator that measures the complex concept of gender equality and, based on the EU policy framework, helps in monitoring progress over time in gender equality in the EU. Since 2013, it is calculated every two years taking into account 31 indicators for the 27 EU countries included in 6 core domains: Work, Money, Knowledge, Time, Power and Health. The area of Violence against women is not included in the calculation of the indicator but is monitored. The last edition of the index refers to 2021 (<u>https://eige.europa.eu/gender-equality-index/2021</u>).

in Europe, with a GEI score lower than the European average and far from the top three countries in the ranking (Sweden, Denmark and France), despite having completed the most important progress among all the countries of the European Union in recent years.

Taking into account the framework of national and international policies, this paragraph presents an in-depth analysis of gender imbalances starting from Istat-SDGs measures broken down by sex. The analysis refers to a set of measures well beyond those relating to Goal 5, considering each measure that contributes to the representation of the progress of the genders with respect to the goals of cultural, economic and civil growth requested by 2030 Agenda, and for whose monitoring the SDGs framework provides 52 indicators by gender or relating to specific aspects of the condition of women (Figure 3.7).





The Istat-SDGs system makes available 123 statistical measures broken down by gender. 100<sup>12</sup> measures have been selected for the analysis and categorised in a classification drawn up taking into account the areas identified by the European and national Gender Strategies, and the approach adopted by the Gender Budget<sup>13</sup> (Figure 3.8). The availability of territorial details for around half (47) of the measures considered allowed for a gender comparison also at the level of geographical area.

<sup>12</sup> Compared to the 123 statistical measures, the analysis does not include measures that are not available in time series and those with absolute values. The Goal 5 measures that are not broken down by gender (e.g. the proportion of women subjected to physical, sexual or psychological violence or the proportion of women in political representation, decision-making bodies, etc.) have also been excluded, even if referring to important aspects of women's empowerment (See Goal 5).

<sup>13</sup> The Gender Budget is a regulatory instrument introduced on an experimental basis by Article 38-septies of Law 196 of 2009 and approved by the Ministry of Economy and Finance, which aims to achieve greater transparency on the allocation of budgetary resources and their impact on men and women.

	TOTAL		WITH TERRITORIAL DETAIL		
ADEA	Istat-SDGs		Istat-SDGs		
AREA	statistical	Goal	statistical	Goal	
	meausures		meausures		
Competences	29	1	20	4 mm 5 mm 9 mm mm	
Reconciliation of work and family life	5	8 minutes a 11 min	4		
Empowerment and inclusion	15	5	5	5	
Work	11	3 minutes 8 minutes 4	9	8 million	
Income and risk of poverty (a)	18	1	2	17 1.199.1	
Health	22	3 internet	6	3 minute _−hy⊅	
Violence	2		1	16 mm	

#### Figure 3.8 - Istat-SDGs gender statistical measures, by area, Goal and territorial detail

(a) 2 statistical measures are in more than 1 Goal.

To study the temporal evolution of gender inequalities it has been used the concept of "gender trend", which interprets the gaps between men and women by signaling when indicators of sustainability are improving from a female perspective. The gender trend of a statistical measure is defined "positive" if the evolution of the measure over time - regardless of its general trend - is to the greater benefit of women compared to men, "stable" when there are no differences and "negative" when gender gaps are widening to the detriment of women. For each of the 100 measures, first we have computed the ratio between the women and the men value. We then have calculated a gender trend index over time as a simple variation between the ratio  $\frac{F}{M}$  at time *t* and at time *t-10*. We finally have applied the TCCA methodology to the varitions to classify the measures in three groups: positive, stable or negative trend<sup>14</sup>.

Main results show an overall positive evolution of gender gaps: a positive trend of the gender trend index is observed for the majority of the statistical measures (62, equal to 62%), 11 measures are stable, 27 show a negative trend. Income and Risk of poverty is one of the areas with the greatest improvements, thanks to the larger progress of the female component, compared to the male one, in almost all the measures considered. The other one is Empowerment and inclusion, driven by the greater increase in the share of residence permits for women and by the consistent reduction in the percentage of women unsentenced detainees. Gender gaps are instead more frequently stable or worsening in the areas of Health and Competences (Figure 3.9).



<sup>14</sup> The criteria used to classify the gender trends of the statistical measures as positive, stable or negative are the same used in Chapter 1 and take into account, also in this case, the direction of the measures (see note 5, Chapter 1).



Figure 3.9 - Istat-SDGs statistical measures, by gender trend and area (a): last available year compared to 10 years before

Following the insights of Chapter 1, the summary of the evolution of gender inequalities over the last 10 years has been outlined by the combination of the gender trend index (horizontal axis Figure 3.10) with the time evolution of statistical measures (vertical axis).



Figure 3.10 - Istat-SDGs statistical measures, by time evolution and gender trend: last available year compared to 10 years before

<sup>(</sup>a) The number of statistical measures associated to each area is indicated in brackets.

The statistical measures with a positive gender trend show an improvement over time in 40 cases, they are stable in 2 cases, and get worse in 20 cases. Among the measures of the first group (positive gender trend and improving over time), the risk of poverty or social exclusion fell down from 28.1% to 25.3% between 2011 and 2021, marking a larger contraction for women (from 29.8% to 26.0%) than for men (from 26.3% to 24.8%). Conversely, among the measures that associate an improvement in gender gap with a worsening trend there is the rate of diabetes in the population, which, although increasing from 5.8% in 2011 to 6.7% in 2021, highlights the ratio between the genders falling from 89 to 82 women every 100 men.

The statistical measures with a negative gender trend show an improvement over time in 19 cases, and a deterioration in 8 cases. The rate of fatal occupational injuries or injuries leading to permanent disability indicates a worsening of gender trend and an improvement over time, showing, from 2011 to 2020, a faster decline for men (from 19.3 to 11.9 per 10,000 employed) than for women (from 7.1 to 4.9).

Among the measures reporting the most critical situation (worsening time evolution and negative gender trend), there is the inadequate level of literacy. Between 2012 and 2018, the share of 15-year-old students with inadequate reading skills increased from 19.5% to 23.3%, with a growth of 1.7 percentage points for boys (from 26.0% to 27.7%) and of 6.1 p.p. for girls (from 12.5% to 18.6%).

The in-depth study of gender at territorial level points out a three macro-regions (North, Centre and South and Islands) classification to combine the larger number of statistical measures available at territorial level. The intersection of two of the three cross-cutting perspectives indicated by the NRRP is relevant in signaling particularly critical situations in terms of coexistence of disadvantages due to gender inequality and territorial differences.

The resulting 47 Istat-SDGs statistical measures (Figure 3.8) are concentrated in the Competences area, represented by 21 measures, 14 of which belong to Goal 4, in the Work area (9 measures) and Health (6 measures).

Results (Figure 3.11) show that gradual improvement of gender inequalities is more pronounced in central and southern regions (respectively 26 and 27 measures with a positive trend out of 47, and 14 and 15 measures with a negative trend) compared to the northern one (23 measures with a positive trend and 20 with a negative trend). The result is due to the contribution of the Competences and Work areas. The first shows a positive gender trend for 12 measures out of 20 in the Centre and 13 measures in the South and Islands (10 in the North). In the second, a reduction in gender gaps is observed in 7 measures out of 9 in the Centre and 6 in the South and Islands, while it is 4 in the North.





Figure 3.11 - Istat-SDGs statistical measures, by gender trend, area and geographical area: last available year compared to 10 years before

The full mapping of the measures by area and Goal is presented in Table 1.

# Table 1 - Classification of Istat-SDGs gender measures by area, Goal, last available year, female/male percentage ratio, variations compared to 10 years before and gender trend

GOAL	1 there the second seco	LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS BEFORE	GENDER TREND COMPARED TO 10 YEARS BEFORE
Goal 1 - End poverty in all its forms everywhere	People aged 6 and over who use their mobile phone every day, per 100 people with the same characteristics	2021	97,3		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 13)	2022	81,2	Ŏ	Ŏ
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 13)	2022	120,3	Ŏ	Ŏ
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	People with high level of IT competencies	2019	75,7		Ō
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	STEM graduates	2019	67,2		
Goal 4 - Ensure inclusive and equitable quality education and promote lifetong learning opportunities for all	Inadequate level of literacy (15-year-old students)	2018	67,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifetong learning opportunities for all	Inadequate level of mathematics (15-year-old students)	2018	111,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of science (15-year-old students)	2018	100,4		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 8)	2022	110,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 8)	2022	77,2		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of English listening competence (students in grade 8)	2022	84,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of English reading competence (students in grade 8)	2022	74,2		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of literacy (students in grade 13)	2022	78,5		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of numeracy (students in grade 13)	2022	118,6		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of English listening competence (students in grade 13)	2022	88,9		
Goal 4 - Ensure inclusive and equitable quality education and promote lifetong learning opportunities for all	Inadequate level of English reading competence (students in grade 13)	2022	84,9		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Individual who have basic or above basic overall digital skills	2019	85,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Inadequate level of financial literacy (15-year-old students)	2018	111,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Financial literacy score of adults	2020	96,5		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Implicit Leavers from Education and Training (students in grade 13)	2022	61,7		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Participation rate in organized learning (one year before the official primary entry age)	2020	99,1		
Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Participation rate of youth and adults (25-64) in formal and non-formal education and training in the previous 12 months	2016	88,9		
Goal 5 - Achieve gender equality and empower all women and girls	People aged 16-74 who used internet once a week (including every day) in the last 3 months	2021	96,3		
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Impact of knowledge workers on employment	2021	164,3		
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	ICT specialists in employment	2021	25,5		
Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Researchers (in full time equivalent)	2019	50,0		

.



# Table 1 follow - Classification of Istat-SDGs gender measures by area, Goal, last available year, female/male percentage ratio, variations compared to 10 years before and gender trend

RECONCILIATION OF WORK AND FAMILY LIFE	5 minut	LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS BEFORE	GENDER TREND COMPARED TO 10 YEARS BEFORE
Goal 5 - Achieve gender equality and empower all women and girls	Proportion of time spent on unpaid domestic and care work	2014	259,5		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Employed persons working from home	2021	133,1		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Frequent users of public transport	2021	110,1		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Students who travel to their study place, only by public transports	2021	112,9		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Employed persons who usually travel by private transportation to work place	2021	89,7		
EMPOWERMENT AND INCLUSION	5 mm	LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS BEFORE	GENDER TREND COMPARED TO 10 YEARS BEFORE
Goal 5 - Achieve gender equality and empower all women and girls	People aged 6 and over who use their mobile phone every day, per 100 people with the same characteristics	2021	97,3		
Goal 10 - Reduce inequality within and among countries	Percentage of Non EU citizens holding a long-term residence permit	2021	102,2		
Goal 10 - Reduce inequality within and among countries	Number of acquisitions of citizenship	2020	97,9		
Goal 10 - Reduce inequality within and among countries	Percentage of new permits issued for asylum and other humanitarian reasons	2020	33,0		
Goal 10 - Reduce inequality within and among countries	Residence permits for asylum per 1,000	2021	60,4		
Goal 13 - Take urgent action to combat climate change and its impacts	Concern for climate change	2021	100,8		
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions livelli	Trust in judicial system	2021	104,3		
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions livelli	Trust in police and fire brigade	2021	101,4		
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions livelli	Prison density	2021	92,6		
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions livelli	Unsentenced detainees as a proportion of overall prison population	2021	96,2		
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions livelli	Juveniles unsentenced detainees as a proportion of overall prison population	2020	64,0		
Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	Individuals aged 6 years and over who used the Internet in the last 3 months	2021	91,9		
Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	People who ordered/purchased goods or services for private use on the internet in the last 3 months	2021	88,9		
Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	People who carried out online banking transactions (internet banking) in the last 3 months	2021	82,9		
Goal 17 - Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	People who have interacted online with the Public Administration or public service providers	2021	92,1		

	_	_	_
1/1/		_	
~ ~			



GOAL		LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS BEFORE	GENDER TREND COMPARED TO 10 YEARS BEFORE
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Physicians	2021	76,6		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	People not in education, employment, or training (NEET)	2021	117,9		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Employment rate (20-64 years old)	2021	73,5		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Non-participation rate	2021	139,4		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Share of employed persons with temporary jobs for at least 5 years	2021	94,4		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Dipendenti con bassa paga	2020	142,4		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Incidence rate of fatal occupational injuries or injuries leading to permanent disability	2020	41,2		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Involuntary part time	2021	275,4		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Hourly earnings	2018	94,6		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Unemployment rate	2021	121,8		
Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	People not in education, employment, or training (NEET) (aged 15-24)	2021	102,6		
# 3. "No one left behind": Istat-SDGs statistical measures to measures inequality

# Table 1 follow - Classification of Istat-SDGs gender measures by area, Goal, last available year, female/male percentage ratio, variations compared to 10 years before and gender trend

INCOME AND RISK OF POVERTY					
604		LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS BEFORE	GENDER TREND COMPARED TO 10 YEARS BEFORE
Goal 1 - End poverty in all its forms everywhere	Absolute poverty (incidence)	2021	97.9		
Goal 1 - End poverty in all its forms everywhere	Severe material deprivation rate	2021	91,5		
Goal 1 - End poverty in all its forms everywhere	Very low work intensity	2021	115,7	ŏ	
Goal 1 - End poverty in all its forms everywhere	Unmet need for medical examination	2021	138,0	Ŏ	
Goal 1 - End poverty in all its forms everywhere	Housing cost overburden rate	2021	107,1		
Goal 1 - End poverty in all its forms everywhere	At risk of poverty or social exclusion - AROPE	2021	104,8		
Goal 1 - End poverty in all its forms everywhere	In-work at-risk-of-poverty rate	2021	60,9		
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Population aged 16 and over reporting unmet needs for medical care due to being too expensive	° 2020 15			
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	Inability to keep home adequately warm	2021	94,0		
Goal 10 - Reduce inequality within and among countries	Disposable income inequality (s80/s20)	2020	98,3		
Goal 10 - Reduce inequality within and among countries	People at risk of poverty	2021	106,7		
Goal 10 - Reduce inequality within and among countries	Growth rates of household income per capita among the bottom 40 per cent of the population	2020	91,0		
Goal 10 - Reduce inequality within and among countries	Growth rates of household income per capita among the total population	2020	100,0		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Overcrowding rate	2021	96,2		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Noise from neighbours or from street	2021	97,8		
Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable	Share of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor	2021	100,0		
HEALTH	2	LAST AVAILABLE YEAR	FEMALE/MALE RATIO	VARIATION COMPARED TO 10 YEARS	GENDER TREND COMPARED TO 10 YEARS
GOAL	STATISTICAL MEASURE			BEFORE	BEFORE
Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Overweight or obesity among minors from 3 to 17 years of age	2020	79,5		
Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Overweight or obesity among minors from 3 to 5 years of age	2020	99,1		
Goal 2 - End hunger, achieve food security and improved nutrition and promote Prevalence of moderate or severe food insecurity			101,6		

Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Overweight or obesity among minors from 3 to 5 years of age		99,1	
Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Prevalence of moderate or severe food insecurity	2019	101,6	
Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Prevalence of severe food insecurity	2019	40,0	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Healthy life expectancy at birth	2021	96,0	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Overweight or obesity (standardized rates)	2021	66,6	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Fumo (tassi standardizzati)	2021	69,3	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Alcohol consumption (standardized rates)	2021	44,9	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Tuberculosis incidence per 100,000 population	2020	51,0	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Number of road traffic fatal injuries	2021	20,0	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Unintentional poisoning standardized mortality rate	2019	57,9	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Road accidents serious harmfulness rate	2020	38,7	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Neonatal mortality rate	2019	86,3	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Age standardised death rate due to road traffic injuries	2021	18,5	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Under-five mortality rate	2021	85,4	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Probability of dying between ages 30 and 69 years from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	2019	61,6	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Number of deaths attributed to suicide	2019	28,6	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Persons on antiretroviral therapy (ART)	2020	105,6	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Hypertension (standardized rates)	2021	90,4	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Diabetes (standardized rates)	2021	82,4	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Number of new HIV infections per 100,000	2020	25,0	
Goal 3 - Ensure healthy lives and promote well-being for all at all ages	Age standardised suicide mortality rate	2019	26,1	
VIOLENCE	16 minute mention	LAST	FEMALE/MALE	 GENDER

	-4	YEAR	RATIO	COMPARED TO 10 YEARS	COMPARED TO 10 YEARS
GOAL	STATISTICAL MEASURE			BEFORE	BEFORE
Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all	Intentional homicide rate	2020	66,7		
levels Goal 16 - Promote peaceful and inclusive societies for sustainable development, provide					
access to justice for all and build effective, accountable and inclusive institutions at all levels	Perception of safety walking alone in the dark	2021	69,1		



.

# 4. NATIONAL AND INTERNATIONAL PROCESSES RELATED TO THE ISTAT-SDGs SYSTEM<sup>1</sup>

# 4.1 The global process for the implementation of the 2030 Agenda and the indicators defined by the United Nations in the IAEG-SDGs

The 2030 Agenda for Sustainable Development proposed a conceptual revolution, based on some fundamental principles. The universality scope principle and the consequent involvement of all countries; the "Leave no one behind" principle under which the 2030 Agenda aims to benefit all people and commits not to leave anyone behind, reaching all people in need and disadvantaged, wherever they are, in a way targeted to their specific challenges and vulnerabilities. This has generated an unprecedented request for local and disaggregated data to analyse results and monitor progress. Moreover, there is the principle of interconnection and indivisibility, according to which economic, social, environmental and institutional objectives must be developed in an integrated manner: goals cannot be categorised as unequivocally economic, social or environmental, because the targets that compose them can also have very diverse values and must be addressed in their entirety and not as a list of individual objectives<sup>2</sup>. Finally, the principle of inclusiveness must be considered, in order to ensure the full inclusion of people and places, from the global to the local level. Partnerships, involving a plurality of stakeholders, is essential to ensure both sustainability and well-being. The interconnections between sustainability, climate change, hazardous events and disasters are evident and human well-being is intrinsically linked to the health of natural ecosystems.

The High-level Political Forum on Sustainable Development (UN HLPF SDG) plays a central role in monitoring the results of policies concretely developed by countries. This Forum meets annually, proposing constant revisions of national sustainable development plans and related funding frameworks. In the current cycle, the topics discussed in the last Forum (July 2022) were: 'building back better from the coronavirus disease (COVID-19), while advancing the full implementation of the 2030 Agenda for Sustainable Development', as regards 2022, and 'accelerating the recovery from the coronavirus disease (COVID-19) and the full implementation of the 2030 Agenda for Sustainable Development at all levels', as regards 2023. The focus of the 2022 HLPF was on an in-depth analysis of the objectives dedicated to education and youth (Goal 4), women (Goal 5), protection of marine (Goal 14) and terrestrial (Goal 15) ecosystems and partnerships (Goal 17). In 2023 the focus will be on the objectives dedicated to water (Goal 6) and energy (Goal 7) resources, enterprises, innovation and infrastructure (Goal 9), sustainable cities (Goal11) and Goal 17, which deals with the creation of partnerships.



<sup>1</sup> This chapter was edited by Angela Ferruzza and section 4.3 by Luigi Costanzo with contributions by Giovanna Tagliacozzo and Paola Ungaro.

<sup>2</sup> See National Statistical Institute - Istat. SDGs Report, years 2018, 2019, 2020, 2021. Rome: Istat. <u>https://www.istat.</u> <u>it/it/archivio/rapporto+sdgs</u>.

Each country regularly presents, within the framework of the HLPF, the Voluntary National Review (VNR)<sup>3</sup>, *i.e.* voluntary national assessments, aimed to facilitate the sharing of experiences undertaken to accelerate the implementation of the 2030 Agenda, including through the reinforcing of the mobilisation of the various stakeholders. VNRs devote a substantial part to the monitoring of targets and related statistical measurement. Italy presented this year, as part of the latest UN-HLPF SDG, its second VNR<sup>4</sup>, which represents an update compared to the first version of 2017.

Statistical measurement has been considered, from the beginning of the programme, an indispensable tool. The Inter Agency Expert Group on SDGs (UN-IAEG-SDGs), established by the Statistical Commission –which Istat participates in as an expert country representing Western and Southern Europe – has defined a shared framework of statistical information, as a tool for monitoring and analysing sustainability.

Following the 2020 revision of the initial framework adopted in 2016, the current version proposed by the UN-IAEG-SDGs<sup>5</sup> presents 231 indicators, although the total number considered is 248<sup>6</sup>, as some measures are repeated in multiple targets<sup>7</sup>. The indicators<sup>8</sup> are classified according to two levels: more than half, 136, are Tier I, *i.e.* indicators produced by most of the countries, 91 are Tier II and, therefore, they are not always available<sup>9</sup>. The activities of this group are going on to refine the indicators and improve the metadata<sup>10</sup>, and, after the 2020 revision, a new revision is scheduled for 2025, for which the Group's initiatives and activities are already underway.

The work plan provides, inter alia, further activities dedicated to possible breakdowns of indicators<sup>11</sup>, especially with regard to territory and gender, in compliance with the principle No one left behind, the revision of indicators and metadata, the improvement of the flow of statistical information. There are currently three working groups dedicated specifically to: Statistical Data and Metadata Exchange (SDMX)<sup>12</sup>, Geospatial information<sup>13</sup> and Measurement of development support<sup>14</sup>.

<sup>3</sup> See <u>https://hlpf.un.org/2022/vnrs</u>.

<sup>4</sup> See paragraph 4.5.

<sup>5</sup> The Global Indicator Framework was adopted by the General Assembly in resolution 71/313 and proposed for revisions to the 51<sup>st</sup> session of the Statistical Commission in 2020 and at the 56<sup>th</sup> session in 2025. The official indicator list includes the global indicator framework as contained in A/RES/71/313, the refinements agreed by the Statistical Commission at its 49<sup>th</sup> session in March 2018 (E/CN.3/2018/2, Annex II) and 50<sup>th</sup> session in March 2019 (E/CN.3/2019/2, Annex II), changes from the 2020 Comprehensive Review (E/CN.3/2020/2, Annex II) and refinements (E/CN.3/2020/2, E/CN.3/2020/2, Annex III) from the 51<sup>st</sup> session in March 2020, refinements from the 52<sup>nd</sup> session in March 2021 (E/CN.3/2021/2, Annex) refinements (E/CN.3/2022/2, Annex I) and decision (53/101) by the 53<sup>rd</sup> United Nations Statistical Commission (E/2022/24-E/CN.3/2022/41).

<sup>6</sup> See https://unstats.un.org/sdgs/files/Tier%20Classification%20of%20SDG%20Indicators\_9%20Jun%202022\_web.pdf.

<sup>7</sup> The indicators that are repeated on multiple targets are the following:7.b.1/12.a.1, 8.4.1/12.2.1, 8.4.2/12.2.2, 10.3.1/16.b.1, 10.6.1/16.8.1, 13.2.1/13.b.1, 15.7.1/15.c.1, 15.a.1/15.b.1, 1.5.1/11.5.1/13.1.1, 1.5.2/11.5.2, 1.5.3/11.b.1/13.1.2, 1.5.4/11.b.2/13.1.3, 4.7.1/12.8.1/13.3.1.

<sup>8</sup> See https://unstats.un.org/sdgs/metadata.

<sup>9</sup> At the first level belong all the indicators with established methodology and standards, and regularly produced by the countries; in the second level are the indicators that, despite having established methodology and standards, are not regularly produced. The remaining 4 indicators belong to several levels, given the heterogeneity of their components.

<sup>10</sup> The UN-IAEG-SDGs metadata define the indicators proposed for monitoring and describe the methodologies necessary for their implementation.

<sup>11</sup> See <u>https://www.adb.org/publications/guidebook-data-disaggregation-sdgs</u>.

<sup>12</sup> See <u>https://unstats.un.org/sdgs/iaeg-sdgs/sdmx-working-group/</u>.

<sup>13</sup> See <u>https://ggim.un.org/UNGGIM-wg6/</u>.

<sup>14</sup> See https://unstats.un.org/sdgs/iaeg-sdgs/working-group-on-measurement-of-development-support/.

The last report on global dynamics basing on data by the United Nations was released in July 2022<sup>15</sup>; the *Global SDG Indicators Database is also available*<sup>6</sup>, which collects statistical information and is updated every six months.

### 4.2 European initiatives for the realisation of the 2030 Agenda

The 8<sup>th</sup> Environment Action Programme<sup>17</sup> (EAP) has made explicit the European vision aimed at a long-term programme to allow the realisation of the Pillar of citizens well-being ("citizens live well, within the planetary boundaries")<sup>18</sup>, defining the achievement of the environmental objectives by 2030 with the 2050 vision<sup>19</sup>.

The European Green Deal<sup>20</sup> (EGD) aims to build an economy that considers a resource use efficient, climate-neutral, for a sustainable future that must leave no one behind in the green transition.

The European Union has therefore asked to develop National Recovery and Resilience Plans (NRRP) in line with the need to ensure a transition towards a clean, circular, competitive and climate-neutral<sup>21</sup> economy. The Ecological Transition is crucial and stems directly from the EGD and the defined targets for achieving climate neutrality by 2050 and reducing greenhouse gas emissions by 55% by 2030 (compared to 1990).

The European Statistical System Action Plan (October 2021) clarifies that more and better quality data and statistics are needed to support policies under the European Green Deal. The European Statistical System plays a central role in ensuring high-quality European statistics to make the EU economy sustainable by turning climate and environmental challenges into opportunities.

The priorities for the production of statistical information have therefore been defined: around two-thirds of the activities to be developed in the statistical plan concern the environment, climate change, energy, transport and geo-localised statistics.

21 Com (2019) 650 final of 17 December 2019; Annual Sustainable Growth Strategy 2020. Com (2020) 21 final of 14 January 2020; Green Deal Investment Plan. Com (2020) 22 final of 14 January 2020; Proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund. Com (2020) 14 final of 14 January 2020; A strong social Europe for Just Transitions. Com (2020) 67 final of 19 February 2020; Sharing Europe's Digital Future. Com (2020) 80 final of 4 March 2020; Proposal for a Regulation of the European Parliament and of the Council establishing

the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law). Com (2020)\_112 final of 13 March 2020; Coordinated Economic Response to the COVID-19 Outbreak.

Working Document of 17 April; First "ERAvsCORONA" Action Plan.

Com (2020) 152 of 5 March 2020; A Union of Equality: Gender Equality Strategy 2020-2025.

<sup>15</sup> See https://unstats.un.org/sdgs/report/2022/.

<sup>16</sup> See <u>https://unstats.un.org/sdgs/dataportal</u>.

<sup>17</sup> See <u>https://ec.europa.eu/environment/pdf/8EAP/2020/10/8EAP-draft.pdf</u>.

<sup>18</sup> See National Statistical Institute - Istat. 2022. 2021 SDGs Report. Rome: Istat. https://www.istat.it/en/archivio/266473.

<sup>19</sup> A healthy environment is necessary for the well-being of citizens, biodiversity and ecosystems must be protected to enable resilience to climate change and other environmental risks, the circular economy must be ensured through zero production of waste and greenhouse gases and economic growth leading to decoupling between resource use and environmental degradation.

<sup>20</sup> See https://eur-lex.europa.eu/legal-content/IT/TXT/?qid=1596443911913&uri=CELEX:52019DC0640#document2.

Com (2020) 102 final of 10 March 2020 on a new industrial strategy for Europe.

Eurostat produces annually the report "Sustainable development in the European Union - Monitoring report on progress towards the SDGs in an EU context", which updates the analysis of the EU situation towards the objectives of the 2030 Agenda, through the selection of 100 indicators<sup>22</sup>.

### 4.3 The European Green Deal and Statistical Measures for Sustainable Development

Eurostat has proposed a set of 26 statistical indicators to monitor the implementation of the European Green Deal<sup>23</sup>, combined with three macro-objectives:

- Enabling an ecological and just transition (8 indicators),
- Protecting our planet and health (9 indicators),
- Reducing our impact on climate (9 indicators).

The set of Istat-SDGs statistical measures includes a broad subset of these measures (Table 4.1)<sup>24</sup>, allowing comparisons over time between countries targeting both individual indicators and the three macro-objectives of the European strategy.

Considering the period from 2009 to 2021, divided into two equal amplitude intervals (2009-2015 and 2015-2021, with one overlap year), the ratio between the arithmetic averages of the values in the two ranges was calculated for each measure. Based on the values of this ratio, and taking into account the indicators direction, trends are considered to be stable, improving or worsening according to the diagram in Figure 4.1.

Figure 4.1 - Diagram for assessment of medium-term trends of EGD indicators

$\frac{Avg. of available values (2015 - 21)}{Avg. of available values (2009 - 15)}$	0.8	85 0.	95 1.	05
POSITIVE INDICATORS (increase desirable)	sharp deterioration	slight deterioration	stability	slight improvement
NEGATIVE INDICATORS (decrease desirable)	sharp improvement	slight improvement	stability	slight deterioration

Sourse:

Similarly, Italy's positioning respect to EU27 average was assessed on the basis of the ratio between Italy and EU27 measures, taking into account their direction. Statistical measures are considered to be aligned with European values when the deviation between Italy and EU27 is within  $\pm$  5 % and worse or better than EU27 average, depending on their direction, in the other cases.

<sup>22</sup> See <u>https://ec.europa.eu/eurostat/web/products-statistical-books/-/ks-09-22-01</u>9.

<sup>23</sup> Eurostat, Statistics for the European Green Deal (<u>https://ec.europa.eu/eurostat/cache/egd-statistics/</u>).

<sup>24</sup> The analysis considers 26 statistical measures (17 identical and 2 disaggregated by different modes), all belonging to the Istat-SDGs system. For the detailed analysis of the statistical measures trend, please see Chapter. 2.

#### Table 4.1 - Indicators proposed by Eurostat for monitoring EGD and statistical measures disseminated by Istat in the SDGs and Bes systems

Macro- objectives	Indicators proposed by Eurostat Corresponding statistical measures for Italy				
	Domestic material consumption		<b>M</b> 📀	8.4.2/12.2.2 — Domestic material consumption per capita	
	Circular material use	rate	00	12.5.1 — Circular material use rate	
	R & D expenditure		🛞 bes	9.5.1 — R&D intensity	
ENABLING A GREEN AND	Population unable to warm	keep home	it.++.1	1.4.1/7.1.1 — Inability to keep home adequately warm	
JUST TRANSITION	GHG emission intensity of employment		_	_	
	High-speed Internet		haad 🛞 🛞	1.4.1/9.c.1/17.6.1 — Households with fixed and/or mobile broadband connection	
	Environmental tax re	venues	_	_	
	Environmental protect expenditure	ction	_	_	
	Forest and other woo	oded land		15.1.1 — Forest area index	
	Protected areas	(Terrestrial)	🕑 bes	15.1.2 — Protected natural areas	
		(Marine)		14.5.1 —Marine Protected Areas EUAP	
	Common bird index		_	_	
PROTECTING	Organic farming area		<u> </u>	2.4.1 — Share of utilized agricultural area under organic farming	
OUR PLANET AND HEALTH	Nitrate in groundwater		_	_	
	Pesticide use		_	_	
	Consumption of haza chemicals	ardous	_	_	
	Exposure to air	(PM <sub>2.5</sub> )	Alla	11.6.2 — PM <sub>2.5</sub> Annual average concentration in the municipalities capital of the province/metropolitan cities	
	pollution (a)	(PM <sub>10</sub> )		11.6.2 — $PM_{10}$ Annual average concentration in the municipalities capital of the province/metropolitan cities	
	Generation of waste		_	_	
	Greenhouse gas emissions		0	13.2.2 — Greenhouse gas emissions (GHG) accounts totals generated by production activities (Total: Ateco A	
	GHG emissions by sector			B+C, D, E)	
	Climate related econ	omic losses	_		
		(Total)	ø	7.2.1 — Renewable energy share in the gross final energy consumption	
	Panawahla anaray	(Transport)		7.2.1 — Renewable energy share in transport sector (in the gross final energy consumption)	
REDUCING OUR	Nellewable ellergy	(Electricity)	📀 bes	7.2.1 — Electricity from renewable sources	
IMPACT		(Heating and cooling)	Ø	7.2.1 — Renewable energy share in thermal sector (in the gross final energy consumption)	
	Primary energy cons	umption	_	_	
	Households energy consumption		0	7.3.1 — Final energy consumption in households per capita	
	Zero-emission vehicl	es	0	7.1.2 — Electric or hybrid passenger cars (Electric cars)	
	Passenger transport		_		
	Freight Transport		8	9.1.2 — Freight volumes, by mode of transport (Rail transport, Road transport) (b)	

Source: (a) The indicator was replaced in the last update with "Years of life lost due to PM2.5 exposure" (not available for Italy). (b) Indicator not available for Italy for "Inland waterways" and "Road+Inland waterways".



Tables 4.2, 4.3 and 4.4 show the results of the comparison of the available measures for each of the three macro-objectives. The assessment of medium-term trends, for Italy and EU27, is represented on the scale of five classes in Figure 4.1 (net improvement, slight improvement, stability, slight worsening, net worsening). The positioning of Italy compared to EU27 average is represented in the last column, which shows the values of the Italy/EU27 ratio for the last available year. Green background indicates Italy's position of advantage over the EU average; red indicates a disadvantage; finally grey represents substantial similarity between Italy and EU27 (the values do not differ by more than 5%).

#### Table 4.2 - Enabling a green and just transition

Statistical measure (direction)		Unit of measurement	Medium-t (average 2015-21	Italy/EU27 (most recent	
		licity	Italy	Ue27	
8.4.2,	Domestic material consumption	Tonne per	sharp improve-	stability	0.567 (2020)
12.2.2		linabitant			
12.5.1	Circular material use rate (+)	Percentage values	sharp improve- ment	slight improve- ment	1.688 (2020)
9.5.1	R&D intensity (+)	Percentage of GDP	slight improve- ment	slight improve- ment	0.659 (2020)
1.4.1,	Inability to keep home	Percentage	sharp improve-	sharp improve-	1.122 (2020)
7.1.1	adequately warm (-)	values	ment	ment	
1.4.1, 9.c.1, 17.6.1	Households with fixed and/or mobile broadband connection (+)	Percentage values	sharp improve- ment	sharp improve- ment	1.301 (2020)

Source: Istat processing on Istat-SDGs statistical measures and Eurostat data

#### Table 4.3 - Protecting our planet and health

Statistical measure (direction)		Unit of mea- surement Italy	Medium-te (average 201 2009	Medium-term trends l' (average 2015-21/average 2009-15) c	
			EU27		
15.1.1	Forest area index (+)	Percentage values	stability	stability	0.884 (2018)
15.1.2	Protected natural areas [Terrestrial] (+)	Percentage values	stability	sharp improve- ment	0.889 (2017)
14.5.1	Marine Protected Areas EUAP (+)	km <sup>2</sup>	stability	sharp improve- ment	—(a)
2.4.1	Share of utilized agricultural area under organic farming (+)	Percentage values	sharp improve- ment	sharp improve- ment	1.802 (2020)
11.6.2	PM <sub>25</sub> Annual average concentration in the municipalities capital of the province/met-ropolitan cities (-)	Micrograms per m <sup>3</sup>	sharp improve- ment	sharp improve- ment	1.198 (2019)
	$\rm PM_{10}$ Annual average concentration in the municipalities capital of the province/metropolitan cities (–)	Micrograms per m <sup>3</sup>	slight improve- ment	slight improve- ment	1.244 (2019)

Source: Istat processing on Istat-SDGs statistical measures and Eurostat data (a) Not applicable.

#### Table 4.4 - Reducing our climate impact

Statistical measure (direction) Italy		Unit of mea- surement	Medium-te (average 201	Medium-term trends (average 2015-21/average 2009-15)		
						uala)
13.2.2 Greenhouse gas emis-		Total economic activ- ities	Tonne CO <sub>2</sub> equivalent <sup>2</sup>	slight improve- ment	slight improve- ment	— (a)
	accounts totals generated by	(A) Agriculture, forestry and fishing	Tonne CO <sub>2</sub> equivalent <sup>2</sup>	stability	stability	— (a)
	production activities (-)	(B+C) Mining and quar- rying + Manufacturing	Tonne CO <sub>2</sub> equivalent <sup>2</sup>	sharp improve- ment	stability	— (a)
		(D) Electricity, gas, steam and air condi- tioning supply	Tonne CO <sub>2</sub> equivalent <sup>2</sup>	sharp improve- ment	slight improve- ment	— (a)
		(E) Water supply, sew- erage, waste manage- ment and remediation activities	Tonne CO equivalent <sup>2</sup>	stability	slight improve- ment	— (a)
7.2.1	7.2.1 Renewable energy share in the grant final energy consumption (+)		Percentage values	sharp improve- ment	sharp improve- ment	0.923 (2020)
	Renewable energiest sector (in the grossumption) (+)	gy share in transport oss final energy con-	Percentage values	sharp improve- ment	sharp improve- ment	1.049 (2020)
	Electricity from re	enewable sources (+)	Percentage values	sharp improve- ment	sharp improve- ment	1.024 (2020)
	Renewable energy share in thermal sector (in the gross final energy consumption) (+)		Percentage values	slight improve- ment	slight improve- ment	0.861 (2020)
7.3.1	Final energy consumption in households per capita (-)		Kg of oil equivalent	stability	stability	1.489 (2019)
7.1.2	Electric or hybrid passenger cars (Electric cars) (+)		Percentage values	sharp improve- ment	sharp improve- ment	0.415 (2020)
9.1.2	Transported volumes of goods, by	Rail transport (+)	Percentage values	(not available)	stability	0.787 (2020)
mode of trans- port**		Road transport (−)	Percentage values	(not available)	stability	1.097 (2020)

Source: Istat processing on Istat-SDGs statistical measures and Eurostat data (a) Not applicable for partial coverage of Eurostat indicators.

The comparison shows a widespread improvement in indicators (over 60% of measures) on all three macro-objectives, both for Italy and for EU27 (Figure 4.2). The most favourable situation was observed for the objective of ecological and fair transition, where all 5 measures for Italy (and 4 out of 5 for EU27) indicate an improvement between the two sub-periods of reference. Compared to the objective of reducing the impact on climate, Italy and EU27 presented improvements for about 60 % of the measures (8 out of 13) and stability for the others. For the objective of protecting planet and health Italy showed a more unfavourable situation compared to EU27 (respectively, 3 and 5 of the 6 measures were in progress).







The comparison between Italy and EU27 over the period 2019-2021 shows a worse performance in Italy (2 out of 3 measures excluding those that do not allow comparison; Figure 4.3). Italy reported an advantage, compared to EU27 average, on the ecological and just transition (3 out of 5).

The analysis here proposed is purely exploratory and the significance of its results is limited by the partial coverage of the Eurostat indicator set. However, two traits emerge clearly that can be confirmed by more comprehensive analyses. On the one hand, there is a general convergence of Italy and the Union on the objectives of the Green Deal, as a result of the policies undertaken for some time by the European Commission and the single Member States (with less satisfactory results, including at European level, in terms of reducing climate impact). On the other hand, despite the progress over the last decade, Italy is still lagging behind, in particular on the objectives of protecting the planet and health and reducing the impact on climate.





Source: Istat processing on Eurostat data

(a) Only measures allowing comparison between Italy and EU27 (18 out of 24) are considered.

Source: Istat processing on Eurostat data

## 4.4 Statistical measures for the monitoring of the National Sustainable Development Strategy and for the Voluntary National Review

The Ministry of Environment and Energy Security (MEES), as far as the national dimension is concerned, and the Ministry of Foreign Affairs and International Cooperation (MAECI), with regard to the international dimension, in coordination with the Presidency of the Council of Ministers, have implemented the process of evolution of the National Strategy for Sustainable Development (NSSD). The first version of the NSSD was adopted in 2017, while in recent months the 2022 Strategy is still in progress<sup>25</sup>. The ongoing work is involving all stakeholders – enterprises, municipalities, regions, citizens and associations – in order to promote the transition to an economy where management, conservation and sustainable use of resources is ensured.

The Istat-SDGs statistical measures represent the necessary input for the measurement of the NSSD. A narrow and representative<sup>26</sup> core of monitoring measures was then selected<sup>27</sup>.

This statistical measures subset is currently being revised, in order to take into account the ongoing revision of the NSSD, the information requests by all the stakeholders involved in the revision of the Strategy, as well as the larger information availability of the current SDGs Platform compared to the one used at the beginning. The same methodological approach has been adopted as for the first selection. It has therefore been decided to use statistical measures from the Istat-Sistan Platform, preferably identical to UN-IAEG-SDGs indicators and consistent with the indicators of Equitable and Sustainable Well-being (ESW), also in order to ensure that the measures comply with the statistical eligibility requirements. Moreover, the criteria of sparing, feasibility, timeliness, extension and frequency of time series, sensitivity to public policies, territorial dimension were used, focusing on statistical measures that have the best available territorial breakdown. The ongoing analyses show the reconfirmation of almost all statistical measures identified in the previous version, as well as the need for an extension to take into account new national and international information requirements (Figure 4.4).

The second VNR of the NSSD was presented at the latest UN High Level Political Forum on Sustainable Development (13-15<sup>th</sup> July 2022)<sup>28</sup>. The paper described the evolution in recent years, assessing resilience during the pandemic crisis, events related to the invasion of Ukraine, and the climate emergency. A strong positive trait that has characterised the VNR is the presence of a plan to ensure policy coherence for sustainable development as well as attention to the territorial dimension. The VNR highlighted the importance of a coherent framework of indicators such as the integrated Istat-Sistan framework for the SDGs, which also includes the ESW indicators<sup>29</sup>. The VNR underlined the importance of coherence between the NRRP, 2022 NSSD and the Ecological Transition Plan, including with reference to statistical measures.



<sup>25</sup> See https://www.mite.gov.it/pagina/sviluppo-sostenibile-e-rapporti-internazionali.

<sup>26</sup> During 2018, at the initiative of MEES, the Working Table on Indicators for the Implementation of the National Sustainable Development Strategy was established. Representatives of the Ministry of the Environment and the Protection of the Territory and the Sea, the Ministry of Economy and Finance, the Ministry of Foreign Affairs and International Cooperation, the Presidency of the Council, Ispra and Istat participated in the activities. The Table defined and agreed the criteria for the selection of indicators and the methodological approach necessary to identify a first set of indicators relevant for the monitoring of the NSSD.

<sup>27</sup> See National Statistical Institute - Istat. 2022. 2021 SDGs Report. Rome: Istat. <u>https://www.istat.it/en/archivio/266473</u>.

<sup>28</sup> See <u>https://hlpf.un.org/countries/italy</u>.

<sup>29</sup> See https://hlpf.un.org/sites/default/files/vnrs/2022/VNR%202022%20Italy%20Report.pdf.



Figure 4.4 - Istat-SDGs System for the National Sustainable Development Strategy

Source: Istat

## 4.5 Statistical measures for monitoring the Ecological Transition Plan

The national Ecological Transition Plan (ETP)<sup>30</sup>, starting from the NRRP policy lines and in line with the NSSD, aims to provide an organic framework for the achievement of Green Deal objectives. The measures and interventions follow an approach aimed at integrating ecological transition and economic and employment growth, further stimulating the decoupling between productive activity and impact on the environment. It is therefore a question of considering, according to the principles that inspire the SDGs, the interconnection between social, environmental, economic and institutional domains, taking into account time horizons differentiated from short to medium-long term.

In order to monitor and develop the implementation of the ETP, the Inter-ministerial Committee for Ecological Transition (ICET) has set up eight working groups on the following topics: Renewable energies; Sustainable mobility; Hard-to-abate industries; Circular economy 4.0, bio-economy, air quality; Hydrogeological instability, soil consumption, landslides/flood prevention, protection of water resources; Biodiversity and protection of ecosystems; Flows of funds during/post-NRRP, sustainable finance, carbon-finance; Integrated modelling on the effects of policies with a territorial perspective.

For the ETP, the quantitative dimension is relevant in order to allow monitoring of the state of implementation of the Plan and to prepare any updates of the objectives<sup>31</sup>.

The indicators presented in Annex 4 of the ETP represent the reference data of the Plan and the formally recognised information base for monitoring purposes: many of them are inferred from the Istat-SDGs system. However, the extension and complexity of the Topics of the

<sup>30 &</sup>lt;u>https://www.mite.gov.it/sites/default/files/archivio/allegati/PTE/PTE-definitivo.pdf</u>.

<sup>31</sup> https://www.programmazioneeconomica.gov.it/atti-del-comitato/.

Plan have led to the construction of a more articulated framework, which adds "collateral" indicators, able to provide additional information to support the analysis of the progress of the ETP.

The methodological approach considered to define the collateral indicator framework was developed taking into account four dimensions of analysis:

- 1. Indicators functions: monitoring; scenarios analysis of climate, environmental, social and economic; ex-ante and ex-post evaluation of the impact of policies, with a territorial perspective.
- 2. Reference topics:
  - 8 ETP policy areas: Decarbonisation; Sustainable mobility; Improvement of air quality; Combating soil consumption and hydrogeological instability; Improving water resources and related infrastructure; Restoration and strengthening of biodiversity; Protection of the sea; Promotion of circular economy, bio-economy and sustainable agriculture.
  - 4 additional transversal dimensions: macroeconomics; productive; labour market; social.
- 3. Non-hierarchical operational selection criteria,: quality certified by official statistics; sensitivity to public policies; feasibility; sparingly; timeliness, extension and frequency of time series; territorial dimension.
- 4. Relationship of the system of indicators to the modelling activities of scenarios and impacts.

The collateral statistical measures so far proposed<sup>32</sup>, in most cases, are already available, and many of them are inferred from the Istat-SDGs system. The objective should be to set up and maintain active and up-to-date platform of time series of such high statistical quality indicators, able to incorporate the different information and analytical needs arising from the monitoring and evaluation of the ETP.

Since 2016, strongly committed to developing statistical measures related to environmental, social, economic and institutional sustainability by applying the guidelines established at international level, Istat has ensured an increasingly rich statistical mosaic of information, which integrates the different dimensions. Istat promoted improvements in the production of statistical measures within Sistan, enhancing the interrelationships between the domains and the attention to climate change, enhancing geo statistic and territorial analyses that could be a factor of integration.

Statistical measures are, in fact, a crucial element in ensuring a common language and a shared culture, also constituting a reference to concreteness. Much has been done and much needs to be developed, also in perspective including statistical registers, census statistical information and continuing to keep active all partnerships aimed at this purpose.



<sup>32 &</sup>lt;u>https://www.programmazioneeconomica.gov.it/?p=49555</u>.