Istat
Istituto Nazionale di Statistica

2019 SDGs REPORT

STATISTICAL INFORMATION FOR 2030 AGENDA IN ITALY

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INDEX

FOREWORD

Istat is proud to present the second edition of the Report on the Sustainable Development Goals (SDGs). The UN General Assembly adopted 17 SDGs, with the 2030 Agenda, on 25 September 2015. The selected SDGs represent a shared itinerary for the global community to end poverty, *protect the planet and ensure prosperity for all by 2030*. To cover different development domains of environmental, social, economic and institutional nature, Goals are divided into 169 Targets.

In 2017, the United Nations Statistical Commission adopted a list of over 200 indicators for monitoring progress made by countries in pursuing the Agenda. They form a complex and continuously evolving system, built around a set of well-established indicators, available for most countries, but also proposing other indicators, some of them not yet produced or precisely defined at the international level.

The process of metadata production and analysis, by the Inter-Agency Expert Group of the UN, with the collaboration of Istat, will lead in 2020 to a revision of the indicator list; another revision is scheduled for 2025.

In this context, modernizing and strengthening statistical systems, globally and nationally, is crucial. The Cape Town Global Action Plan, developed by the High-level Group for Partnerships, Coordination and Capacity-Building (HLG-PCCB) for Statistics for the 2030 Agenda for Sustainable Development, adopted by the General Assembly of the UN in 2017, defines the international roadmap for such process. As member of the HLG-PCCB, Istat contributed to the drafting of the Plan, and is actively committed to its implementation, at a national level, within the Italian National Statistical System (Sistan), as well as at the international level, together with the Statistical Division of the United Nations and through technical capacity building cooperation with other national statistical systems. Last year Istat, in collaboration with the Italian Development Cooperation Agency, launched several SDGs-related statistical cooperation initiatives, which led our statisticians to assist their colleagues at the statistical institutes of Vietnam, Palestine, and Tanzania.

Our work at the HLG-PCCB is focused on financing and mobilizing resources for statistics. In October, 2018, the 50th United Nations Statistical Commission approved the Dubai Declaration, calling for the establishment of an innovative financing mechanism, guided by the needs of the countries, to help them improve their national statistical systems and data quality.

Parallel to such intense international activity, Istat, as all national statistics institutes, plays a key reference role for the production of quality statistical data at national and sub-national level and as a leading actor for the implementation of the system of SDGs indicators. The national statistical platform for sharing and disseminating relevant statistical information for monitoring is also worth mentioning. Starting from December 2016, Istat releases twice yearly a set of SDGs indicators for Italy on the dedicated information platform on our website. The platform is currently populated by 273 different statistical measures responding to the information demand expressed by most indicators proposed by the UN, and often integrating it with additional data.

Since 2018, Istat releases a Report on SDGs. The Report describes Italy's position along the path of Sustainable Development, plus some in-depth thematic and analytical insights. In particular, this year a special effort was made to make available a greater number of disaggregated indicators, to deepen the analysis both at a territorial level and with respect to the different socio-demographic characteristics of the population. A chapter is devoted to the analysis of the interlinkages among Goals, Targets and Indicators.

This is an impressive work, the result of Istat's participation in the International Working Group on Interlinkages. Their Report, in turn, describes our activity in this field as one of the best practices[1].

Synergies and trade-offs between the different 2030 Agenda areas are of crucial importance, especially for policy intervention planning. Explaining, highlighting, analyzing the interconnections among Goals, Targets and Indicators can help understand dimensions and complexity of Sustainable Development, make the best use of the available statistical information and facilitate choices over potentially competing strategies or actions.

The link between policies and indicators for monitoring is ever closer. In March 2018, on the initiative of the Italian Ministry of the Environment, a working group on indicators was established to support the National Sustainable Development Strategy with an experimental set of monitoring indicators, based on specific criteria, derived from those released by Istat on its devoted SDGs platform.

Our engagement in the working group, the production of our 2019 Report on SDGs and the sustained release of data on SDGs indicators benefit from a stable collaboration with the other institutions in the Italian National Statistical System.

The current setting is not definitive. Our present and future activities aim to expand the available statistical information as much as possible and to offer more breakdowns for monitoring progress, in compliance with the fundamental principle of "*leaving no one behind*".

We are called to invest, in terms of themes and methodology, to meet the growing information demand of climate change-related statistics. In this specific area, despite our considerable recent efforts, there is still room for improvement of statistical information.

Those challenges are important and Istat is tackling them on several fronts, in close collaboration with its national and international partners. While they put our scientific and technical capacity to test, they offer our National Statistical System and our country a unique growth opportunity, as well as an opportunity for us to contribute to a capital global endeavor, with the commitment, spirit of service and expertise that are specific of our Institute.

Gian Carlo Blangiardo
President of the Italian National Statistical Institute

1 https://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-08/5a_Cara%20Williams_Canada_Interlinkages_Report_SlideDoc.pdf: "Istat used IAEG-SDG metadata, which define, where present and well detailed, the possible links with indicators of other Goals. Istat then compiled and mapped these links to determine the strength of Goal-level interlinkage relationships".

1. THE INDICATORS FOR SUSTAINABLE DEVELOPMENT: A GENERAL FRAMEWORK[1]

1.1 Sustainable Development Goals (SDGs)

The 2030 Agenda for sustainable development adopted from the UN-Assembly General (UN Resolution A7RES/70/1, New York) is built on 17 Sustainable Development Goals (SDGs) with the aim to end poverty, *protect the planet and ensure prosperity for all by 2030*.

The Goals of the 2030 Agenda refer to different areas of social, economic and environmental development, which need to be considered with an integrated approach, as well as the processes that may accompany and foster them in a sustainable way, that safeguards the planet and guarantees the well-being of people and an equitable distribution of development over time.

The 17 goals are articulated in 169 targets and the United Nations Inter Agency Expert Group on SDGs (UN-IAEG-SDGs) proposed a first list of 244 indicators (232 of which are different) for their monitoring, which represent the general framework.

Further elements related to the international and national process to define Goals, Targets and Indicators of Sustainable Development are described in Chapter 2.

1 The Report is compiled by Angela Ferruzza. The English translation of the Report is edited by Patrizia Collesi. This chapter is by Barbara Baldazzi, Luigi Costanzo, Angela Ferruzza, Paola Patteri, Giovanna Tagliacozzo, Paola Ungaro.

1.2 How many and which indicators for SDGs in Italy

Istat proposes in this second SDGs Report 2019 a wider panorama of the already released indicators (in five other occasions every six months since December 2016), together with the analysis of their trends and interlinkages, giving a statistical framework for monitoring the progresses towards the Sustainable Development defined globally.

In this sixth release Istat produces an updated set of 123 UN-IAEG-SDGs indicators and, for them, provide 303 statistical measures (273 of which are different), all available on the corporate website www.istat.it[2].

Actually, no unique correspondence does exist between the indicators defined at international level and the measures identified for Italy. For 96 measures the coincidence with the international indicators is identical, 117 measures partially reflect the information needs of the international indicator to which they are connected (this is due to several reasons, mainly because not all the data are available as detailed as requested). The remaining 90 measures have been included in order to provide further elements useful for understanding and monitoring the target set in the "national context". For 107 measures, already released in December 2018, the time series have been updated or the breakdowns have been extended.

On this occasion, in application of the "*no one left behind*" principle, particular attention was paid to extending possible breakdowns by gender, citizenship, presence of limitations (disability) and territorial level.

In particular, for 175 statistical measures it was possible to provide regional breakdowns.

2 The national statistical measures for SDGs are by Domenico Adamo, Barbara Baldazzi, Ciro Baldi, Tiziana Baldoni, Marco Battaglini, Alessandra Battisti, Eugenia Bellini, Donatella Berna, Elisa Berntsen, Rosalba Bravi, Silvia Bruzzone, Alessandra Burgio, Tania Cappadozzi, Raffaella Cascioli, Cinzia Castagnaro, Raffaella Chiocchini, Annalisa Cicerchia, Alfredo Cirianni, Chiara Coluccia, Cinzia Conti, Isabella Corazziari, Luigi Costanzo, Fabio Crescenzi, Stefania Cuicchio, Elisabetta Del Bufalo, Clodia Delle Fratte, Valeria De Martino, Mascia Di Torrice, Aldo Femia, Alessandra Ferrara, Roberto Fantozzi, Luisa Frova, Domenico Gabrielli, Lidia Gargiulo, Roberto Gismondi, Anita Guelfi, Antonino Laganà, Francesca Lariccia, Marzia Loghi, Maria Grazia Magliocchi, Cecilia Manzi, Anna Emilia Martino, Valeria Mastrostefano, Maria Liviana Mattonetti, Manuela Michelini, Maria Giuseppina Muratore, Alessandra Nurra, Sante Orsini, Monica Pace, Paola Patteri, Federica Pintaldi, Federico Polidoro, Maria Elena Pontecorvo, Sabrina Prati, Gaetano Proto, Simona Ramberti, Chiara Rossi, Mariangela Sabato, Maria Teresa Santoro, Miria Savioli, Giovanni Seri, Elisabetta Segre, Isabella Siciliani, Giampiero Siesto, Silvia Simeoni, Sabrina Sini, Simona Staffieri, Giovanna Tagliacozzo, Stefano Tersigni, Alessandra Tinto, Francesco G. Truglia, Angelica Tudini, Franco Turetta, Paola Ungaro, Donatella Vignani, Anna Villa, Alberto Violante, Laura Zannella.

Figure 1.1 - Statistical indicators for SDGs monitoring by typology: identical, proxi or partial, specific national context

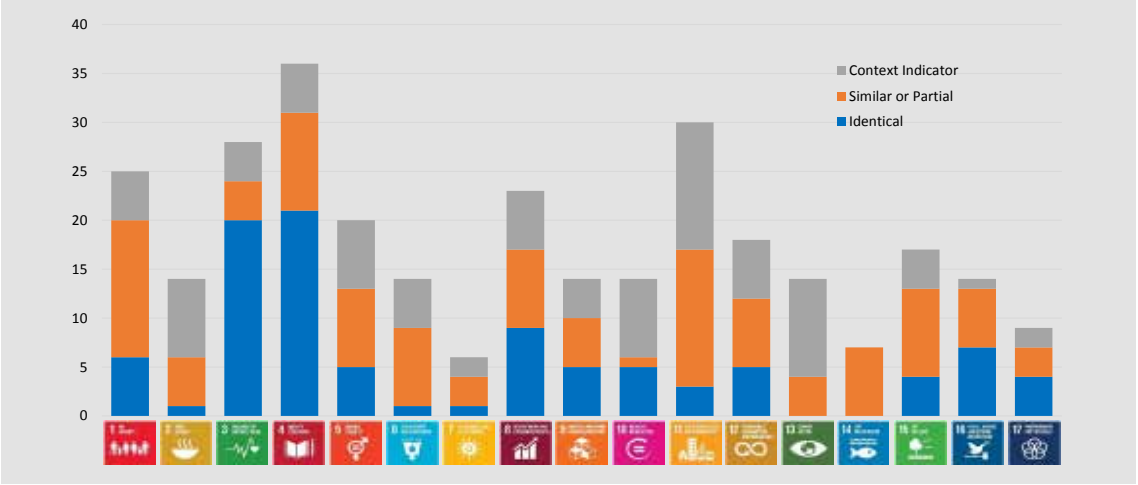


Figure 1.2 - Statistical indicators for SDGs monitoring considering the available disaggregations

Classification variable Statistical measures SDGs ISTAT	Statistical measures SDGs ISTAT	Goal
Degree of urbanization / Municipalities / Municipality type	51	
Regions	175	
Gender	82	
Age class	67	
Citizenship / Nationality	54	
Presence of disability	17	

This is a work continuously evolving, which takes into account the improvements in the production of statistical measures within the National Statistical System (Sistan)[3], and thanks to synergistic action developed in it, working for a progressive extension of the "mapping" of the indicators proposed by UN-IAEG-SDGs.

A synthesis of the statistical information available for each goal will follow. An analytical description of the indicators, of the current situation and of the trends for each goal is presented in Chapter 3.

In order to explain the intrinsic complexity of sustainable development, Chapter 4, also traces an analysis of the links between objectives, sub-objectives and indicators.

3 See Chapter 2. The indicators were produced also thanks to synergistic action developed in the National Statistical System, and not only, with different institutions and stakeholders: ISPRA, ISS, INVALSI, ENEA, GSE, INGV, Ministry of Environment and Land and Sea Protection, Ministry of Foreign Affairs and International Cooperation, Ministry of Economy and of Finance, Ministry of Health, Ministry of Education, University and Research, Ministry of Justice, Ministry of the Interior, ASviS, Consob, Cresme.

1.3 Synthesis by Goals

In Italy, the population at risk of poverty or social exclusion is 28.9%; a decrease compared to the previous year. The indicator of poverty or social exclusion considers different dimensions and corresponds to the proportion of people who present at least one of the following situations: 1) at risk of income poverty after social transfers, 2) severely materially deprived people, 3) people living in households with very low work intensity. In Italy, income poverty affects 20.3% of the population. This value is substantially stable compared to 20.6% in 2016. 10.1% of the population is in severe material deprivation. The share of those who live in households with very low work intensity is 11.8%, The regional disparities are very wide. Considering the employed who live at risk of poverty, Italy was fifth last among the countries of the European Union with 12.2% of the employed at risk of poverty in 2017. In 2017, individuals in absolute poverty are estimated to be 5 million and 58 thousand. The incidence of absolute poverty for individuals is 8.4%.

In agriculture, the use of plant protection products (mainly pesticides) lowers to 13 kg/ha (20% less than 2010), while the use of fertilizers remains stable (approx. 500 kg/ha): both are used mainly in the North area (28 kg/ha of plant protection products and 1,355 kg / ha of fertilizers). The ammonia emissions of agriculture are back on the rise, reaching 3,6 million tons in 2016 (like in 2010). About 60% of emissions is generated by livestock breeding. The Agriculture orientation index for government expenditures keeps decreasing (from 0.38 to 0.22 between 2010 and 2017). In Italy, about one child in three is overweight, but the trend is improving.

Italy reached the lowest levels in Europe for neonatal mortality and mortality under 5 years. The rates continue to decrease, particularly in the South and Islands area, which slowly reduces the gap compared to the national average. The standardized mortality rate between 30-69 years for malignant tumors, diabetes mellitus, cardiovascular disease and chronic respiratory diseases is steadily decreasing from 2004 in Italy, especially among males, among which, however, rates are still 70% higher compared to females. In Italy, in 2017, the incidence of HIV infections was 5.7 new cases every 100,000 residents, with an almost stable trend after 2015. In 2017, deaths in road accidents increased in Italy, while the rate of serious injury in road accidents stopped growing. In 2017 the expected years of healthy life at birth in Italy were 58.7. More marked the territorial inequalities, with 4 more years to be expected to live in good health in the North comparing to South and Islands area. In 2017 about one-sixth of the population aged 15 years and over took on risky behaviours in alcohol consumption (16.7%).

In Italy, 27.9% of young people aged 30-34 have a tertiary degree; however, the level of the rate remains much lower than the European average and is higher only than that of Romania. For women, the share of 30-34 year-old graduates is 34%, while for men it is 21.7%.

Early exit from the education and training system has increased in the last 2 years and amounted to 14.5% in 2018. There are still significant territorial differences to the detriment of the South and Islands area and of males.

There are many territorial, gender and provenance differences, often determined by factors that feed inequalities in access to educational opportunities.

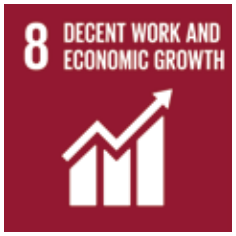
Violence against women decreases, but the severity increases and extreme violence remains stable. The share of daily time devoted by women to domestic work and unpaid care is about 2.6 times higher than that of men, it was more than triple in 2002-2003.

The 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, worsened in the last three years, in particular in the regions of southern Italy. The presence of women in the national Parliament, in publicly traded companies and, albeit to a lesser extent, in regional councils and decision-making bodies increases. However, the presence of women in decision-making, economic and political places remains low: just over one-third in the national Parliament and in publicly traded companies, one fifth in regional councils and less than one fifth in decision-making bodies.

Italy has the highest abstraction of drinking water per capita among the EU28 countries: 156 m^3 per inhabitant in 2015. Of the 9.5 billion m^3 of water withdrawn for drinking use, only 8.3 billion were introduced into the municipal drinking water distribution networks. Of these, only 4.9 billion were supplied to users, corresponding to 220 litres per inhabitant per day. The efficiency of the drinking water distribution network is worsening. In 2018, 10.4% of Italian households complained of irregularities in the service of water supply in their homes. In Italy, 17,897 urban wastewater treatment plants are in operation (2015 data). The percentage (in terms of population equivalents) of pollutant loads of civil origin that flow into secondary or advanced plants, which represent 44.2% of the treatment plant, is 59.6% of the potential pollutant loads generated on the territory.

Historically characterized by lower levels than the EU average and many of the main European countries, Italy has progressively reduced its primary energy intensity over time: from 113.2 (2006) to 98.4 (2016) tons of oil equivalent per thousand euros of GDP. Between 2009 and 2015 Sardegna (-38%) mostly contributed to the decrease of GIC/GDP ratio (-23.8%), followed by Molise, Marche and Abruzzo.

After the slowdown recorded between 2013 and 2015, in 2017, the overall consumption share from RES reached 18.3%, but in the electricity sector the share decreased. In 2018, 93 out of a hundred families were satisfied with the electricity service. After the increase recorded between 2008 and 2012, and the following decrease, the share of population unable to keep home adequately warm is still above pre-crisis values and on levels twice as high as the EU average.



The annual growth rate of real GDP per capita showed an improvement in the last three years (+1.0% in 2018) but the value added per employed person was substantially stationary. The unemployment rate continues to fall, but, in 2018, it was still higher than the pre-crisis levels (10.6%; -0.6 points compared to 2017; +3.9 points compared to 2008). The non-partecipation rate in Italy is almost double compared to the EU level. The employment rate continued the growth in 2018 (63%; +0.7 compared to 2017), for the first year recovering pre-crisis levels. Although falling from 2015, in 2018 the share of NEETs among Italian 25-29 year-olds reached the highest level in EU. In 2017, the share of government spending in employment programmes and social protection from enemployment decreased with respect both to the national budget and to GDP.

Between 1995 and 2017, in line with the increasing tertiarization of advanced economies, in Italy the manufacturing sector decreased in terms of share of both employment and value added on the total. In 2017, the intensity of CO_2 emission on value added reached the minimum in the last ten years. Italy is one of the European countries with the lowest intensity of carbon dioxide emissions. Compared to EU, the Italian R&D system suffers a structural delay, not offset by the slow growth of R&D intensity and personnel. The incidence of enterprises that introduced technological innovation grew in the last three-year period by 6.2 percentage points, reaching 38.1 companies per 100. Between 2012 and 2016, the percentage of Italian Medium-High Technology (MHT) value added on the total manufacturing value added grew. The ICT is in expansion in both households and enterprises sector, but there still are large territorial differences.

Until 2007, the growth in the incomes of the lowest income population in Italy was higher than that of the incomes of the total population. Since 2008, due to the economic crisis, higher decreases have been observed for lower incomes. The negative effect of the crisis on lower incomes stopped only in 2016, when income growth was more intense for households with lower incomes (+4.8) than for the total of households (+2.7). The inequality of income followed the same trend, reaching the minimum in 2007 (5.2), the highest in 2015 (6.3), falling back to 5.9 in 2016. The percentage of disposable income for the poorest 40% of the population, - an indicator used by Eurostat to compare the levels of inequality between EU countries - in fact, in 2017 was 21.1% in Europe and 19.5% in Italy. Italy is experiencing a profound change in the migratory phenomena. The last few years were characterized by an relevance of incoming flows of asylum seekers and international protection, with a sharp reduction in migrations for work reason. On the one hand, therefore, the country is called upon to govern the emergency of non-programmable arrivals, on the other it must manage the processes of inclusion of persons of foreign origin. As for integration indicators, the growth of people with a long-term permit continues. In 2017, instead, for the first time, after a decade of constant growth, there was a decrease in the number of citizenship acquisitions (-26.4%).

The level of air pollution from particulate matter marks a setback in the downward trend in the medium and long term. In fact, a slight increase was observed for some pollutants in the last two years, also because of weather conditions. Values higher than the EU average are recorded mainly in the cities of the Po Valley. The share of urban waste sent to landfill continues to decrease, falling below a quarter in the last two years (23.4% in 2017) from about 50% in 2008. In 2018, 32.4% of the households have much or enough difficulty in connecting with the public services in the area in which they live. The population living in overcrowded houses is slightly decreasing and equal to 27.1%. The share of people who claim to live in houses with structural problems or humidity problems (16.1%) and that of those who complain of noise from neighbours or from the street (12.5%) falls to a greater extent. In 2017, every hundred legal buildings, almost 20 were illegal, with strong territorial differences. In the 109 provincial capitals, the usable green area is equal on average to 9.1 m^2 per 100 of urbanized area. Public expenditure per capita spent on the preservation of the cultural and natural heritage has fallen by about twenty euros per capita in the last ten years, from 64.2 euros in 2007 to 44.7 euros in 2017.

In the European comparison, Italy occupies a virtuous position for the limited consumption of natural resources, thanks to the considerable decline in the last fifteen years. The Domestic material consumption returned to growth from 2015, following the recovery in production activities, reaching, in 2017, 8.2 tons per capita, with wide disparity at regional level. Despite the numerous positive signs relating to waste management, Italy is still below the target of separate collection set by national law; the regional gaps are substantial. Between 2012 and 2015, two public institutions out of 10 adopted non-financial reporting such as social and/or environmental balances/reports. The impact of tourism on waste grew in the last three years, according with the recovery of the tourism intensity index. In 2017, the nights spent in touristic structures with greater sustainability (open-air establishments, farmhouses and mountain refuges) was around 20%, with higher values in Marche, Toscana and Umbria. Sicilia was instead the region in which this type of tourism is less widespread.

Globally, carbon dioxide emissions have increased by 40% compared to 2000. In Europe, emissions of greenhouse gases and other climate-changing gases per capita showed a slight decrease between 2015 and 2016, with 8.7 tonnes per capita. The decrease in Italy was similar (7.2 tonnes per capita). Three quarters of emissions are generated by production activities and a quarter by household consumption. Among the production activities, the first responsible for emissions is the manufacturing industry (22.1%), then the supply of electricity, gas, steam and air conditioning (21.7%). For the household component, “Heating/cooling” and “Transport” each account for 12%. In Italy, hazardous events are intensifying, also due to climate change, with multi-risk cascade events: landslides, floods, forest fires, storms, extreme climatic phenomena, heat waves, water deficits. The fragility and mismanagement of the territory, the poor maintenance and obsolescence of the infrastructures aggravate the human, economic and environmental losses. In 2017, 10.4% of the population was exposed to flood risk, i.e. the risk of personal injury (deaths, missing, injured, evacuated), while the population exposed to landslide risk was 2.2%.

Temperature anomalies on the mainland at the global and national levels resulted in an increase of 1.20 and 1.30 °C, respectively, compared to normal climate values (1961-1990). The impact of forest fires peaks in 2007, 2012 and 2017. The area covered by fire reached a value of 7.5 for 1,000 km^2 in 2007, 4.3 in 2012 and 5.4 in 2017. The regions of the South have suffered the greatest impacts. Our country is also subject to events of seismic and volcanic origin, which cause greater losses and damages where the territory and infrastructure are more fragile and vulnerable. 2016 was a year of high seismic intensity, with 67 events, 6 of which registered a magnitude over 6.

In Italy, the surface area of marine protected areas is equal to a total of 3,020.5 km^2. Three quarters of the protected areas are in Sardegna, Sicilia and Toscana. The marine areas included in the Natura 2000 network in 2017 had an area of 5,878 km^2.

Percentage of authorized coastal bathing waters on the total of the coastal line in accordance with the regulations in force was 66.9% in 2017. The share of unbathing coastline includes areas with health and hygiene or safety risks, but also military areas, ports, river mouths and areas subject to natural protection.

Most fish stocks are in over exploitation. Intensive fishing in the North-East Atlantic (and adjacent areas) and the Mediterranean (Western) geographical area needs to be more limited to return to biologically sustainable levels.

Woods cover 31.6% of the national territory (+ 0.6% per year, from 2000 to 2015), increasing also their density in terms of above-ground biomass (from 95 to 111 tons/ha). The process of growth and densification of forest areas improves carbon sequestration, however it is largely uncontrolled, and often resulting from abandonment and degradation of rural landscapes in the inner areas.

The system of protected areas covers around 80% of the Key biodiversity areas, 35.1% of forest areas and 21.6% of the entire national territory.

Land consumption continues to advance (14 hectares per day in 2017). 7.65% of the national territory is covered by artificial surfaces that seal the soil, but almost 40% has a high fragmentation rate, due to the proliferation of physical barriers created by urbanization.

Offences detected in application of the international convention against illegal trafficking of protected species are increasing (from 2.5 to 4 every 1,000 checks, from 2015 to 2016).

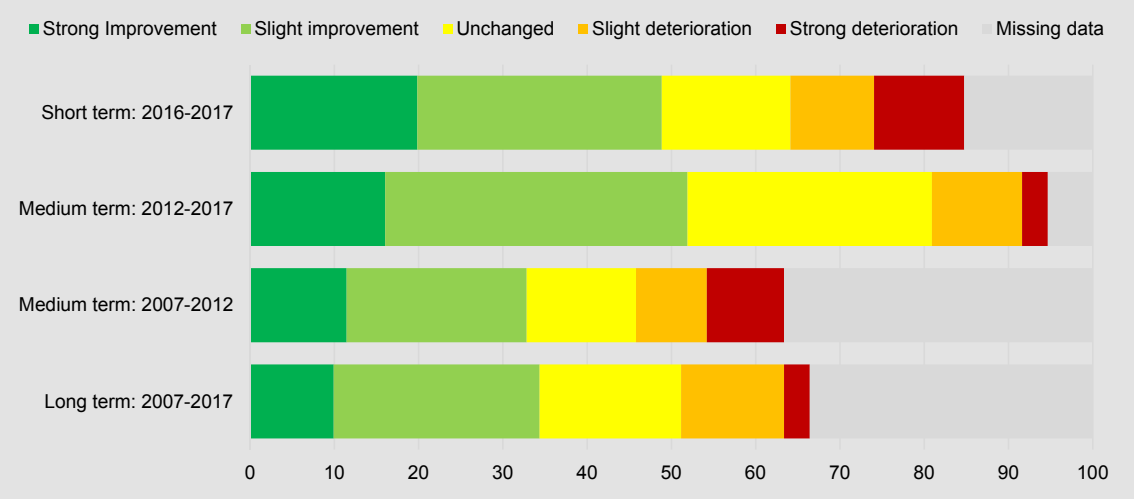
In 2017, 0.6 victims of intentional homicide per 100,000 inhabitants occurred. The rate decreased over the years in the case of men, while it remained stable in the case of women. The proportion of the population victims of physical assault or robberies consumed in the last 12 months was 1.4%; 1.2% for physical assaults alone. 27% of the victims of aggression have reported. 4.1% of women and 0.7% of men between 18 and 29 years of age were victims of sexual violence before the age of 18. In 2016, 60.6% of citizens felt safe when walking alone in the dark in the area where they live, a value that is one percentage point higher than in 2009 but significantly lower compared to 2002 (64.6%). 7.9% of families have been involved in at least one case of corruption during their lifetime, 2.7% in the last 3 years, 1.2% in the 12 months from the interview (years 2015-2016). Over the years, the share of unsentenced adults detainees awaiting first trial as a proportion of overall prison population has decreased (16.5% in 2018). The effective average duration of civil proceedings in ordinary courts remains very long, 429 days in 2018, with large differences at the territorial level.

The share of gross national income allocated by Italy to Official Development Assistance continued to grow in 2017, while the trend of the ODA to the least developed countries was stable. However, Italy is still very far from 2030 Agenda targets. In 2018, government revenue accounted for 42.1% of GDP, a share slightly decreasing since 2016, but 2.1 percentage points higher than in 2000. After the decrease started in 2012, foreign workers' remittances returned to grow in 2018, reaching 6.2 billion euros.

1.4 Progresses towards a Sustainable Development

The analysis of the trend over the long term (ten years 2007-2017) and the medium term (previous 2007-2017 and last five years 2012-2017) of most of the indicators allows to outline a first statistical overview of progress towards the Sustainable Development Goals[4].

Figure 1.3 - Goals trends and availability of indicators



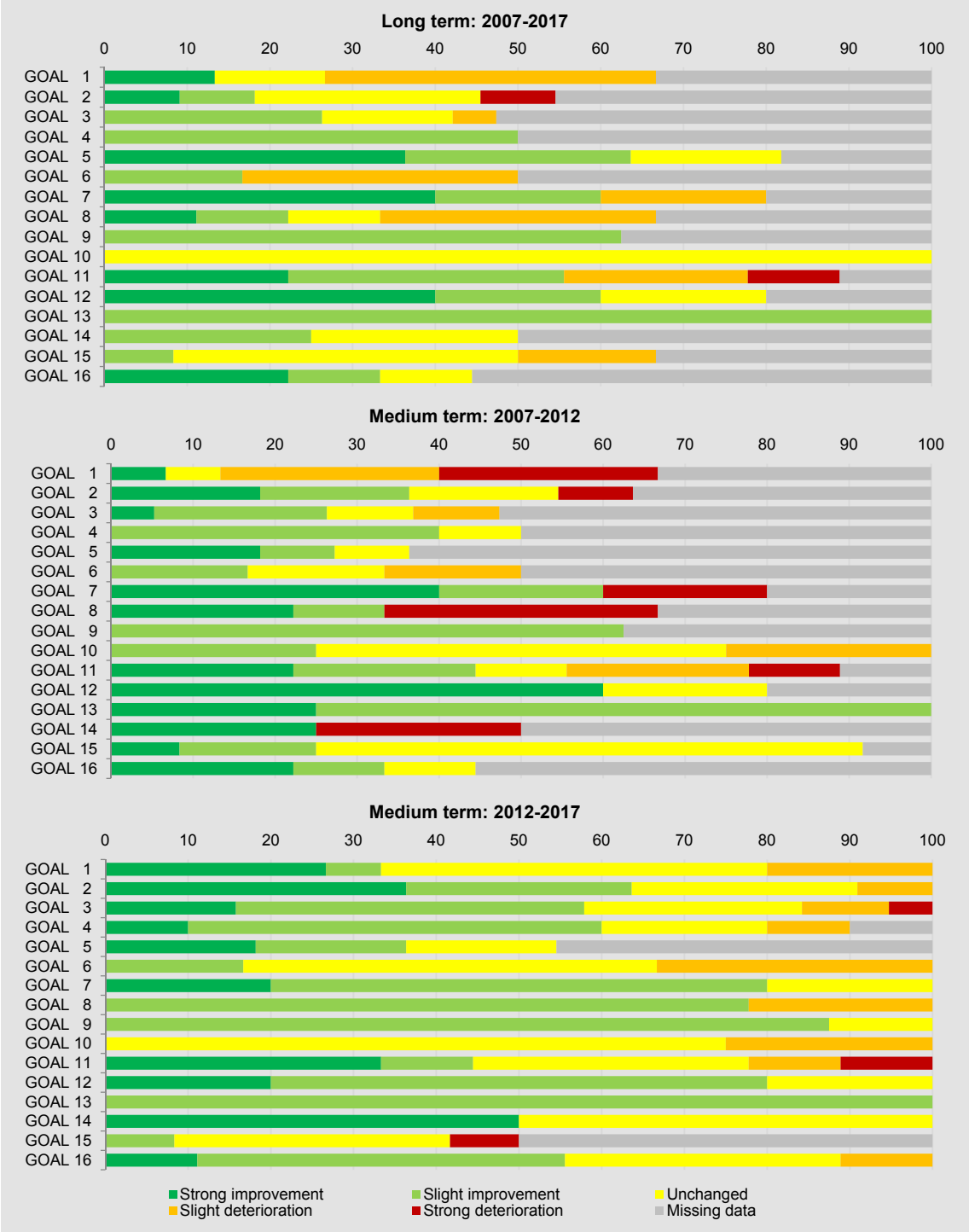
131 indicators are available in the time series for which the variation in the time intervals considered has been analyzed. From 2007 to the present the availability of statistical information in the Sistan area increased: in fact, the variation compared to the previous ten years can be considered for 66.4% of the indicators, while that compared to the last five years can be analyzed[5] for 94.7% of the indicators.

Of these, the Goal 3 (Health) has the highest number of indicators available from the last 5 years.

4 The summary representation of the trends measured by the indicators is achieved by calculating their variations in the four reference intervals thus defined: Short term (last year available on t-1, normally 2017 on 2016); Medium term / last five years (last year available on t-5, normally 2017 on 2012); Medium term / previous five years (t-5 on t-10, normally 2012 on 2007); Long term (last year available on t-10, normally 2017 on 2007. The variations are therefore classified based on the values of an Annual Growth Compound Rate (TCCA), calculated as, where t0 is the base year, t is the most recent year and the value of the indicator in the two years, for more details see Chapter 3.

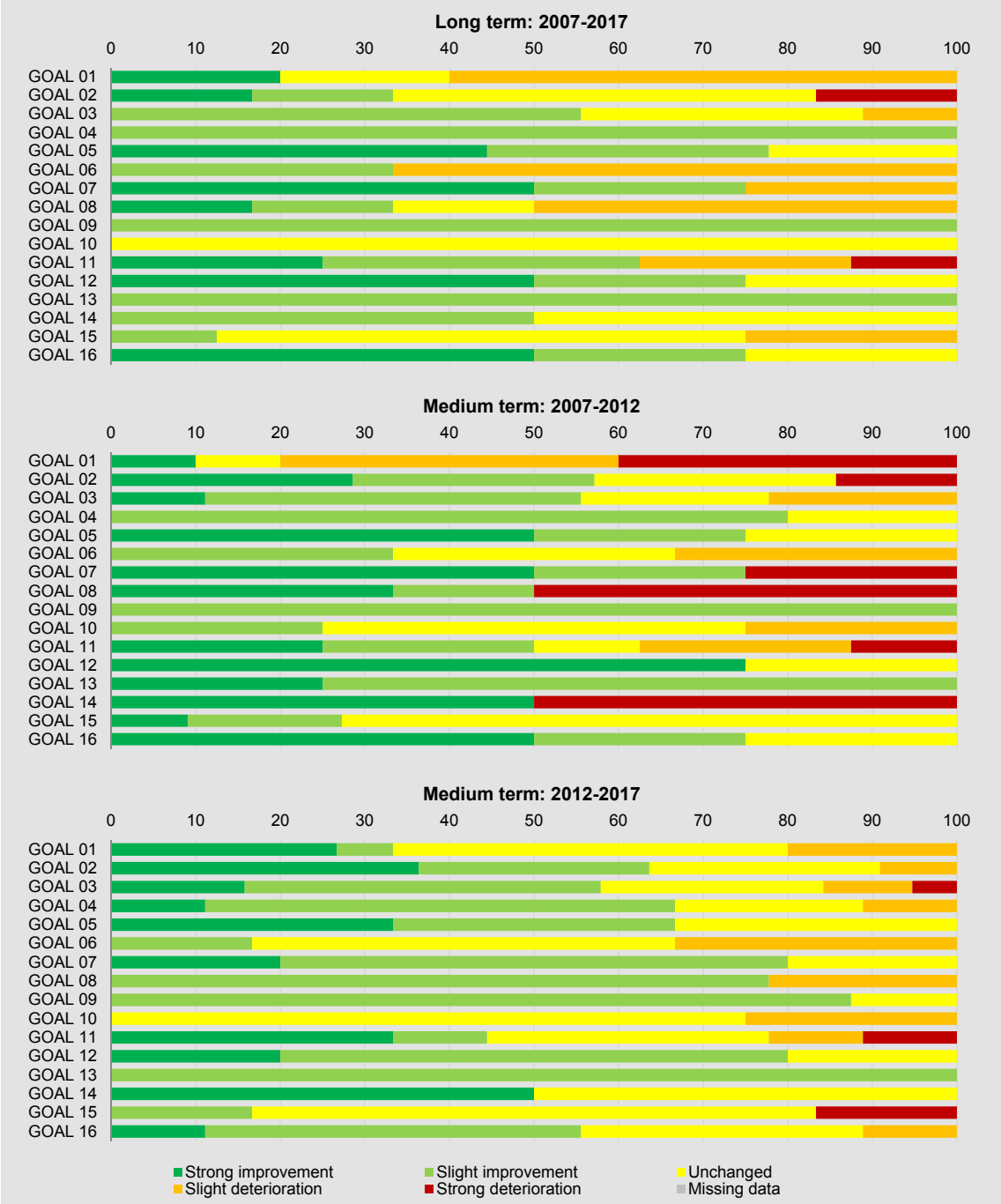
5 The list of indicators analyzed for each Goal can be found in the table at the end of each Goal section in Chapter 3

Figure 1.4 - Goals trend and availability of indicators according to the reference period



The summary picture of the long-term trends of the last decade indicates progress with reference to the objectives Quality education (Goal 4), Gender equality (Goal 5), Industry, innovation and infrastructure (Goal 9), Consumption and production (Goal 12), Sustainable energy (Goal 7), Justice and institutions (Goal 16).

Figure 1.5 - Goals trend for reference period



The effect of the economic crisis emerges clearly from the analysis of the data referring to the 2007-2012 period, with indicators that worsen for the Goal 1 (Poverty), 8 (Work and growth), 11 (City), 2 (Food and agriculture), 14 (Sea).

In the nearest five-year period (from 2012 to 2017) a picture of moderate progress emerges. There are slight improvements in the Goals 2 (Food and Agriculture), 4 (Education), 5 (Gender Equality), 7 (Sustainable Energy), 9 (Industry, Innovation and Infrastructure) and 12 (Consumption and Production). The Goals 3 (Health), 11 (City), and 15 (Land) are deteriorating.

1.5 Sustainable Development in the Italian regions

This edition of the Report also presents an overall assessment of the levels of Sustainable Development in the Regions, obtained from the distribution of quintiles of indicators in the last year available[6].

This allows an effective synthetic representation of the regional positions with respect to the five groups, the first characterized by the most critical situation, the last by the relatively more favorable one.

The resulting geography of sustainable development does not differ much from the usual distribution of the Italian territory which sees the North in a more favorable situation than the rest of the country.

Figure 1.6 - Statistical indicators for SDGs monitoring for available disaggregations

REGIONS AND GEOGRAPHICAL DIVISIONS	QUINTILES					Number of indicators
	I	II	III	IV	V	
	(0-20)	*(20-40)*	*(40-60)*	*(60-80)*	*(80-100)*	
Piemonte	6,9	22,1	32,1	27,5	11,5	131
Valle d'Aosta/Vallée d'Aoste	20,5	12,9	9,8	23,5	33,3	132
Liguria	15,2	19,7	26,5	22,0	16,7	132
Lombardia	14,4	13,6	13,6	26,5	31,8	132
Bolzano/Bozen	20,8	10,8	10,8	10,0	47,5	120
Trento	11,4	7,3	9,8	20,3	51,2	123
Veneto	13,7	10,7	23,7	35,1	16,8	131
Friuli-Venezia Giulia	9,1	12,9	22,0	23,5	32,6	132
Emilia-Romagna	15,9	9,1	15,9	27,3	31,8	132
Toscana	10,6	14,4	28,8	33,3	12,9	132
Umbria	9,2	26,9	33,1	15,4	15,4	130
Marche	9,1	25,0	30,3	25,0	10,6	132
Lazio	19,7	28,8	23,5	10,6	17,4	132
Abruzzo	18,9	36,4	18,2	16,7	9,8	132
Molise	27,7	33,1	9,2	10,0	20,0	130
Campania	54,5	15,9	10,6	8,3	10,6	132
Puglia	37,1	24,2	14,4	15,2	9,1	132
Basilicata	33,8	26,9	10,8	12,3	16,2	130
Calabria	56,1	8,3	9,8	10,6	15,2	132
Sicilia	56,1	14,4	9,1	8,3	12,1	132
Sardegna	34,1	24,2	15,2	15,2	11,4	132
North	7,6	11,9	17,8	50,0	12,7	118
Center	11,5	23,0	36,9	24,6	4,1	122
South and Islands	48,3	19,8	15,5	11,2	5,2	116

Among the areas where the situation described by the SDGs indicators is more advanced, the autonomous provinces of Trento and Bolzano, the Valle d'Aosta, Lombardia, Friuli Venezia Giulia and Emilia Romagna emerge. If the medium-high profile is considered, these regions are joined by Toscana and Piemonte.

6 After having ordered the regional distribution of the values of each indicator so as to obtain 5 groups with the same number of units, we consider for each region the percentage of indicators that are found in the different groups (from those that fall in the lowest 20% gradually up to those in the last group, corresponding to 20% of higher values). The polarity of each indicator was taken into account in the calculation, ie if its increase has a positive or negative impact on sustainable development (see Chapter 5 dedicated to the Regions).

The highest concentration of indicators in the area of difficulty is found in Sicilia, Calabria and Campania. Lazio seems more similar to Abruzzo than to other regions of the central geographical area. Further aspects of this geography emerge from the analysis of the groups carried out considering individually the Goals at the most disaggregated territorial levels. From this point of view, there are, for example, problematic elements also in Liguria, Valle d'Aosta and Piemonte with reference to Goal 1 (Poverty), or in Bolzano, with Sicilia and Campania, for the Goal 3 (Health).

Trento, Friuli and Lombardia show more favorable situations for the Goal 4 (Education), while Campania, Puglia, Calabria and Sicilia are penalized. A rather low percentage of high-performance indicators characterizes the regions of Southern Italy with reference to Goal 9 (Industry, innovation and infrastructure), Goal 8 (Work and growth), Goal 10 (Inequalities), Goal 16 (Peace, justice and institutions), Goal 17 and Goal 6 (Water). The Goal 9 shows more favorable results for Emilia Romagna, Lombardia and Piemonte.

For the Goal 6 there are problems in Calabria and Sicilia. The North-South polarity manifests itself to a lesser extent for Goal 2 (Food and Agriculture), Goal 5 (Gender Equality), Goal 7 (Energy), Goal 11 (City), Goal12 (Production and Consumption) and the Goals 13 (Climate), 14 (Sea) and 15 (Earth) examined together[7].

The informative richness offered by the Istat SDGs Information System guarantees the possibility of carrying out further analyzes in this regard in the future, but guarantees everyone the statistical information useful for monitoring the Sustainable Development Goals not only at national level, but also at the most disaggregated territorial levels. In fact, regional breakdowns allows further analysis necessary to progress towards sustainable equality.

7 The quantiles of Goals 13, 14 and 15 have been analysed together.

2. INTERNATIONAL PROCESSES AND NATIONAL ADVANCES ON THE SDGs[1]

2.1 Towards a partecipated definition of Sustainable Development

The concept of sustainable development was first introduced in the report *Our Common Future* (known as the Brundtland Report) published in 1987 by the World Commission on Environment and Development (WCED) of the United Nations Environment Programme (UNEP)[2]. The document calls sustainable the 'development that satisfies the needs of the present without compromising the ability of future generations to satisfy theirs'[3]. The idea of sustainability outlined in the report is connected to the compatibility between development of economic activity and protection of the environment; and the issue of equity, not only intergenerational but within the same generation, was introduced. The principle of sustainable growth requires richer countries to adopt production processes and lifestyles compatible with the biosphere's ability to absorb the effects of human activities and the ability of developing countries to grow demographically and economically at a pace compatible with the ecosystem.

Starting from the dissemination of the Brundtland Report, the international community begins to think about a social agenda that considers the relationships between development and the environment on a global scale, paying particular attention to political and economic aspects. The principle of sustainable development is associated with topics such as population, food security, species extinctions, energy, industry, the urban issue, which represent the "collective challenges". These issues must be addressed through "common efforts", whose main directions of work concern the management of international common goods, the connection between peace, security, development and the environment, the need for institutional and social changes.

In 1992 the United Nations Conference on Environment and Development (UNCED) of Rio de Janeiro, called Earth Summit, consolidates the concept of sustainable development[4]. The two fundamental elements around which reflection is articulated are the environment, as an essential dimension of economic development, and inter-generational responsibility in the use of human resources. During the Conference, Agenda 21 is approved, a global action program to be undertaken at national and local level in all sectors of sustainable development. In this context, two additional agreements are also signed: the Rio Declaration on Environment and Development, which, reaffirming the norms established at the Stockholm Conference, sets out the 27 principles on the rights and responsibilities of nations in the pursuit of development and human well-being, and the Declaration of

1 This chapter was edited by Angela Ferruzza, with contributions from Francesca Vannucchi (par. 2.1), Giovanna Tagliacozzo (par. 2.2), Marina Gandolfo (par 2.4).
2 United Nations, Report of the World Commission on Environment and Development: Our Common Future (A/42/427), 4 August 1987, https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf.
3 World Commission on Environment and Development, Our Common Future, Milan, Bompiani, 1988, p. 71.
4 United Nations Conference on Environment and Development (UNCED), Earth Summit, Rio de Janeiro, Brazil 3-14 June 1992, https://sustainabledevelopment.un.org/milestones/unced.

Principles for Sustainable Forest Management, which establishes the rules for their management, conservation and sustainable use. In addition, the Convention on Biological Diversity, which aims to preserve biodiversity, and the United Nations Convention on Climate Change, which aims to stabilize greenhouse gas emissions at a level that does not endanger the world climate.

The progress achieved five years after the definition of Agenda 21 is evaluated in 1997 during the Nineteenth General Assembly of the United Nations, Earth Summit +5. On this occasion the growing interest in all that concerns sustainable development is underlined, but at the same time the persisting disparities in the realization of the established objectives are highlighted. There is an imbalance between those countries where poverty levels have been reduced and others where socio-economic conditions have deteriorated. Therefore their start-up towards actions related to sustainable development requires international support[5].

The need to work in a spirit of partnership has been confirmed by the Millennium Summit, held in New York in 2000, in which the Heads of State and Government signed the Millennium Declaration. Among the fundamental values enshrined in the document is respect for nature, which calls for prudence in the management of all living species and all natural resources, in accordance with the precepts of sustainable development. Unsustainable production and development models must be modified in the interest of future well-being and that of the generations to come. To this end, eight Millennium Development Goals (MDGs) have been established that commit signatory states to achieving them by 2015: eradicate extreme poverty and world hunger; make primary education universal, promote gender equality and women's autonomy; reduce infant mortality and maternal mortality; fight HIV, malaria and other diseases; guarantee environmental sustainability; form a global partnership for development[6].

The World Summit on Sustainable Development (WSSD), which met in Johannesburg in 2002, reiterated attention to the new challenges to be faced to achieve sustainable development: a model of development that combines economic aspects with the social and environmental ones, able to ensure a more equitable and prosperous society, respecting future generations. At the center of reflection were the relevant issues highlighted during the Earth Summit in Rio de Janeiro and the state of implementation of the decisions taken. An Action Plan emerged that identified the key themes for the following decade. The final document consisted of a political declaration on sustainable development[7], which focused attention on eradicating poverty, changing unsustainable patterns of consumption and production, protecting and managing natural resources. The Action Plan on Sustainable Development defined the model for achieving this goal.

Twenty years after the Earth Summit, the United Nations Conference on Sustainable Development (UNCSD), Rio +20, was held in Rio de Janeiro in 2012, with the aim of renewing the political commitment to sustainable development, verifying the status of implementation of international responsibilities taken over the past two decades and channeling the efforts of governments and civil society towards common goals and new challenges to be addressed. In particular, the Conference focused attention on two aspects. The first concerns the

5 United Nations, Programme for the Further Implementation of Agenda 21, A/RES/S-19/2, 19 September 1997, http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/S-19/2.

6 United Nations Millennium Declaration, Resolution adopted by the General Assembly, 8 September 2000, http://www.un.org/millennium/declaration/ares552e.htm.

7 United Nations, Johannesburg Declaration on Sustainable Development, World Summit on Sustainable Development, A/CONF.199/29, 4 September 2002, http://www.un-documents.net/jburgdec.htm.

need to move towards a green economy to reduce the risks associated with global threats (climate change, loss of biodiversity, desertification, depletion of natural resources) and promote widespread social and economic well-being. Added to this is the need to create an institutional framework for sustainable development, that is, a system of global governance capable of including all institutions and actors responsible for developing, monitoring and implementing sustainable development policies.

The definition of the 2030 Agenda for Sustainable Development inserted in 2015 in this context of global action concerning the implementation of values correlated to sustainable development.

2.2 Trasforming our World: the 2030 Agenda for Sustainable Development

The General Assembly of the United Nations adopted in September 2015 the 2030 Agenda for sustainable development, in which the guidelines for the activities for the coming years are outlined (UN Resolution A7RES/70/1, New York settembre 2015).

In the same year, in line with the 2030 Agenda, the Paris Climate Agreement (UN decision 1/CP.21, adoption of the Paris Agreement) and Sendai Framework for Disaster Risk Reduction (adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan) were adopted.

The 17 Sustainable Development Goals (SDGs) that make up the 2030 Agenda are in turn broken down into 169 Targets and refer to different areas of social, economic, environmental and institutional development. These must be considered in an integrated manner, taking into account the processes that can accompany them in a sustainable manner, from global to local, including international cooperation and partnerships to be activated in the political, institutional, but also private and individual citizen context. There are numerous references to people's well-being and to a fair distribution of the benefits of development, intra-generational and inter-generational. "No one left behind" is one of the key principles.

These 17 goals, also broken down into 169 sub-objectives, are:

1. *No poverty*. End poverty in all its forms everywhere
2. *Zero hunger*. End hunger, achieve food security, improve nutrition and promote sustainable agriculture
3. *Good health and well-being*. Ensure health and well-being for all, at all ages
4. *Quality education*. Provide a high-quality, equal and inclusive education and promote learning opportunities for all
5. *Gender equality*. Achieve gender equality and emancipate all women and girls
6. *Clear water and sanitation*. Guarantee availability and sustainable management of water and sanitary facilities
7. *Affordable, clean energy*. Ensure access to affordable, reliable, sustainable and modern energy systems
8. *Decent jobs and economic growth*. Stimulate lasting, inclusive and sustainable economic growth, full, productive employment and a decent job for all

9. *Industry innovation and infrastructure*. Build a resilient infrastructure, promote innovation and fair, responsible and sustainable industrialisation
10. *Reduced inequality*. Reduce inequality within and among countries
11. *Sustainable cities and communities*. Make cities and human settlements inclusive, safe, resilient and sustainable
12. *Responsible consumption and production*. Ensure sustainable models of production and consumption
13. *Climate action*. Take urgent measures to fight climate change and its consequences
14. *Marine life*. Protect and make sustainable use of the oceans, seas and marine resources for sustainable development
15. *Life on land*. Protect, restore and encourage sustainable use of land ecosystems, manage forests sustainably, fight desertification, stop and reverse land degradation and stop loss of biodiversity
16. *Peace, justice and strong institutions*. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and create effective, responsible and inclusive institutions at all levels
17. *Partnership for the goals*. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development.

The 2030 Agenda for sustainable development represents the United Nations Global Action Plan for People, Planet and Prosperity, which takes into account the need to support universal peace, freedom, to eradicate poverty in all its forms and dimensions, achieving a sustainable transformation of society, the economy and the environment thanks to all the possible partnerships from now until 2030, including considerations for safety, well-being and justice.

2.3 The United Nation indicators

The United Nations' global action plan for sustainable development, to be achieved in multiple steps by 2030, requires concrete policies and appropriate monitoring.

To identify a framework of shared statistical information as a tool for monitoring and evaluating progress towards the Agenda's objectives, the United Nations Statistical Commission formed the *Inter-Agency Expert Group on SDGs* (IAEG-SDGs), which proposed a first list of more than 200 indicators in March 2016 at the 47th session of the UN Statistical Commission.

The set of indicators, currently under revision, includes 244 indicators[8] (232 indicators are different: some indicators are used to monitor more than one goal).

8 Statistical Commission, Forty-eight session, 7-10 March 2017, Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators. United Nations Statistical Commission (2017). Statistical Commission, Forty-nine session, 6-9 march 2018 Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators. United Nations Statistical Commission (2018), Statistical Commission, Fifty session, 5-8 March 2019 Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators. United Nations Statistical Commission (2019), Statistical Commission, Fifty session, 5-8 March 2019 Report on the work for the review progress towards the Sustainable Development Goals. United Nations Statistical Commission (2019).

The indicators were classified into three levels (*Tiers I, II and III*). The first level includes all indicators with consolidated methodologies and standards and regularly produced by the countries (currently[9] 101 indicators, or 44% of the total); the second level includes the indicators that are not produced regularly (81 indicators, or 35%), even if they have consolidated methodologies and standards; the third level includes the indicators for which shared methodologies and standards are not available (44 indicators, or 19%).

Some indicators (2%) belong to multiple levels, given the diversity of their components, or do not yet have an indication of their levels.

The implementation process, which is still in progress, includes successive stages of updating to ensure the review of the indicators, their classification into the tiers and the preparation of the necessary metadata[10], useful in defining the indicators. Five meetings were held in 2017-2019 with Istat partecipation, in them the tiers for the indicators were re-examined and minor revisions were proposed and approved for some indicators[11]. The UN-IAEG-SDGs is considering some additional indicators, and the metadata for the Tier III indicators is being established, along with the agencies responsible (called the 'custodial agencies': UNEP, FAO, OECD, WHO, UNESCO, UNDP, ILO and others).

Remarkable progress was made in the methodology by the UN-IAEG-SDG group, which led to a reduction of the indicators in the Tier III group. Difficulties remain, however, for some goals that have most of their indicators still in the Tier III group and that therefore require more development. One possibility being discussed for the UN-IAEG-SDG group is to consider temporary use of the existing indicators as proxies for the immediate monitoring of the targets, pending the finalisation of the Tier III indicators.

A thorough review of the indicators will be anticipated in 2020, as well as another in 2025.

The proposals for review and the discussions will be held in 2019 and the proposal will be presented at the 51st Commission of March 2020.

The work of the specific working groups on Interlinkages, Geo-spatial Information, and Statistical Data and Metadata Exchange (SDMX) are also ongoing.

Istat partecipates actively to Interlinkages Group.

Drafting is under way for the guidelines on 'Data Flows and Global Data Reporting for SDG', considered an important starting point to improve coordination and harmonisation of the national and international systems and thus to help ensure international equivalence.

The urgency of strengthening the statistical capacities of national statistical systems has also been reiterated in the context of updating the SDG indicators.

All the countries, indeed, need to develop technical/scientific assets in this regard, as well as an effort to share their findings and dedicated investments. In addition to boosting the production of statistical information by current National Statistical Systems, the 2030 Agenda also requires the use of data to complement the official statistics and the use of innovative technologies and methods (Data Revolution).

9 Cfr. Nine Event of the Inter-Agency Expert Group on SDG indicators, 25 - 29 March 2019, ESCWA, Beirut, Libano.

10 The UN-IAEG-SDG metadata establish the indicators proposed for the monitoring and describe the methodologies needed for their implementation.

11 https://unstats.un.org/sdgs/iaeg-sdgs/tier-classification/ e http://unstats.un.org/sdgs/metadata/.

2.4 The international initiatives for Agenda 2030

An important element for the achievement of the 2030 Agenda is the High-Level Group for Partnership, Coordination and Capacity-Building for statistics for the 2030 Agenda for Sustainable Development (HLG-PCCB), of which Italy is a member. Ensuring strategic leadership in the monitoring and statistical reporting on the process of reaching the goals is the task of this group. The HLG-PCCB compiled a strategic document for achieving the 2030 Agenda, the Cape Town Global Action Plan[12] for data on sustainable development, presented at the UN's World Data Forum in January 2017 in South Africa[13] and approved by the United Nations Statistical Commission. This document provides a global vision for the planning and execution of measures to implement the 2030 Agenda with a list of actions aimed at strengthening the statistical capacities of the countries and national statistical systems to identify new strategies, develop quality statistical production and boost partnership and cooperation.

The UN General Assembly's July 2017 resolution[14] formally adopted the Cape Town Global Action Plan (CT GAP), recognizing the importance of national statistical systems and the coordination role of the National Statistical Institutes. The HLG-PCCB included a discussion of the implementation plan for the Cape Town Global Action Plan with attention to capacity building for the implementation of the CT GAP. This plan describes the measures needed to modernise and strenghten statistical systems, especially regarding building infrastructure and developing national and global statistical capabilities.

The second UN World Data Forum organized from HLG-PCCB (October 2018, Dubai) represented an important opportunity for dialogue between the various players in the CT GAP implementation process, and paid specific attention to the importance of strengthening the statistical capacity in the countries and of using quality data. The Dubai Declaration, drawn up at the end of the Forum, confirms the role of the CT GAP as a common framework for global statistics in the effort to improve data for sustainable development and calls for the establishment of an innovative, guided financing mechanism from the needs of countries, which can help them improve data quality and national statistical systems. The global funding mechanism would be an umbrella structure to coordinate and consolidate existing and future inputs for the implementation of the Global Action Plan and provide a system to promote coherence between the different approaches and projects undertaken in national contexts. The objective is "to mobilize national and international funds and activate partnerships and funding opportunities" to strengthen statistical capacity under the guidance of representatives of statistical systems and the donor community.

The 50th United Nations Statistical Commission approved the Dubai Declaration and the work of the HLG-PCCB on the aspect of financing and resource mobilization, and the High Level Forum on Financing for Data and Statistics highlighted the strong misalignment between the growing request for quality statistical data and the funding destined to strengthen the statistical systems of the partner countries, which should be doubled and go from 0.3% to 0.7% of the percentage of ODA (Official Development Assistance). In this context, starting from the Bern dialogue of January 2019, the Open Berna Network was also created, a

12 https://unstats.un.org/sdgs/hlg/Cape-Town-Global-Action-Plan/.
13 http://undataforum.org/.
14 https://undocs.org/A/RES/71/313.

place where donor countries and national statistical institutes dialogue to highlight how the official statistics, and in particular the strengthening of the statistical capacity for the implementation of the 2030 Agenda, should also be a priority for the donors themselves. The decisive factor is ensuring greater coordination and exchanging information between donor countries and, at the same time, increasingly aligning the action of cooperation in the field of statistics with the priorities defined by the partner countries.

The 2030 Agenda stimulated a number of initiatives for Europe. The United Nations Economic Commission for Europe (UNECE) appointed a Steering group within the Conference of European Statisticians (CES), of which Italy is a member, which worked on a road map for the development of statistics for the SDGs Europe-wide. This road map, focussing on the coordinating role of the National Statistical Institutes, delineates a strategy for creating a monitoring system for the SDGs and will guide the CES members towards the achievement of the goals of the declaration adopted in June 2015[15].

The first edition of the Road Map on Statistics for SDGs was discussed and approved during the Plenary Session of the Conference of European Statisticians in June 2017[16].

2.5 The European Commission and SDGs

The European Commission adopted three communications on 22 November 2016 that outline the course for implementing the 2030 Agenda. The first communication clarified how the Commission's action priorities can and should contribute to reaching the goals for sustainable development[17] and how the Commission aims to update and strengthen the principles of sustainable development in its policy actions. The other two communications[18], instead, regarded the Commission's cooperation policies reviewed in light of the sustainable development goals.

On 20 June 2017, the Council adopted the conclusions related to 'A Sustainable European Future: The EU response to the 2030 Agenda for Sustainable Development'[19], urging the Commission to perform regular monitoring of the SDGs for Europe.

In 2018, the European Commission launched the 2030 Agenda implementation procedure, also through the activities of the "Multi-Stakeholder Platform on the implementation of Sustainable Devolutions Goals". This worked on the production of Recommendations useful for the transformation of SDGs into practical solutions for the well-being of our present and the future of future generations. In this context, in October 2018 the document "Europe moving towards a sustainable future" was released,[20] which explicitly refers to the universal

15 https://undg.org/wp-content/uploads/2015/11/CES-declaration-on-national-statistical-offices.pdf.
16 http://www.unece.org/index.php?id=47510.
17 COM(2016) 739 final, https://ec.europa.eu/europeaid/sites/devco/files/communication-next-steps-sustainable-europe-20161122_en.pdf.
18 COM(2016) 240 final, https://ec.europa.eu/europeaid/sites/devco/files/communication-proposal-new-consensus-development-20161122_en.pdf e JOIN(2016) 52 final, https://ec.europa.eu/europeaid/sites/devco/files/joint-communication-renewed-partnership-acp-20161122_en.pdf.
19 A Sustainable European future: The EU response to the 2030 Agenda for Sustainable Development - Council conclusions (20 June 2017), Brussels. http://data.consilium.europa.eu/doc/document/ST-10370-2017-INIT/en/pdf.
20 https://ec.europa.eu/info/sites/info/files/sdg_multi-stakeholder_platform_input_to_reflection_paper_sustainable_europe2030.pdf.

and indivisible nature of the SDGs: among the priority actions it is recommended that the EU develop and implement a Sustainable Development 2030 strategy capable of guiding all Union policies and programs, in compliance with the "leave no one behind ", the limits of the planet and respect for human rights and laws. The document also calls for a coherent approach to be ensured, for which strategies and actions are needed for regions, cities, citizens, communities, businesses and civil society. Specific recommendations concern: sustainable consumption and production; investments in research and innovation, human capital, employment and social inclusion; climate change and renewable energy policies; inclusion of Food, Farming and Land use in agricultural policies; cohesion policies that support the implementation of SDGs also in sub-national programs and in the Urban Agenda, promoting social objectives and encouraging investments for more sustainable infrastructures. In this context, accessible and transparent statistical information is a key factor also in relation to the necessary National Reports.

The European Commission document "Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank"[21] is Consistent with the issues related to sustainability.

In the framework of this debate on the future of Europe, the European Commission published, on January 30, 2019, the document "Towards a sustainable Europe by 2030" (Reflection Paper "Towards a Sustainable Europe by 2030"[22]).

The document expresses the EU's firm commitment to achieving the UN's sustainable development goals, including in relation to the Paris agreement on climate change. The document intends to guide the discussion on how to best achieve these objectives and on the best way in which the Union can make its contribution by 2030.

Over the years, the EU has become a pioneer in the field of sustainability, with social and environmental standards among the highest in the world, and has strongly supported the Paris agreement on climate and related innovative solutions, such as the economy circular. Since the beginning of its mandate, the Commission has integrated the priorities of sustainable development into its policies. However, like the rest of the world, the European Union is facing with complex, changing and urgent challenges, particularly concerning ecological debt and climate change, demographic changes, migration, inequality, economic and social convergence and the pressure on public finances.

The Commission document focuses on the areas of intervention on which to base the transition to sustainability: the transition from a linear economy to a circular economy, in order to re-use resources, reduce recourse to the planet's natural capital and emissions of greenhouse gases; the need to guarantee sustainability throughout the supply chain from the producer to the consumer through, for example, particular attention to the agri-food system; issues related to the energy of the future, buildings and mobility. It is also necessary to guarantee a fair transition that leaves nothing and no one behind: technological, structural and demographic evolution in a more interconnected world is transforming the nature of work, often with negative effects, and is therefore necessary to prevent that the transition to a sustainable economy creates new social imbalances. Investments in the social sphere must therefore

21 Brussels, 21.11.2018 COM (2018) 770.
22 https://ec.europa.eu/commission/publications/reflection-paper-towards-sustainable-europe-2030_it.

remain an absolute priority, also in the sectors of education and training, working conditions, healthcare, social inclusion and minority rights, gender equality and rural development.

The document also defines the key assumptions that must be at the basis of the transition to sustainability: education, training, science, technology, research, innovation and digitization to increase productivity and decrease consumption of natural resources; finance, taxation, competition and price fixing, to reflect the environmental costs of production; responsible production, social responsibility and new business models to achieve more sustainable profits and growth; open trade based on shared rules to guarantee equity; governance and policy coherence at all levels.

The importance of the European Union as a pioneer in the transition to a sustainable economy at world level is therefore highlighted, and three scenarios are presented to stimulate discussion on how to pursue sustainable development objectives within the EU. They could even be considered jointly:

1. a general EU strategy on SDGs to guide the actions of the Union and Member States;
2. continuous integration of SDGs by the Commission in all relevant European Union policies, but without imposing measures on Member States;
3. external action, which consolidates the principle of sustainability at EU level.

The Reflection paper promotes, then, the debate and the reflection "Towards an Ever More Sustainable Union by 2030" and in perspective it could hypothesize a change for Eurostat's role in monitoring European objectives and European policies. In 2016, the European Commission communication "Next steps for a sustainable European future: European action for sustainability" asked Eurostat to monitor related developments at the European level. This was reinforced by what was expressed in the "A sustainable European future: the EU Response to the 2030 Agenda for Sustainable Development".

Eurostat performed an analysis of the demand for information associated with the SDGs and an investigation of the existing statistical information. The indicators were evaluated based on their relevance to the European context and their relevance for the official statistics. Looking at the 232 UN-IAEG-SDGs indicators 41 were considered as "not statistics", 38 as "not relevant to the European context" and 153 as "relevant for the European politics".

Following this investigatory project, Eurostat distributed analyses of the situation in the European Union with respect to the 2030 Agenda goals, considering 100 selected indicators[23]. These are aimed at monitoring the progress of the SDGs in Europe, taking into account European policies such as Europe 2020, the 10 priorities set by the Commission and matters related to the circular economy. The indicators are directly linked to the Goals and not always to the UN-IAEG-SDG list; many of them are used to monitor more than one Goal. This group of indicators remains open for further changes and will be used to produce further reports each year. Recently[24] the importance of aligning Eurostat indicators with UN indicators was reiterated, especially in relation to the forthcoming 2020 revision of the latters. In the most recent version of the indicators only 55 are aligned with the UN-IAEG-SDGs indicators.

23 https://ec.europa.eu/eurostat/web/sdi; http://ec.europa.eu/eurostat/documents/3217494/8461633/KS-04-17-780-EN-N.pdf/f7694981-6190-46fb-99d6- d092ce04083f.

24 Doc. SDI/WG1910, Sustainable development and european 2020 indicators working group, 26-27 March 2019, Agenda item 10.

The topic of indicators for sustainable development has also been included in the scope of the European Statistical Programme.

In this context, the National Statistical Institutes (NSIs) were assigned a crucial role. This was primarily due to their methodological and technical expertise, and also because they act as references for the national production of data and as coordinators of national research and experimental initiatives on alternative data sources for the production of indicators useful for monitoring the SDGs. Some European countries have distributed specific systems of indicators for the SDGs, and many are considering to implement platforms to share and distribute statistical information dedicated to or useful for monitoring.

2.6 Navigating the SDGs and statistical gap complexity

The key principle of SDGs - Keeping on with the economic and social development ensuring meeting the needs of present generation without compromising those of the future ones - is no doubt a challenge for countries and national statistical systems, but it can be transformed into a relevant opportunity, both for European and national policies, and for quality statistical information. The complexity of the SDGs is one of the characteristic elements, together with the further incontrovertible element, that these refer to very concrete issues that concern each of us.

The domains that constitute the “pillars” of SDGs - social, environmental, economic and institutional – have to be understood, in fact, considering three catalyst principles: universality, integration, participation.

Universality refers to the need to consider objectives with a perspective that goes from global to national and to local (regional and / or urban). This is realized in the application of the “No one left behind principle”: to ensure well-being in an equitable manner, attention must be given to gender issues, territories, citizenship, disabilities, different generations. Sustainable equality has to be guaranteed, that is, intra-generational and inter-generational equity.

The integration of domains - social, environmental, economic, institutional - and their interactions highlight synergies or, vice versa, trade-offs that can be generated between objectives. It is therefore a matter of considering the interconnections between human and natural systems, the interactions between environmental, social and economic issues and institutional issues. In an integrated global perspective, for example, sustainability must be considered together with climate change and its effects also in terms of hazardous events and disasters: the interconnections and interactions between people, planet, peace, prosperity, participation are evident. There are many references to the well-being of people and to a fair distribution of the benefits of development, intra and inter-generational.

The participation of companies, institutions, citizens, regions, cities, communities, civil society, the scientific world is necessary and involves everyone to promote in a concrete way and guarantee the culture of sustainability.

Objectives, targets, indicators, even if organized in single components, are interdependent, integrated and indivisible in order to consider in a balanced way the economic, social, environmental and institutional dimensions of sustainable development.

There are, therefore, many ties between the 17 Goals and the 169 Targets, which reinforce them or may enter into conflict. Navigating the complexity, analyzing the interconnections between the indicators and making the correlations explicit (positive or negative) can be a key factor for strengthening, which guides the statistical analysis. The steps taken to achieve progress for a Goal could be reinforced or could compete with those established for another Goal. For this reason, both at international and national level, attention is paid to the analysis of interlinkages.

2.7 SDGs indicators: challenges and opportunities for Istat and the National Statistical System

Adjusting the relevancy of the SDGs targets and the global indicators with the experiences of individual countries is no doubt a challenge for statistics, as well as an opportunity for the National Statistical System and for our country, and concretely applies the principle of the United Nations "better data, better lives".

To meet the global and national demand for information, Istat has intensified its development and strengthening of the statistical measures to allow monitoring of the country's progress towards the Sustainable Development Goals.

Legislative Decree no. 322 of 6 September 1989, the United Nations Statistical Commission for the implementation of the 2030 Agenda and the Economic Commission for Europe are entrusting Istat with a coordinating role: the Institute is coordinating the official statistical offer produced by different institutional players in the National Statistical System (Sistan); the international community is assigning the National statistical institutes the task of coordinating the production of the SDGs statistical indicators on the national level.

The Cape Town Global Action Plan, the Road Map on Statistics for Sustainable Development Goals and the Dubai Declaration are strategic documents that are also useful for the National Statistical System, since they outline the strategic guidelines for strengthening our statistical production abilities.

Istat is engaged in analysing the indicators proposed by the Inter-Agency Expert Group on SDGs (UN-IAEG-SDGs), participating in international exchange and meeting opportunities and tracking the changes and developments under way. The experience gained so far is also useful in international cooperation experience.

At the same time, the work of inter-institutional comparison, previously done both within and outside of Sistan, produced a huge increment of SDGs statistical information and will allow Istat to complete the construction of a methodologically consistent, integrated and shared mapping of all the SDGs measures

The national road-map includes to continue with the definition of the indicators used for the 2030 Agenda, the development of the indicators that are not yet available, promoting information sharing, the necessary and profitable synergies, including those with the custodial agencies, and it includes to continue in the integrated reading and analysis of monitoring objectives and measures.

Beginning in 2016, Istat released a statistical platform dedicated to the national measurements necessary tomonitoring the SDGs. In some cases, the national measurements identified are identical to the indicators required by the UN-IAEG-SDGs; in other cases, the measurements produced are either similar or partial (that is, not all the data are available, or not all of them in the form required by the UN-IAEG-SDGs). Additional measurements that are 'specific' to the national context have been added.

To ensure the quality of statistical information in selecting and developing the indicators as part of the changing construction of the informational platform dedicated to the Sustainable Development Goals, the following requirements for acceptance have been considered: transparency of the methodologies, frequency of distribution, timeliness, geographic coverage and comparability, comparability over time and length of the time series, and ease of interpretation.

The statistical indicators were also produced thanks to cooperative efforts with various institutions members of the Italian statistical system, including the Italian Institute for Environmental Protection and Research (ISPRA), ENEA, GSE, INGV, INVALSI, the Ministry of Environment and Land and Sea Protection, the Ministry of Economy and of Finance, the Ministry of Foreign Affairs and International Cooperation, the Ministry of Justice, the Ministry of the Interior, the Ministry of University Education and Research, the Ministry of Health, the Italian National Health Institute (ISS), ASviS, Consob, Cresme.

Furthermore, the indicators are in line with the indicators of Equitable and Sustainable Well-being (BES), which have been included in the economic-financial planning cycle since 2017.

The national measurements for monitoring the SDGs were made available progressively in several releases (95 national measurements for 66 UN indicators in December 2016, 173 measurements for 100 indicators in May 2017, 201 measurements for 109 SDGs indicators in December 2017, 235 measurements for 117 indicators in July 2018, 244 measurements for 117 indicators in December 2018, 303 statistical measurements for 123 indicators in April 2019) in order to provide continuous updates and enhancements and, simultaneously, to keep pace with the changes taking place in the international and national framework. In this last release a special attention is dedicated to the regional disaggregation and to the disaggregation that consider urban sustainability, gender, citizenships, disability.

The SDGs measures available constitute the necessary input to measure the National Sustainable Development Strategy[25] (NSDS), which recognizes the key role of Sistan and Sistan in their production.

The strategy was approved by the Interministerial Committee for Economic Planning on 22 December 2017[26]. The Council President's Directive containing guidelines for implementing the NSDS issued on 16 March 2018 stressed the importance of the activities connected with the monitoring of the national strategy related to the Sustainable Development Goals, coordinated by the Presidency of the Council of Ministers[27].

25 Presented at the Council of Ministers in October 2017: http://www.minambiente.it/sites/default/files/archivio_immagini/Galletti/Comunicati/snsvs_ottobre2017.pdf.

26 CIPE Resolution no. 108/2017, published in the Official Journal on 15 May 2018. The technical annex laid down by the National Strategy for Sustainable Development refers explicitly to the need to arrive at a representative set of indicators relevant to monitoring the implementation of the strategy and useful to the Presidency of the Council of Ministers, considering this to be the indicators publicised by Istat and developed by the National Statistical System.

27 The directive assigns to the Presidency of the Council of Ministries the coordination of the actions and policies

A useful measure to ensure the monitoring of Italy's performance in the areas that make up the NSDS is the definition of a subset of indicators, identified among those disseminated in the Istat-Sistan information platform dedicated to the SDGs indicators. The need to define a core of indicators for the NSDS monitoring also derives from the needs linked to the path of its declination at the regional level, as required by Article 34 of the Legislative Decree 152/2006 and subsequent amendments.

In March 2018, on the initiative of the Ministry of the Environment and the Protection of the Territory and the Sea, a working Table was set up on indicators for the implementation of the NSDS[28] with the aim of defining a small and representative core set of indicators with reference to all the Goals.

The Table defined and agreed upon the criteria for selecting the indicators and the methodological approach needed to identify a first set of indicators. In fact, it was agreed to refer to the methodological criteria adopted by the BES Committee, established pursuant to art. 14 of law 163/2016, adapting and expanding them to incorporate a further criterion of spatial disaggregation of reference data, at least at a regional level.

The following general, non-hierarchical criteria have therefore been adopted:

Parsimony: it is necessary to consider a set of indicators that gives an account of the complexity implicit in the strategic choices of the NSDS and in the 17 objectives of the 2030 Agenda. At the same time, however, it is appropriate to consider a limited number of indicators trying to maintain the wealth of information, to guarantee coverage for all Goals and also to consider the reciprocal links between them.

Feasibility: it is essential that the quality statistical data for the construction of the indicators can be updated or susceptible of being temporally aligned. This need must necessarily take into consideration the development activities of additional indicators by Sistan. This criterion is guaranteed by the inclusion of the indicators that will gradually become available within the Information Platform relating to the Istat-Sistan SDGs.

Timeliness: extension and frequency of the time series: the time series must be long and with frequency fit to the phenomena to be monitored. The selection must take into account both the current availability and the possibility of increasing its timeliness.

Sensitivity to public policies: considering the established purpose of monitoring public policies and in accordance with regulatory references, it is necessary to identify indicators sensitive to public policies, even at regional level, within a time frame that considers the medium and long term to evaluate the sustainability in the 2015-2030 period.

Territorial dimension: considering the need to build a set of indicators that allows a "dialogue" between NSDS and regional strategies, the selected indicators must, as far as possible, be available, currently or in the next future, at least for the regional territorial level. Further territorial disaggregations (urban and not only) are necessary and to be considered in perspective, in order to guarantee the international UN-IAEG-SDGs principle of "No one left behind".

involving the National Sustainable Development Strategy as well as the efforts made to produce regular updates to that strategy. To this end, it institutes the National Commission for Sustainable Development presided over by the Presidency of the Council of Ministries or the delegate thereof.

28 Experts from Italian Institute for Environmental Protection and Research, the Ministry of the Environment and Protection of the Land and Sea, the Ministry of Foreign Affairs and International Cooperation, the Ministry of Economy and Finance partecipated to this technical working group.

According to the methodological approach identified, the choice of the subset of indicators must be made between those of the dedicated Istat-Sistan platform, specifically preferring:

- indicators that refer to UN IAEG Tier I indicators, of which, therefore, the reference metadata at international level are agreed;
- national indicators possibly "identical" in the formulation of metadata that ensure comparability at international and even European level;
- indicators derived from National Statistical System sources.

These criteria have to be used being aware of the information peculiarities linked to environmental and social phenomena.

This second Istat Report on Sustainable Development Indicators and the further release of indicators contained in it witnesses a continuing collaboration with other Sistan institutions and with international agencies.

The purpose of the current and future activities is to offer an enhanced statistical information framework for measuring sustainable development, enlarging the set of national SDGs measures available, ensuring the breakdowns useful in monitoring progress in view of the basic principle of 'no one left behind' and making the subject area and methodological investments to meet the global, national and regional information demand.

A renewed attention was also dedicated to the integrated analysis of existing interlinkages between Indicators, Goals and Targets, also useful for production, reporting and monitoring.

In the next editions the updating and expansion of the indicators will continue, also in terms of further disaggregations, together with further integrated analyzes, in order to build the statistical information necessary to ensure a sustainable future, a modern economy and the well-being of all on a inhabitable planet.

3. ANALYSIS OF SDGs INDICATORS: FROM THE GLOBAL PERSPECTIVE TO THE NATIONAL CONTEXT

Reading guide

In this sixth edition 123 UN-IAEG-SDG indicators are considered, for which 303 national statistical measures are available, including those on the dedicated platform accessible from Istat website (www.istat.it). Manteining the system of indicators is possible with the collaboration of various institutions involved in the reconnaissance, selection and production process launched three years ago.

This section provides an analysis of the information available to meet both the national and international demand, with special attention to breakdowns by region and by gender.

Each of the goals has a section that provides first a brief introductory explanation of the goal and its targets and the overview of the statistical measurements produced and the related essential metadata; the SDGs statistical platform contains 96 statistical measurements identical to those required by UN-IAEG-SDGs, 117 similar or partial statistical measurements, and 90 statistical measurements specific to Italian national context[1].

The introduction to each goal continues with a focus on some indicators for which the evolutionary process is traced, from the global perspective to the national context. Other selected relevant indicators are considered by way of example and analysed by region, when feasible.

The summary of the trends measured by the indicators is prepared by calculating their changes over four time periods of reference:

- *Short term* (last year available from *t-1*, usually 2017 from 2016);
- *Medium term/last five-year period* (last year available from *t-5*, usually 2017 from 2012);
- *Medium term/previous five-year period* (*t-5* from *t-10*, usually 2012 from 2007);
- *Long term* (last year available from *t-10*, usually 2017 from 2007).

In case values for the years indicated are not available, the changes are calculated for the periods closest to the reference period, or not calculated if the available time series does not permits satisfactory approximations.

The changes are thus classified based on the values of a *Compound Annual Growth Rate (CAGR)*

$$\text{CAGR} = \left(\frac{y_t}{y_{t_0}}\right)^{\frac{1}{t-t_0}} - 1 ,$$

1 The rest of this section will, for simplicity's sake, refer to statistical indicators for the national statistical measurements as well.

where t_0 is the base year, t is the most recent year and y the value of the indicator for those two years.

With reference to these intervals, for the indicators showing positive movement (that is, the ones whose change indicates convergence towards the goal), the trends are generally considered:

- *Sharp improvement* for CAGR values greater than 0.05 (that is, for annual compound average growth rates greater than 5%);
- *Slight improvement* for CAGR values minor or equal to 0.05 and more than 0.01;
- *Stable* for CAGR values minor or equal to -0.01 and more than 0.01;
- *Slight deterioration* for CAGR values minor or equal to -0.01 and more than -0.05;
- *Sharp deterioration* for CAGR values minor or equal to -0.05.

The scale is, of course, applied in the opposite way for indicators showing negative trends.

In the graphical summary, the results of the evaluation are shown by a coloured scale on a matrix of indicators *x intervals* (*sharp improvement* in dark green, *slight improvement* in light green, *stable* in yellow, *slight deterioration* in orange and *sharp deterioration* in red). The cells that refer to intervals not covered by the available time series are left white.

GOAL 1

END POVERTY IN ALL ITS FORMS EVERYWHERE[1]

The extreme poverty rate has fallen sharply over the last twenty years: in 2013 it was one third of the 1990 value. The last global data, referring to 2013, estimates that 11% of the world population, 783 million people, live below the extreme poverty line of $ 1.90 a day[2], failing to meet the most basic needs, such as food, health, education, access to water and sanitation. In the world the proportion of workers living on less than $ 1.90 per person per day has decreased significantly over the last two decades, from 26.9% in 2000 to 9.2% in 2017.

Signing the 2030 Agenda in 2015, governments committed themselves to ending poverty over the next 15 years, so that all people, anywhere in the world, can enjoy an adequate standard of living and have opportunities to reach their full potential. To allow people to get out of poverty it is necessary to guarantee equal rights, access to economic and natural resources, technological resources, property and basic services. It is also necessary to guarantee all the necessary aid to the communities affected by climate-related disasters.

Ending poverty of all kinds, including its extreme forms, through interconnected strategies, is the issue of Goal 1. Providing people in all parts of the world the support they need, including through the promotion of social protection systems, is the very essence of sustainable development.

1 This section was edited by Barbara Baldazzi with the contribution from: Valeria De Martino, Francesca Lariccia and Federico Polidoro.

2 Since October 2015 the threshold has been raised to $ 1.90, but the Target has not been updated.

Targets

Goal 1 is articulated into seven Targets, the last two Targets regarding the means of implementation:

1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day[3].

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.

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.

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.

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.

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 dimensionsi.

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.

3 See previous note.

Indicators released by Istat

Istat releases 25 statistical measures related to six Targets.

Table 1.1 - SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicators	Last available value
SDG 1.1.1 - Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)		
In-work at-risk-of-poverty rate (a) (Istat, 2017, %)	National context	12.2
SDG 1.2.1 - Proportion of population living below the national poverty line, by sex and age		
Proportion of population living below the national (absolute) poverty line (Istat, 2017, %)	Identical	8.4
Proportion of population over 14 years old living below the national absolute poverty line (Istat, 2017, %)	Identical	7.8
Proportion of population living below the national (relative) poverty line (Istat, 2017, %)	Identical	15.6
SDG 1.2.2 - Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions		
At risk of poverty or social exclusion - AROPE (Istat, 2017, %)	Identical	28.9
Severe material deprivation rate (Istat, 2017, %)	Partial	10.1
Low work intensity (Istat, 2017, %)	Partial	11.8
People at risk of poverty (Istat, 2017, %)	Partial	20.3
SDG 1.3.1 - Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable		
Population aged 16 and over reporting unmet needs for medical care due to being too expensive (a) (Eurostat, 2007, %)	National context	3.3
SDG 1.4.1 - Proportion of population living in households with access to basic services		
Households unsatisfied for the continuity of the water supply service (Istat, 2018, %)	Partial	10.4
Households very or fairly satisfied with the continuity of the service of electricity supply (Istat, 2018, %)	Partial	93.0
Inability to keep home adequately warm (Istat, 2017, %)	Partial	15.2
Households per difficulties of links with public transport means (Istat, 2018, %)	Partial	32.4
Landfill of waste (Ispra, 2017, %)	Partial	23.4
Housing cost overburden rate (Istat, 2017, %)	National context	8.2
Households with fixed and/or mobile broadband connection (Istat, 2018, %)	Partial	73.7
People aged 6 and more 'who use their mobile phone at least a few times a year (Istat, 2018, %)	Partial	91.6
SDG 1.5.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population		
Population at risk of landslides (Ispra, 2017, %)	National context	2.2
Population at risk of flood (Ispra, 2017, %)	National context	10.4
Deaths and missing persons for landslides (Ispra, 2018, n)	Partial	12
Deaths and missing persons for floods (Ispra, 2009, n)	Partial	10
Injured persons for landslides (Ispra, 2018, n)	Partial	29
Number of injured persons for floods (Ispra, 2017, n)	Partial	....
SDG 1.a.2 - Proportion of total government spending on essential services (education, health and social protection)		
Proportion of total government spending on essential services (education, health and social protection) (Istat, 2017, %)	Identical	64,729
Proportion of bilateral Official Development Assistance spending on essential services for developing countries (education, health and social protection) (Ministero degli Affari Esteri e della Cooperazione Internazionale, 2017, %)	Identical	47

(....) The phenomenon exists, but the data is not known for any reason.

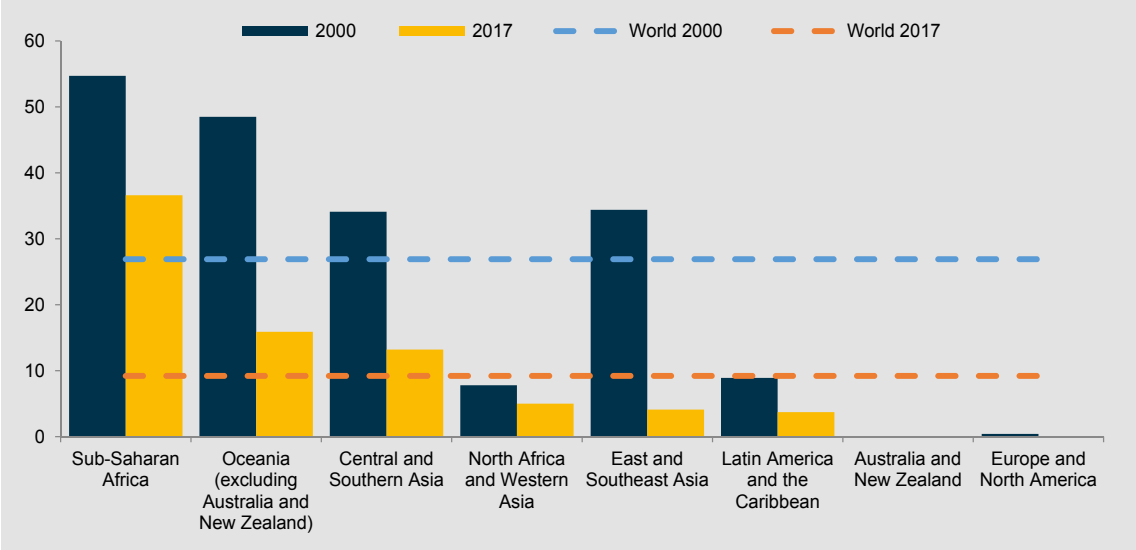
Focus

SDG 1.1.1 - Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

In emerging and developing countries, in 2017, about 300 million workers lived in conditions of extreme poverty, a data that rises to over 700 million when workers classified as moderately poor are added (who live with less than 3.10 US $ per day). Progress in reducing people in work at risk of poverty is still too slow to keep pace with the expansion of the workforce and the number of workers in extreme poverty in the developing world is expected to remain at over 100 million.

More intense efforts are needed, especially for the populations of the countries of Sub-Saharan Africa, where extreme poverty regarded, in 2017, more than 35% of the workers.

Figure 1.1 - In-work at-risk-of-poverty rate. Years 2000 and 2017 (%)

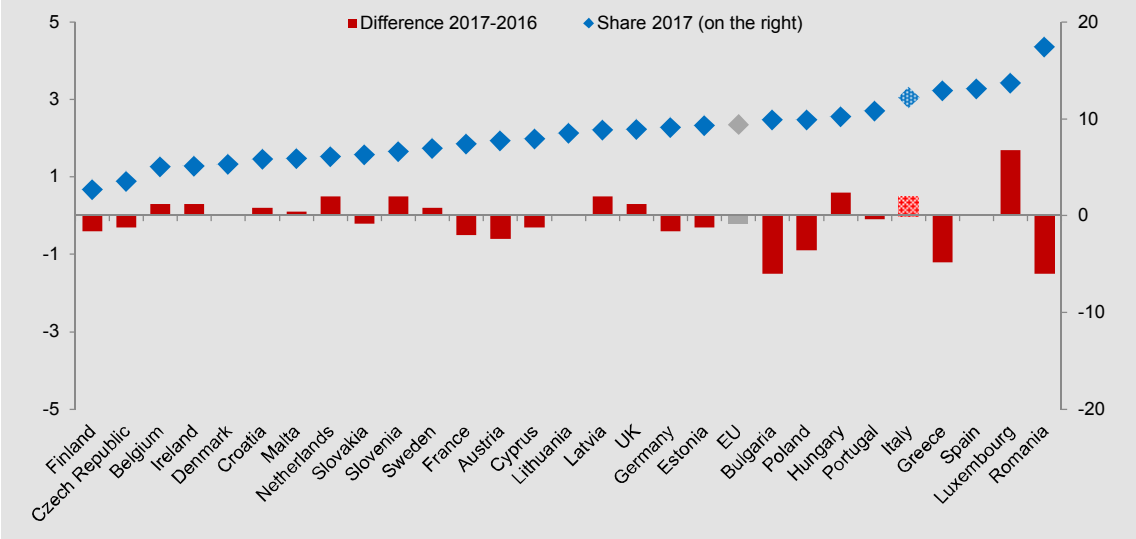


Source: ILO

In Europe, extreme poverty is not to be found among the workers; it is possible, however, to calculate the rate of people in work at risk of income poverty, i.e. those who, although having a job, receive an equivalent income below 60% of the median equivalent income (after social transfers). In Europe, 9.4% of employed people live in conditions of income poverty; Italy is fifth last among the nations of the European Union, with 12.2% of people at risk of poverty. Only Greece, Spain, Luxembourg and Romania have higher percentages of workers at risk of poverty.

In Italy, the economic crisis between 2008 and 2014 has made "poor" work even more widespread. It is linked with low pay, with a smaller amount of hours worked (18.6% of those with a part-time work), with a low level of education (20.9% of those in employment with at least a first-level secondary school diploma), the precariousness of the employment contract (22.5% of who have a fixed-term employment contract are at risk of poverty), with being a foreign citizen (32.8% of foreign citizens are at risk of poverty).

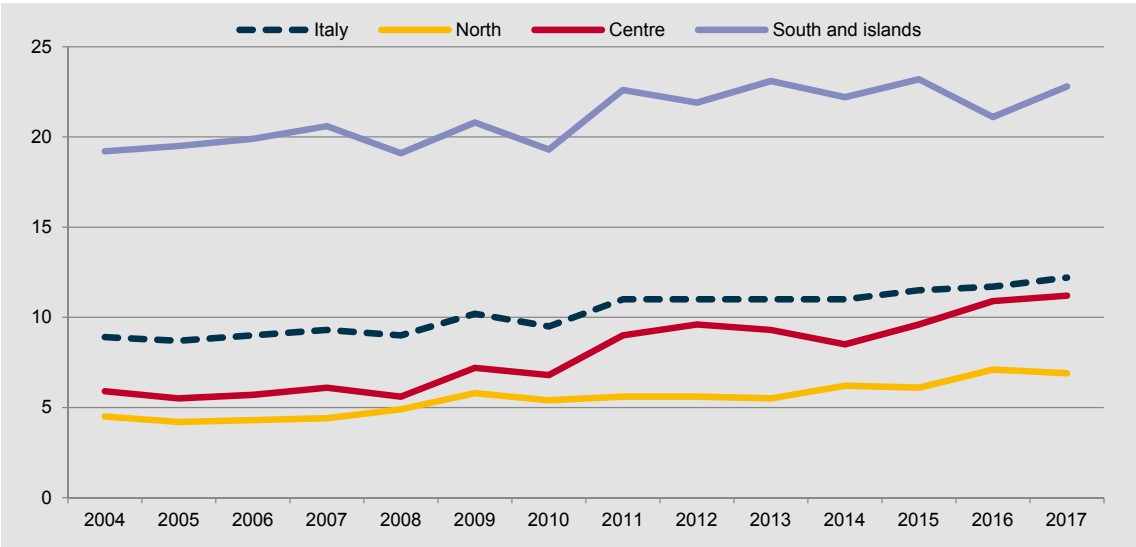
Figure 1.2 - In work at risk of poverty. Year 2017 and 2016/2017 variation



Source: Eurostat, EU-Silc

Among people in work in Northern Italy, the percentage of those at risk of poverty rose from 4.5% in 2004 to 6.9% in 2017; in the South and Islands area, the share of "poor workers", which was already very high, grew from 19.2% to 22.8%; while the people in work at risk of poverty in Central Italy nearly doubled (from 5.9% to 11.2%).

Figure 1.3 - In work at risk of poverty. Years 2004-2017 (%)



Source: Istat, EU-Silc

SDG 1.2.2 - Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

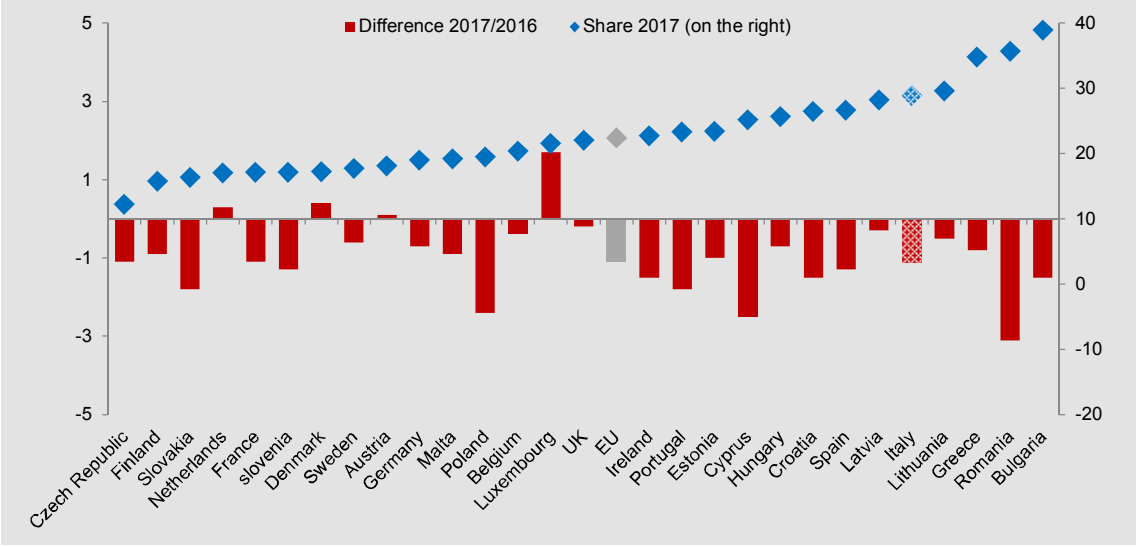
To monitor the achievement of the Goal 1 in the European and Italian context, it is appropriate to relate to the national line of absolute poverty and to European indications concerning

multidimensional poverty (at risk-of-poverty[4], severely material deprivation[5], low work intensity[6]).

An indicator of multidimensional poverty is that relating to people at risk of poverty or social exclusion. This indicator corresponds to the sum of persons who are: 1) at risk of poverty or 2) severely materially deprived or 3) living in households with very low work intensity.

In 2017, 113 million people, equal to 22.4% of the EU28 population (down from 23.5% in 2016), were at risk of poverty or social exclusion. In Italy, the population at risk of poverty or social exclusion was equal to 28.9% (around 17 million and 407 thousand individuals), a decrease compared to the previous year (30%). In contrast, Luxembourg, Denmark, the Netherlands and Austria reported an increase in the percentage of people in poverty or social exclusion compared to the previous year. The value for Italy is largely lower than that of Bulgaria (38.9%), Romania (35.7%), Greece (34.8%), but it is far superior to that of the Czech Republic (12, 2%) and Finland (15.7%) and larger European countries, such as France (17.1%) and Germany (19%).

Figure 1.4 - People at risk of poverty or social exclusion. Year 2017 and 2016/2017 variations



Source: Eurostat, Eu-Silc

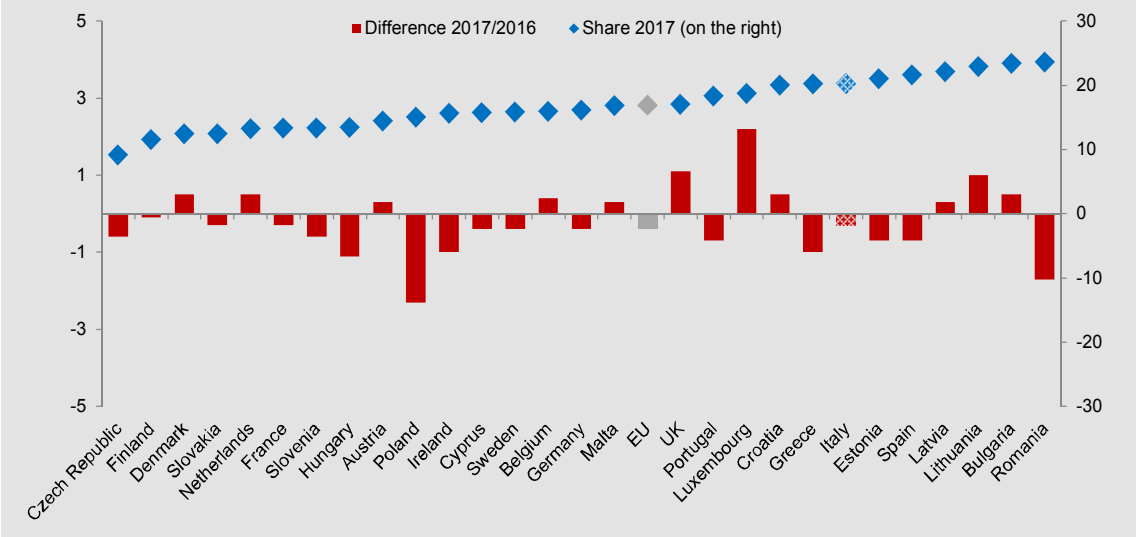
In Europe, income poverty is the most widespread form of poverty. In 2017, 85.3 million people (16.9% of the EU population, down from 17.3% in 2016) lived at risk of poverty, after social transfers (such as unemployment and sickness benefits or disability benefits among others). The share varied among European countries, from 9.1% (Czech Republic) to 23.6% (Romania). In Italy, people at risk of poverty were 20.3% of the population.

4 At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).

5 Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone.

6 People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) work 20% or less of their total work potential during the past year.

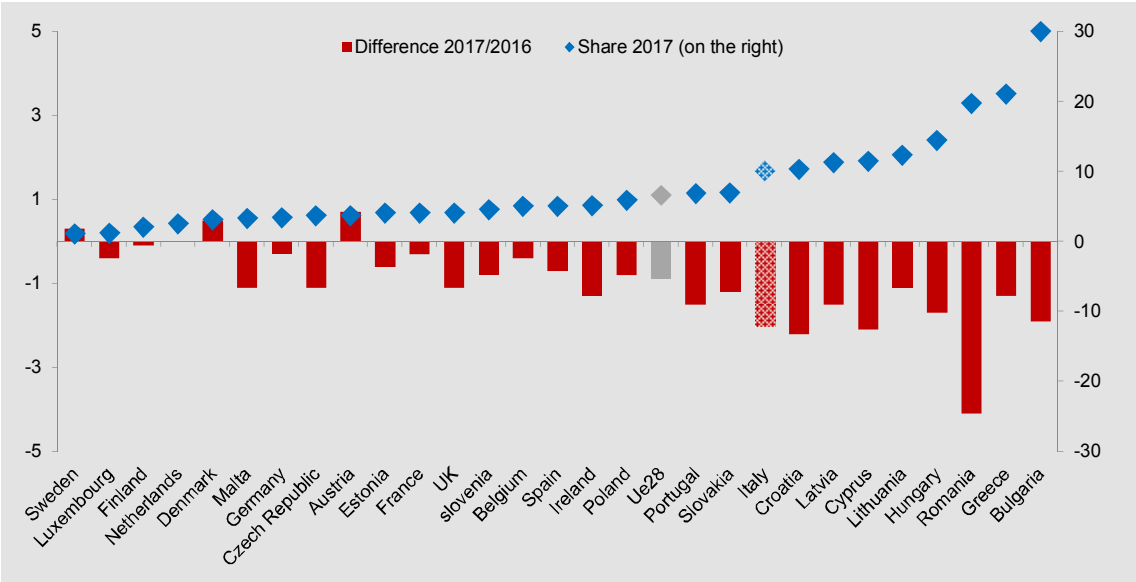
Figure 1.5 - People at risk of poverty. Year 2017 and 2016/2017 variation



Source: Eurostat, Eu-Silc

The severely material deprivation indicates the impossibility of a person to afford certain goods and / or services considered by most people as desirable or necessary. In 2017, the severely material deprivation affected 33.1 million people in the EU population (6.6% down compared to 7.5% in 2016). The decrease compared to the previous year is a phenomenon that cuts across all European countries: the only exceptions are Denmark, Sweden and Austria.

Figure 1.6 - Share of people in severely material deprivation. Year 2017 and 2016/2017 variation



Source: Eurostat, Eu-Silc

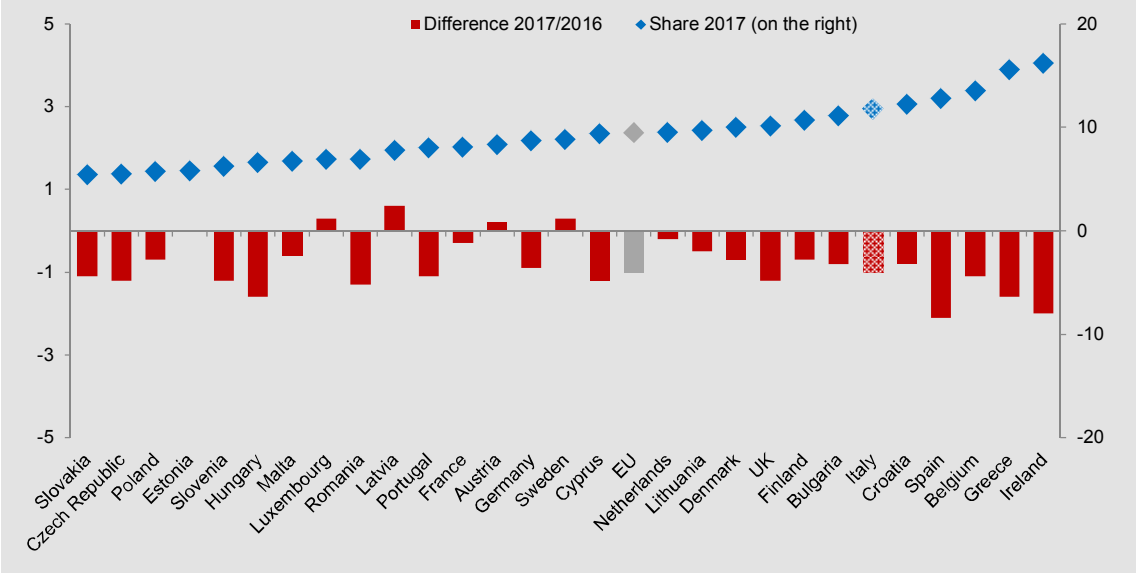
In Italy, the share of those living in a condition of severely deprivation fell, in 2017, to 10.1%, still above the European average of 4.5 points. 8 countries experienced worse conditions than Italy: Croatia, Latvia, Cyprus, Lithuania and Hungary, with percentages between 10.3%

and 14.5%; Romania, Greece and Bulgaria with much higher values, respectively 19.7%, 21.1% and 30%.

Living in families with very low work intensity is the third form of poverty included in the composite indicator. In 2017, 35.3 million people, or 9.5% of the EU population, lived in families with very low work intensity (they were 10.5% in 2016).

In Italy, poverty and social exclusion are strongly linked to the difficulty of entering and remaining in the labor market. Indeed, the very low work intensity concerned 11.8% of people. Higher quotas were recorded only in Croatia (12.2%), Spain (12.8%), Belgium (13.5%), Greece (15.6%) and Ireland (16.2%).

Figure 1.7 - Share of people in families with low work intensity. Year 2017 and 2016/2017 variation



Source: Eurostat, Eu-Silc

The three components of the indicator show different trends, both temporally and geographically. In 2017, 20.3% of residents in Italy were at risk of income poverty, substantially stable compared to 20.6% in 2016; 10.1% find themselves in conditions of severely material deprivation, down from 12.1% in 2016; 11.8% live in low-work intensity households, down compared to 2015 (12.8%).

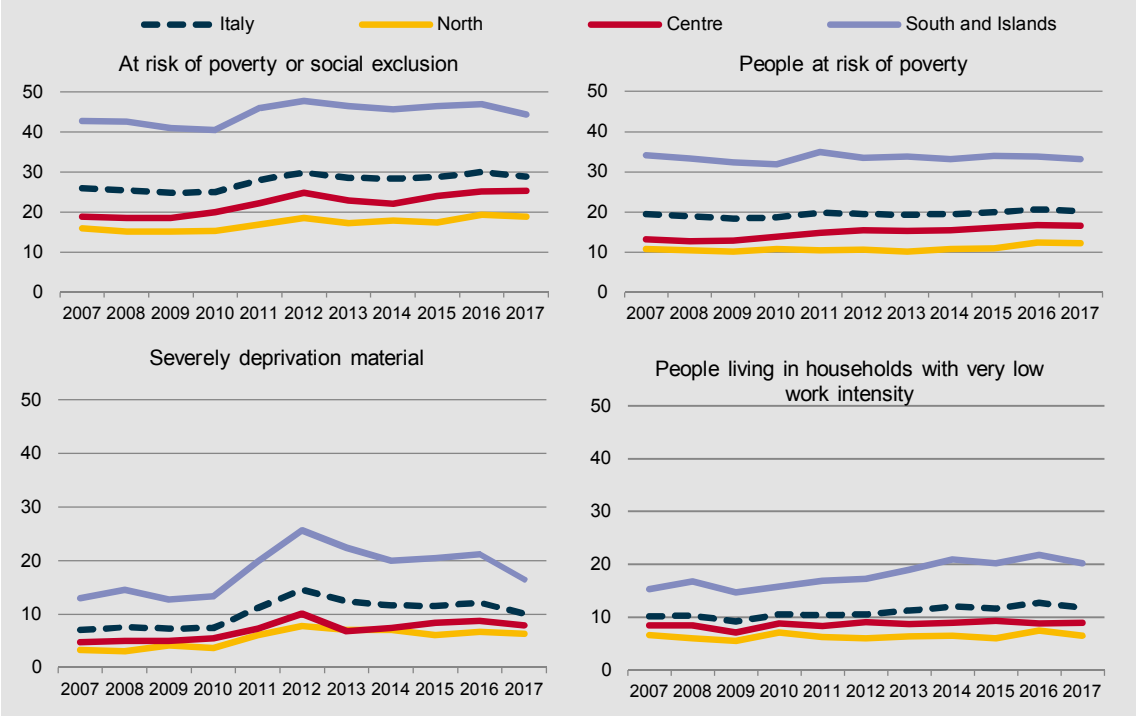
The decrease in 2017 for the composite indicator on poverty or social exclusion and for the three indicators in which it is divided has led to a narrowing of the North-South gap, even if the regional disparities are still very wide: the South and the Islands area had the highest values for all four indicators. Just under half of the individuals in the South and Islands were at risk of poverty or social exclusion (44.4%), while in the North a person out of five took this risk (18.8%).

The North-South divide for the indicator of severely material deprivation, which in 2016 had widened strongly, reaching 14.5 percentage points, in 2017 returned to a 10 point difference (in the North 6.3% of people were in severe deprivation, 16.5% in the South and Islands).

Even income poverty remained constantly higher for people living in the South and Islands (more than 20 percentage points of difference respect to the North), with shares that in 2017 were set at 33.1% and 12.2% respectively.

In 2017, also due to the low work intensity, the gap between the North and the South and Islands of the country has further increased: in the North, people living in households in this condition were 6.6%, compared to 20.2% in the South and Islands.

Figure 1.8 - SDG 1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. Years 2007-2017 (%)



Source: Istat, Eu-Silc

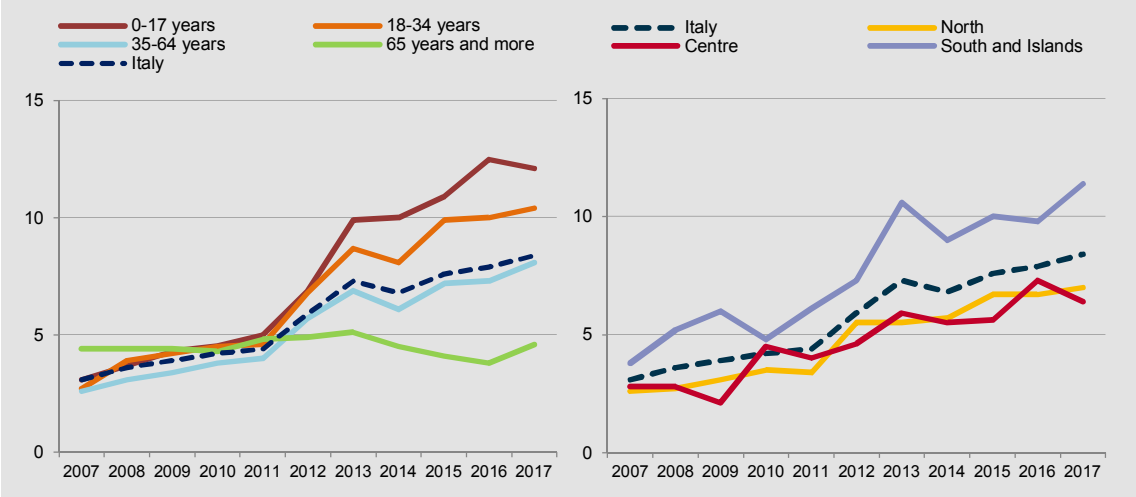
Other indicators

SDG 1.2.1 - Proportion of population living below the national poverty line, by sex and age

In 2017 it is estimated that in Italy 1 million 778 thousand households (6.9% of resident households) were in conditions of absolute poverty, for a total of 5 million and 58 thousand individuals (8.4% of the entire population). The incidence of absolute poverty is higher for individuals (from 7.9% in the previous year to 8.4%), reaching the highest value (11.4%) in the South and Islands area among the Italian geographical divisions.

Among people in absolute poverty it is estimated that women were 2 million 472 thousand (incidence equal to 8.0%), minors 1 million 208 thousand (12.1%), young people aged 18-34 1 million and 112 thousand (10.4%, highest value since 2005) and the elderly 611 thousand (4.6%). The conditions of minors remained critical: the incidence was 12.1%, the rise in the incidence among adults aged 35-64 (from 2.7% in 2005 to 8.1% of 2017) was critical as well.

Figure 1.9 - Percentage of population living in conditions of absolute poverty. Years 2005-2017 (%)



Source: Istat, Household Budget Survey

In brief

Between 2016 and 2017, poverty or social exclusion diminished in Italy and in Europe, where it affected 22.4% of the population (113 million individuals).

In Italy, the population at risk of poverty or social exclusion was 28.9% (about 17 million and 407 thousand individuals), a drop compared to the previous year (30%).

The indicator of poverty or social exclusion considers different dimensions and corresponds to the proportion of people who present at least one of the following situations: 1) they are at risk of poverty of income, 2) they are severely materially deprived, 3) they live in households with a very low work intensity.

In Italy, **income poverty affected 20.3% of the population**. This value is substantially stable compared to 20.6% in 2016. 10.1% of the population was in severely material deprivation, 2 points lower than in 2016. **The share of those who lived in households with a very low work intensity was 11.8%,** down compared to 2016, when it was 12.8%.

The regional disparities are very wide, both for the composite indicator on poverty or social exclusion, and for the three measures that compose it: the South and Islands recorded the highest values in all four indicators. Almost half of individuals in the South and Islands area were at risk of poverty or social exclusion (44.4%); in the North an individual every five (18.8%).

If we consider **the employed persons who live in conditions of income poverty**, Italy was fifth last among the nations of the European Union with **12.2%** of the workers at risk of poverty in 2017. Among the employed persons in Northern Italy, the percentage of those at risk of poverty grew from 4.5% in 2004 to 6.9% in 2017; in the South and Islands area, the share of "poor workers", already very high, rose from 19.2% to 22.8%; the poor employed persons resident in Central Italy nearly doubled (from 5.9% to 11.2%).

In 2017, individuals in absolute poverty were estimated to be 5 million and 58 thousand. The incidence of absolute poverty for individuals was 8.4%. The conditions of minors remain critical: among them, the absolute poor were in fact 12.1%.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
1.1.1					
	In-work at-risk-of-poverty rate				
1.2.1					
	Proportion of population living below the national (absolute) poverty line				
	Proportion of population living below the national (relative) poverty line				
1.2.2					
	At risk of poverty or social exclusion - AROPE				
	Severe material deprivation rate				
	Low work intensity				
	People at risk of poverty				
1.3.1					
	Population aged 16 and over reporting unmet needs for medical care due to being too expensive	a	b		
1.4.1					
	Households unsatisfied for the continuity of the water supply service			c	d
	Households very or fairly satisfied with the continuity of the service of electricity supply			c	d
	Inability to keep home adequately warm				
	Households per difficulties of links with public transport means			c	d
	Landfill of waste				
	Housing cost overburden rate				
	Households with fixed and/or mobile broadband connection				
	People aged 6 and more 'who use their mobile phone at least a few times a year				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2008-2017
(b) 2008-2012
(c) 2013-2018
(d) 2017-2018

GOAL 2

END HUNGER,
ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE[1]

Goal 2 aims to grant the entire mankind access to healthy and nutritious food. Although hunger and food insecurity are concentrated in the developing countries, the strategy commits every country, all over the world, to an effort for improving both the quantitative and qualitative aspects of nutrition (including the fight against overweight in the most developed countries) and for promoting a sustainable agriculture.

Several factors concur to the implementation of this strategy, which is essential to grant food security for a rapidly growing world population, and the environmental sustainability of food production. Thus, Goal 2 spans over a wide array of themes, from the correct functioning of the agricultural markets to the fair access to land and technology; from the policies for rural development to the conservation of plant and animal genetic diversity.

In the Italian context, the progress towards this Goal can be monitored primarily in the fields of tackling unhealthy eating habits, supporting rural development and promoting sustainable farming practices.

1 This section was edited by Luigi Costanzo. Contributions from: Emanuela Bologna, Gaetano Proto, Giovanni Seri and Francesco G. Truglia.

Targets

Goal 2 is broken down into eight Targets.

Two Targets refer to nutrition:

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.

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.

Three Targets refer to food production:

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.

The last three Targets refer to agricultural policies and regard the means of implementation:

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.

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.

Indicators released by Istat

Istat disseminates 13 statistical measures for Goal 2, related to five SDG indicators (which refer, on their turn, to four of the eight Targets, see Table 2.1). Of the 13 measures, only one corresponds exactly to the description provided by the SDG metadata, and four can be considered proxies of the SDG indicators or covering only partially the phenomena to be monitored. The other eight measures are provided as National context indicators.

Table 2.1 - SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 2.2.2 - Prevalence of malnutrition among children under 5 years of age, by type (wasting and overweight)		
Overweight or obesity among children (6-10 years) (Istat, 2016/17, %)	Proxy	32.9
Overweight or obesity among minors (6-17 years) (Istat, 2016/17, %)	National context	24.2
Overweight or obesity among adults (18 years and over) (Istat, 2018, %)	National context	44.8
SDG 2.3.1 - Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size		
Production per labour unit of farms below 15,000 euros of turnover per year (Istat-CREA, 2015, euro)	Proxy	18,492
Production of farms per labour unit (Istat-CREA, 2015, euro)	National context	53,228
SDG 2.3.2 - Average income of small-scale food producers, by sex and indigenous status		
Earnings before interest, taxes, depreciation and amortization (EBITDA) of farms below 15,000 euros of turnover per year (Istat-CREA, 2015, euro)	Proxy	2,134
Earnings before interest, taxes, depreciation and amortization (EBITDA) of farms (Istat-CREA, 2015, euro)	National context	14,692
SDG 2.4.1 - Proportion of agricultural area under productive and sustainable agriculture		
Percentage of utilized agricultural area under organic farming (Istat, 2016, %)	Proxy	12.3
Growth index of organic crops (Mipaaft-Sinab, 2017, base 2010=100)	National context	171.4
Ammonia emissions from agriculture (ISPRA, 2016, t)	National context	358,468
Fertilizers distributed in agriculture (Istat, 2017, kg/ha)	National context	525.6
Plant protection products distributed in agriculture (Istat, 2017, kg/ha)	National context	13.0
SDG 2.a.1 - The agriculture orientation index for government expenditures		
The agriculture orientation index for government expenditures (Istat, 2017, %)	Identical	0.22

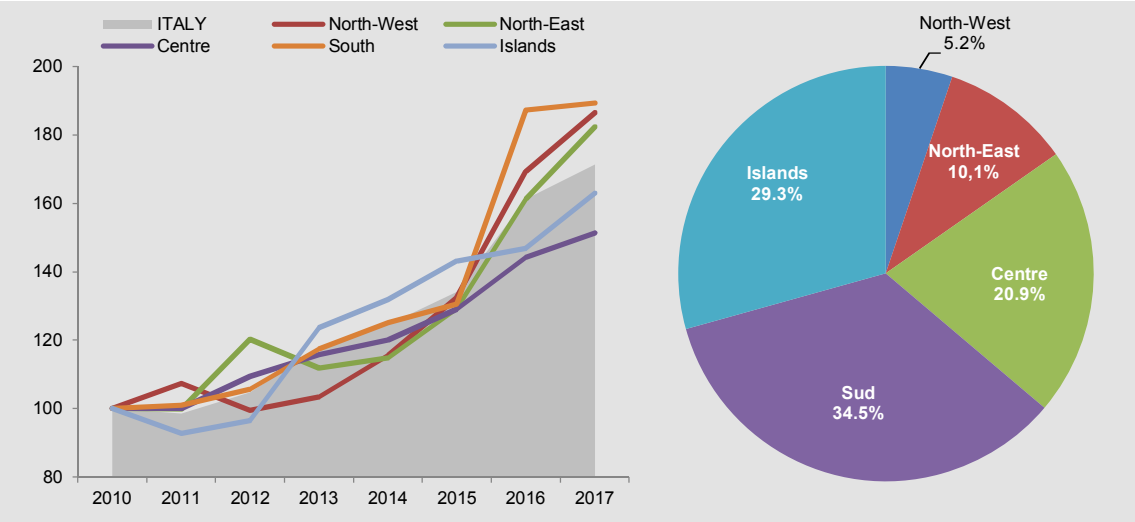
Focus

SDG 2.4.1 - Proportion of agricultural area under productive and sustainable agriculture

Target 2.4 urges an evolution of agriculture towards "sustainable food production systems" that "help protect ecosystems" and "progressively improve soil quality". Therefore, the growing diffusion of organic farming (a cultivation method that exploits the natural fertility of the soil, allowing only limited interventions to improve it, promotes the diversity of domestic plant and animal species and bans the use of chemical products and GMOs) is an absolutely relevant phenomenon for the monitoring of these objectives – even if it does not cover all the aspects considered by this Target, and in particular those of economic sustainability (productivity) and adaptation to climate change.

The proxy proposed for Indicator 2.4.1 is the share of agricultural area under organic farming, which is rising sharply, and was 12.3% in 2016[2]. This measure cannot be updated every year, but its trend can be described by a context indicator based on administrative data. According to data released by the National Information System on Organic Farming (Sinab), the organic crops registered (certified or undergoing conversion, according to the EU and national standards)[3], spanned 1.9 million hectares in 2017, of which almost two-thirds located in Southern Italy[4]. Their increase was 6.3% over the previous year (+13.2% in the North-East) and 71.4% over 2010 (+ 89.2% in the South). Growth was strong all over the Country, with an acceleration in the last two years (Fig. 2.1).

Figure 2.1 - Italy: Surface of organic crops by geographical areas. Years 2010-2017 (fixed base index, 2010=100; percentage values, 2017)



Source: Mipaaft, Sistema d'informazione nazionale sull'agricoltura biologica (Sinab)

To enhance the information framework on the sustainability of agriculture, some pressure indicators can also be considered, both on the input side, such as the use of fertilizers and pesticides per hectare, and on the output side, such as the ammonia emissions generated by the agricultural sector. Moreover, these indicators provide information about

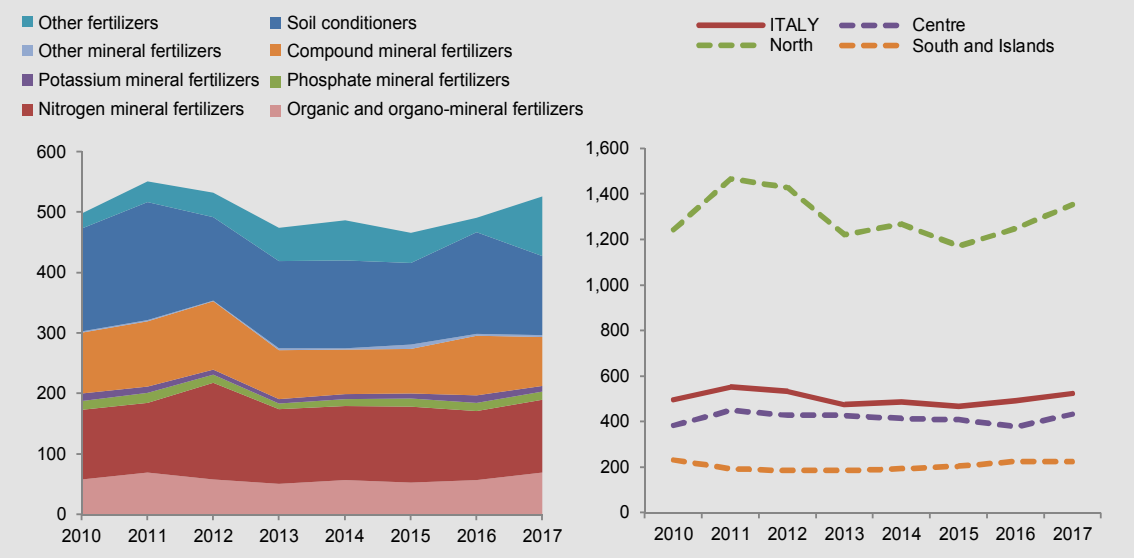
2 Source: Istat, *Struttura e produzione delle aziende agricole* (SPA).
3 The share of crops under conversion is equal to 28.1% (26.2% in 2010).
4 Source: Mipaaft, *Sistema d'informazione nazionale sull'agricoltura biologica* (Sinab), www.sinab.it.

the sustainability of the whole system of agricultural production, of which organic farming is only a small part.

The abuse of chemical products for soil fertilization and plant protection has harmful effects on ecosystem biodiversity and may have a severe impact on human health. Of course, different products and techniques generate different impacts, and the variability over time of the quantities used can be influenced by weather conditions or other contingencies. Nevertheless, being the massive use of fertilizers and plant protection products so common in modern production systems, it can be assumed that an overall decrease in the quantities distributed indicate a progress towards production practices that have a lesser impact on the environment and on consumers' health.

In 2017, 4.7 million tons of fertilizers were distributed, equal to about 526 kg per hectare: especially soil conditioners (24.9%) and mineral nitrogen fertilizers (22.9%)[5]. The quantity distributed per hectare was 7.1% higher than the previous year and 5.6% higher than 2010. Nevertheless, more than a clear rising trend, fluctuations around an average value of about 500 kg per hectare were registered, within a range of ±10% (Fig. 2.2). Regional differences are clearly evident, and overtly reflect the diversity of cropping systems and environmental conditions that characterize Italian agriculture: fertilizers are much less used (and their usage is more stable) in Central and Southern Italy (432 and 223 kg/ha, respectively), while in the North it reaches 1,355 kg per hectare and is subject to a wider variability over time.

Figure 2.2 - Fertilizers distribuited by type of product and by geographical area. Years 2010-2017 (kg per hectare)

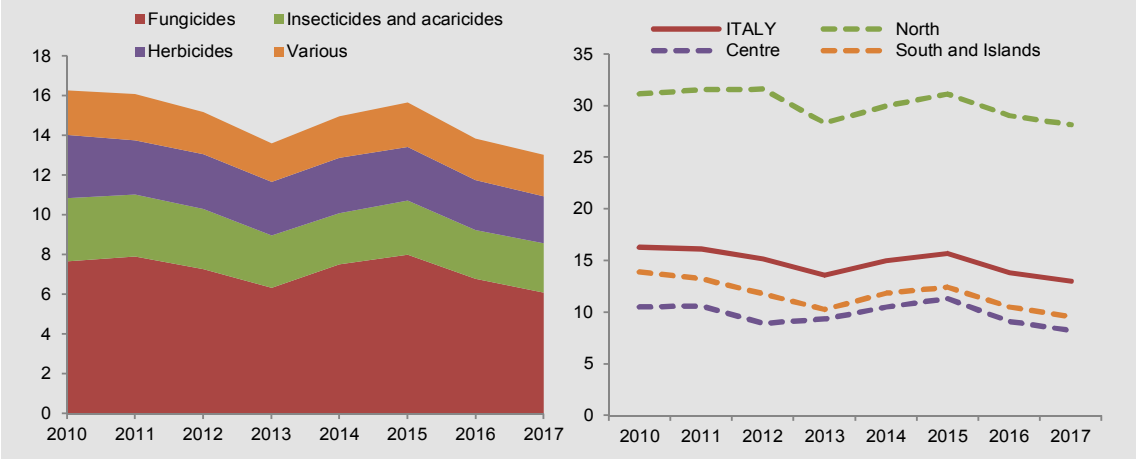


Source: Istat, Distribuzione dei fertilizzanti per uso agricolo

The distribution of plant protection products has shown in recent years a net tendency to reduction. In 2017, 117 thousand tons (mainly fungicides) were distributed throughout Italy, equal to 13 kg per hectare: 5.9% less than in the previous year and 20% less than in 2010[6]. Also in this case, the regional differences are wide: 9.6 kg per hectare in the South, 8.2 in the Centre and 28.2 in the North (Figure 2.3).

5 Source: Istat, *Distribuzione dei fertilizzanti per uso agricolo.*
6 Source: Istat, *Distribuzione dei prodotti fitosanitari per uso agricolo.*

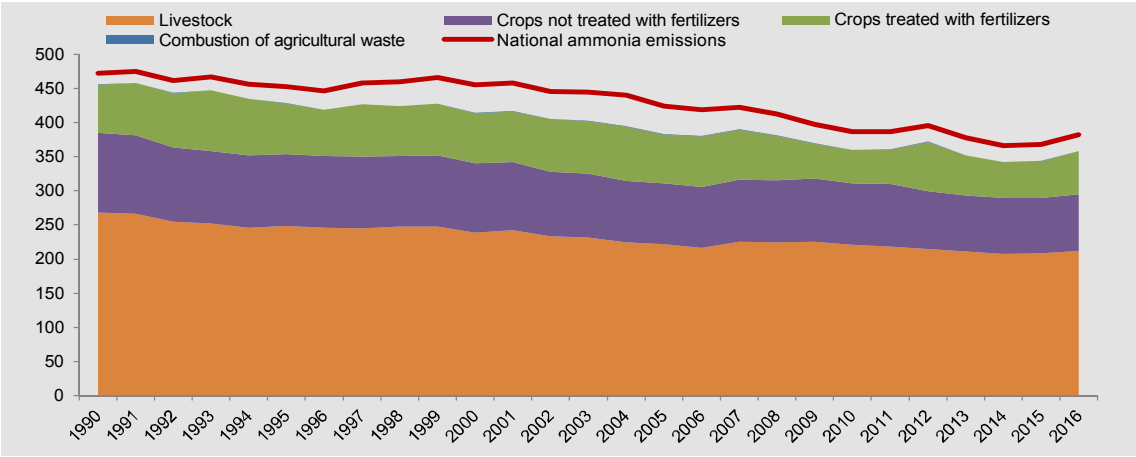
Figure 2.3 - Plant protection products distributed by type of product and by geographical area. Years 2010-2017 (kg per hectare)



Source: Istat, Distribuzione dei prodotti fitosanitari

Ammonia (NH_3) is a volatile compound of Nitrogen resulting from the decomposition of proteins, whose emissions into the atmosphere come for over 90% from the agricultural sector, mostly from the manure produced by livestock farms. Ammonia emissions have a number of negative effects on environment and human health: by the removal of Nitrogen, they reduce the soil productivity (which needs to be artificially restored by the use of fertilizers); they also contribute to air pollution by producing particulate matter, and to global warming as well by the generation of Nitrous Oxide, a greenhouse gas. In Italy, in 2016, the agricultural sector was responsible for the emission of 358 thousand tons of NH3, about 60% of which generated by livestock[7] (Figure 2.4). Ammonia emissions are in line with the Targets set by the Gothenburg Protocol of 1999, and by the EU Directives on national emission ceilings (NEC). However, after the minimum of 343 thousand tons reached in 2014, emissions started to grow again, until going back, in 2016, to the level of 2010. If this trend were to consolidate, it could jeopardize compliance with the objectives set by the 2012 update of the Gothenburg Protocol, which require a 5% reduction per year, starting from 2020.

Figure 2.4 - Italy: Ammonia emissions in atmosphere from the agricultural sector and from the entire economy. Years 1990-2016 (thousand tons)



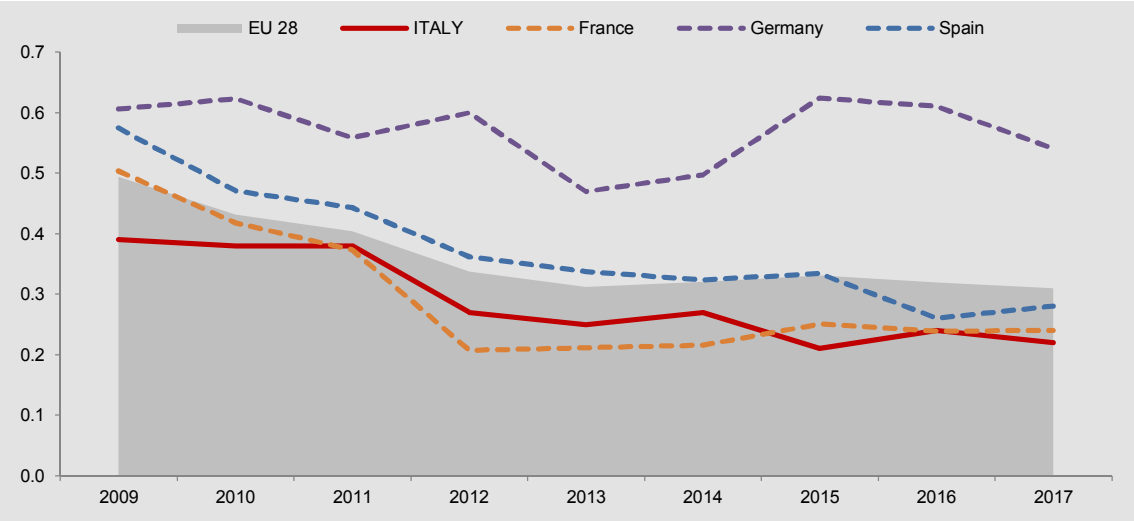
Source: ISPRA, Inventario nazionale delle emissioni in atmosfera

7 Source: ISPRA, *Inventario delle emissioni in atmosfera*.

SDG 2.a.1 - The agriculture orientation index for government expenditures

The support of public spending on agriculture is considered a key factor for achieving global food security. In Italy, the primary sector increasingly contributes to the wealth produced in terms of value added (2.1% in 2017). Compared to 2010, the value added of agriculture grew by 16.1%, much more than the entire economy (+7.2%). The share of public expenditure allocated to the primary sector, on the other hand, dropped down: from 0.8% in 2010 to 0.5% in 2017. And so did, as a result, the agriculture orientation index for government expenditures, which was 0.22 points in 2017, against 0.24 in the previous year and 0.38 in 2010. Similar trends could be observed in the EU as a whole, as well as in France and Spain, while in Germany the index remained more stable on a significantly higher level8 (Figure 2.5). Of course, these trends do not represent a threat for food security in Europe, nevertheless they indicate a reduction in public commitment to support agriculture, which goes in the opposite direction to that advocated by the 2030 Agenda.

Figure 2.5 - Agriculture orientation index for government expenditures in Italy and some EU Countries*. Years 2009-2017



Source: Eurostat, National accounts aggregates by industry, General government expenditure by function
(*) Ratio of the share of public expenditure allocated to the primary sector to the share of value added produced by the primary sector.

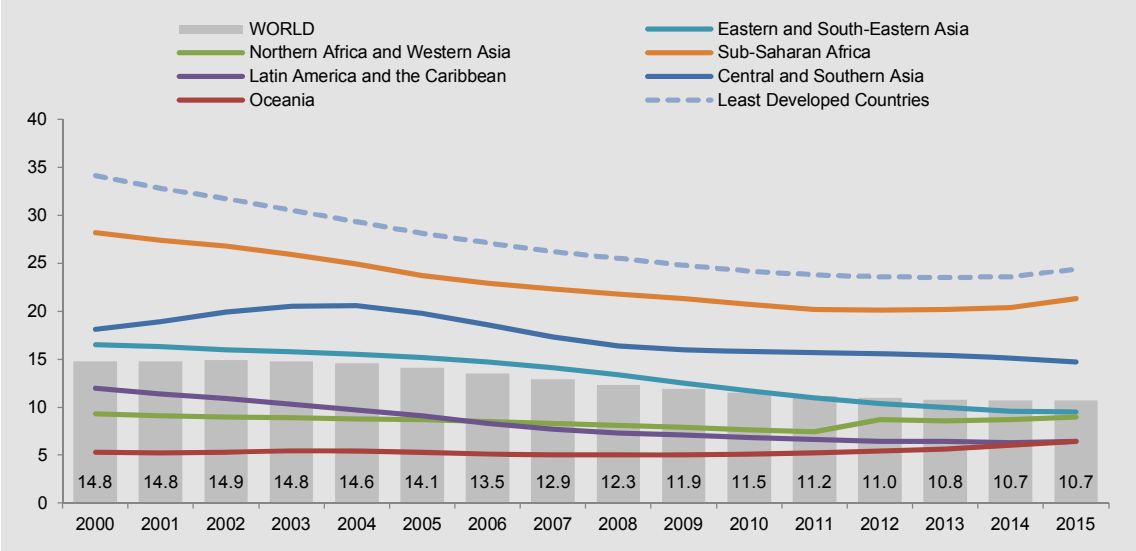
8 Source: Eurostat, *National accounts aggregates by industry, General government expenditure by function.*

Other indicators

SDG 2.1.1 - Prevalence of undernourishment

According to the most recent estimates released by the UN, in 2015 10.7% of the world population was still suffering from undernourishment[9]. The proportion rises up to 24.4% in the Least Developed Countries (LDCs), and is especially high in Sub-Saharan Africa (21.3%) and in Central and Southern Asia (14.7%). In Sub-Saharan Africa, in particular, the share of undernourished people has resumed to grow since 2013, reversing a long positive trend. In recent years the situation has worsened also in Northern Africa and Western Asia (from 7.4 to 9%, from 2011 to 2015) and in Oceania too (from 5 to 6.4%, from 2009 to 2015). Compared to 2000, the prevalence of undernourishment has decreased by around 4 percentage points worldwide and by almost 10 points in the LDCs, but after 2010 progress has slowed down more and more, and stopped in 2015. The latest updates outline a worsening of the prospects, placing the Goal of eradicating the phenomenon by 2030 out of reach of the current policies (Fig. 2.6).

Figure 2.6 - Prevalence of undernourisment in the World. Years 2000-2015 (percentage values)



Source: FAO Statistics division

SDG 2.2.1 - Prevalence of stunting

At the global level, according to the joint estimates on child malnutrition by UNICEF, WHO and World Bank (2018), the prevalence of stunting[10] among children under 5 years of age is constantly decreasing in recent years: it was 32.6% in 2000, 26.1% in 2010 and 22.2% in 2017[11]. Even in this case, however, progress seems insufficient to ensure the

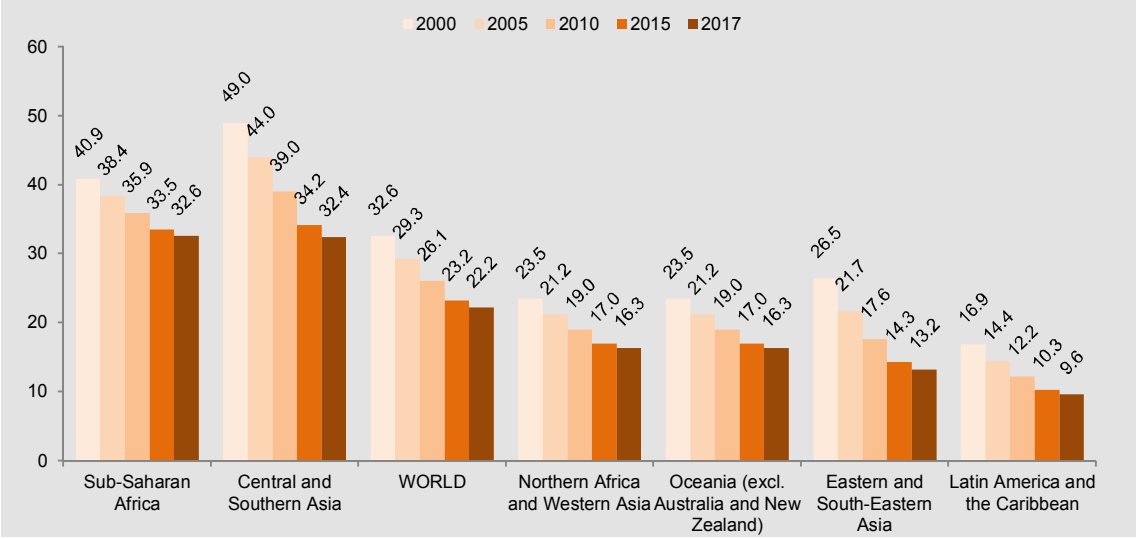
9 Source: FAO Statistics Division (https://unstats.un.org/sdgs/indicators/database/).

10 Height for age <-2 standard deviation from the median of the WHO Child Growth Standards (http://www.who.int/childgrowth/en/).

11 Source: UNICEF-WHO-World Bank *Joint Child Malnutrition Estimates*, 2018 ed. (https://unstats.un.org/sdgs/indicators/database/).

achievement of the internationally agreed Goal (40% reduction by 2025)[12]. The problem is significantly concentrated in Central and Southern Asia and in Sub-Saharan Africa, where in 2017 stunting still affected one child out of three (Fig. 2.7).

Figure 2.7 - Prevalence of stunting* among children under 5 years of age in the World. Years 2000, 2005, 2010, 2015 and 2017 (percentage values)



Source: UNICEF, WHO and the World Bank Group, *Joint Child Malnutrition Estimates* (2018 Edition)
(*) Height for age <-2 standard deviation from the median of the WHO Child Growth Standards.

SDG 2.2.2 - Prevalence of malnutrition among children under 5 years of age, by type (wasting and overweight)

In the whole World, the two forms of malnutrition – wasting[13] and overweight[14] – affected respectively 7.5% and 5.6% of children under 5 years of age (2017)[15]. Wasting is highly concentrated in Central and Southern Asia, where it is estimated that it affected 14.8% of children (in moderate or severe form); while overweight is especially common in Northern Africa and Western Asia (9.2% of moderately or severely overweight children) as well as in Oceania (8.7%)[16]. In Europe and Northern America, not covered by the 2017 update of the UNICEF-WHO-World Bank estimates, the proportion of overweight children was estimated equal to 8.3% in 2016. At the global level, the prevalence of overweight among children has been increasing continuously from 2000 until 2015, but no further increase was observed in 2017 (Figure 2.8).

12 http://www.who.int/nutrition/global-target-2025/en/. "If current trends continue, projections indicate that 127 million children under 5 years will be stunted in 2025. Therefore, further investment and action are necessary to attain the 2025 World Health Assembly Target of reducing that number to 100 million" (WHO, *Global Nutrition Targets 2025. Stunting Policy Brief*, 2014). According to the UNICEF-WHO-World Bank estimates, in 2017 the number of children suffering from stunting all over the World was between 139 and 162.6 million.

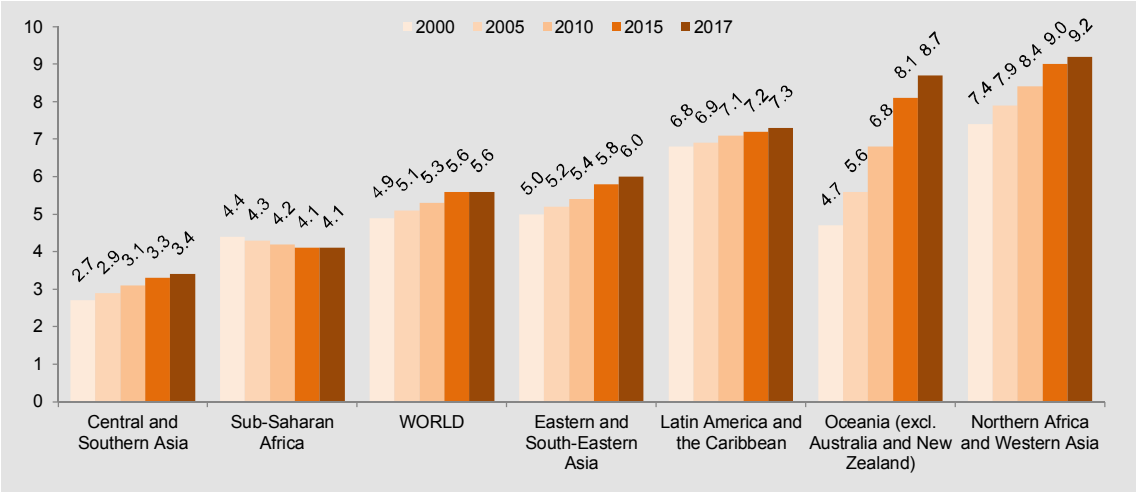
13 Weight for height <-2 standard deviation from the median of the WHO Child Growth Standards (http://www.who.int/childgrowth/en/).

14 Weight for height >2 standard deviation from the median of the WHO Child Growth Standards (http://www.who.int/childgrowth/en/).

15 Source: UNICEF-WHO-World Bank Joint Child Malnutrition Estimates (2018 ed.) (https://unstats.un.org/sdgs/indicators/database/).

16 Excluding Australia and New Zealand.

Figure 2.8 - Prevalence of overweight* among children under 5 years of age in the World. Years 2000, 2005, 2010, 2015 and 2017 (percentage values)



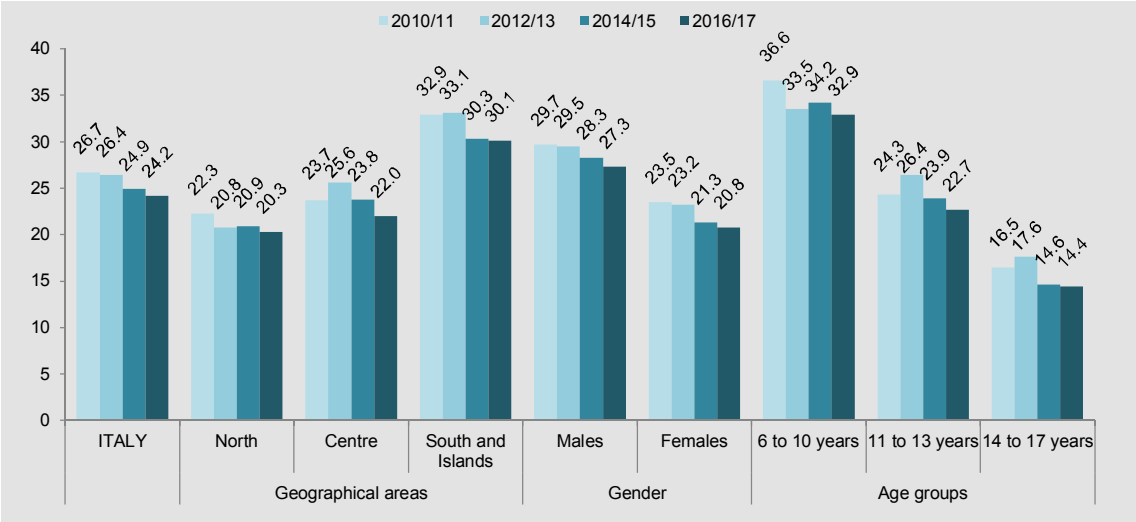
Source: UNICEF, WHO and the World Bank Group, Joint Child Malnutrition Estimates (2018 Edition)
(*) Weight for height >2 standard deviation from the median of the WHO Child Growth Standards.

In Italy, the estimates available for children and adolescents refer to the age groups 6-17 years (by gender and region) and 6-10 years (only by gender). According to these estimates, in the two-year period 2016/17, almost one child out of three, aged 6 to 10, was overweight (32.9%) – a condition that entails a significant risk factor for developing obesity in adulthood and for the early onset of several chronic diseases. Such a high prevalence, however, has been slowly but regularly decreasing in recent years (it was 36.6% in 2010/11 and 34.2% in 2015/16)[17]. Similar dynamics are observed for the whole of children and adolescents (age 6-17), which shows – however – significantly lower values (24.2% in 2016/17, compared to 24.7% in the previous two-year period, and to 26.7% in 2011/12). In this wider age group, overweight was remarkably more common among the males (27.3%, against 20.8% of females) and tended to decrease with age (down to 14.4% in the 14-17 age group). Above all, the prevalence follows a clear geographical pattern, synthesized in a gap of nearly 10 points between the Northern regions and the Southern ones (20.3 against 30.1%), which remains substantially unchanged over the recent years (Fig. 2.9).

In the Italian adult population, overweight people were 44.8% of the total (2018). Again, the prevalence was higher in the South (49.6%, with a maximum of 51.7% in Campania), among the males (54.3%), and among the elderly (with a maximum of 61.1% in the 65-74 age group). From 2000 to 2016, the global trend of overweight can be described as a linear growth: from 29.7% to 39.1% for the whole of the countries monitored by the WHO, and from 53.5 to 62.3% in Europe (Figure 2.10).

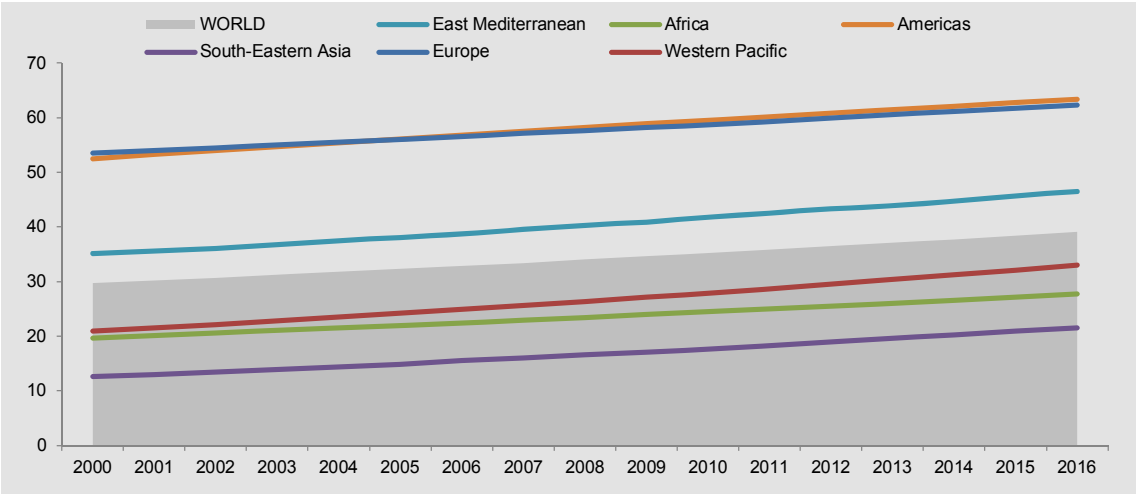
17 Source: Istat, *Aspetti della vita quotidiana*. The definition of overweight in children and adolescents (6-17 years) refers to the thresholds by gender and age (in months) adopted by the International Obesity Task Force (https://www.worldobesity.org/data/cut-points-used/newchildcutoffs/), and not to the WHO Child Growth Standards (see above).

Figure 2.9 - Prevalence of overweight in Italian population aged 6 to 17 years by geographical area, by gender and by age group. Years 2010/11, 2012/13, 2014/15 and 2016/17 (percentage values)



Source: Istat, Aspetti della vita quotidiana

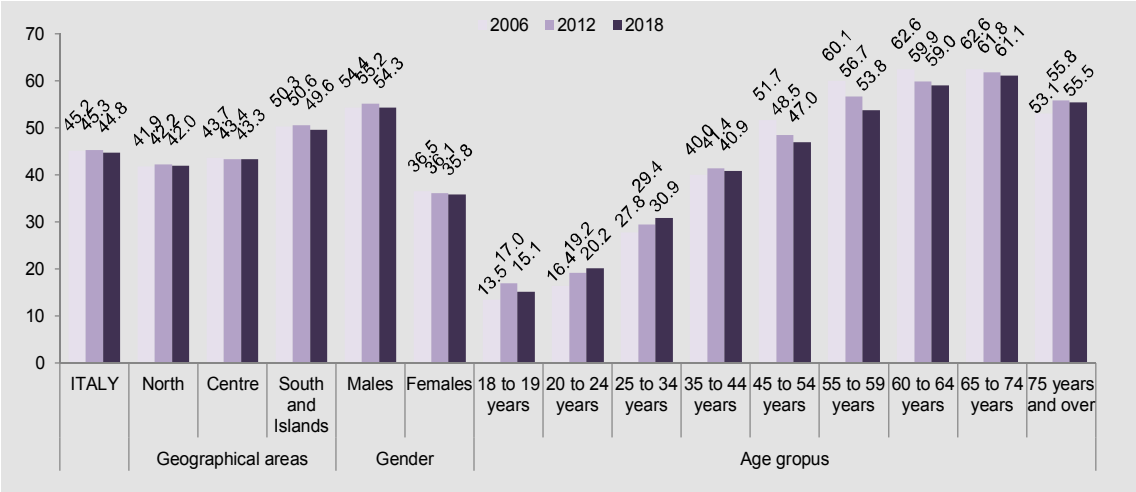
Figure 2.10 - Prevalence of overweight in the World population aged 18 years and over by WHO region*. Years 2000-2016 (percentage values)



Source: WHO, Global Health Observatory
(*) For WHO regions, see https://www.who.int/healthinfo/global_burden_disease/definition_regions/en/.

In Italy, however, the proportion of overweight adults has remained substantially stable over the last decade (it was 45% in 2005). The main differences between 2006 and 2018 are observed in the age profile of the concerned population, and clearly outline a deterioration trend. The prevalence increases, in fact, among the younger (from 13.5 to 15.1% in the age group 18-19, from 16.4 to 20.2% in the age group 20-24, from 27.8 to 30.9% in the age group 25-34), counterbalancing the improvements in the central age groups (especially 45-64), while the gap between the Centre-North and the South does not seem to be reducing (Fig. 2.11).

Figure 2.11 - Prevalence of overweight in Italian population aged 18 years and over by geographical area, by gender and by age group. Years 2006, 2012 and 2018 (percentage values)



Source: Istat, Aspetti della vita quotidiana

In brief

Nearly 2 million hectares of agricultural land were under organic farming in 2017, of which about two-thirds located in Southern Italy. Their growth rate was 6.3% over the previous year and more than 70% over 2010.

In agriculture, the use of plant protection products tends to decrease (13 kg/ha, -20% over 2010), **while the use of fertilizers remains stable** (around 500 kg/ha). Both kind of products are mainly used in the Northern regions (1,355 kg/ha of fertilizers and 28 kg/ha of plant protection products).

Ammonia emissions are on the raise, and in 2016 were back to the level of 2010 (358 thousand tons, 60% of which generated by livestock). Compliance with the Gothenburg Protocol of 2012 is at risk.

The agriculture orientation index for government expenditures keeps lowering (from 0.38 to 0.22 points between 2010 and 2017), in the opposite direction to that advocated by the 2030 Agenda.

In Italy, about one child out of three is overweight, but the trend is improving: between 2010/11 and 2016/17, the prevalence among the children aged 6 to 10 years dropped from 36.6 to 32.9%. Considering also adolescents (6-17 years) the prevalence is lower (24.2%, but over 30% in Southern Italy).

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
2.2.2					
	Overweight or obesity among children (6-10 years)				
	Overweight or obesity among minors (6-17 years)				
	Overweight or obesity among adults (18 years and over)				
2.3.1					
	Production per labour unit of farms below 15,000 euros of turnover per year			a	
2.3.2					
	Earnings before interest, taxes, depreciation and amortization (EBITDA) of farms below 15,000 euros of turnover per year			a	
2.4.1					
	Percentage of utilized agricultural area under organic farming		b	c	
	Growth index of organic crops	d	e		
	Ammonia emissions from agriculture	f		g	h
	Fertilizers distributed in agriculture	i	b		
	Plant protection products distributed in agriculture	i	b		
2.a.1					
	The agriculture orientation index for government expenditures				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2010-2015
(b) 2010-2013
(c) 2013-2016
(d) 2009-2017
(e) 2009-2014
(f) 2006-2016
(g) 2011-2016
(h) 2015-2016
(i) 2010-2017

GOAL 3

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Goal 3 has the aim of ensuring health and promoting well-being for all and at all ages. This Goal focuses attention on several areas of intervention: reducing maternal/infant mortality, overcoming epidemics of viral diseases in the world, neutralising both contagious and chronic diseases, and promoting well-being and mental health. Enormous progress has been made over time, as witnessed by the constant increase in life expectancy and the improvements in reproductive, maternal and infant health. The spread of better hygienic conditions throughout the world, and in general the attention to environmental factors, was the necessary prerequisite for these advancements, especially in the reduction of contagious diseases. Some of the Targets in this Goal refer to the risks and sanitary conditions of populations in the early stages of sanitary transition, where mortality is still very high. The most relevant areas to the Italian context are those connected to the new epidemiological and environmental context and to population aging. This refers in particular to the spread of chronic diseases, to access to prevention and to opposing improper lifestyles (consumption of alcohol and tobacco), as well as mortality due to road accidents.

Reaching the Goals set in the 2030 Agenda requires appropriate health policies, making citizens also responsible for protecting their own health, as well as other interventions, through the reduction of social and regional inequalities.

1 This section was edited by Alessandra Tinto, with contributions from: Roberta Crialesi, Silvia Bruzzone, Marzia Loghi, Stefano Marchetti and Silvia Simeoni.

Targets

Goal 3 is broken down into thirteen Targets, the last four refer to tools for implementation:

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.

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.

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.

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.

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[2] 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.

2 Trade-Related Aspects of Intellectual Property Rights.

Indicators released by Istat

Istat releases twenty-eight statistical measures for Goal 3, referring to eleven of the thirteen Targets for which it is possible and/or meaningful to monitor progress at least at the national level.

Table 3.1 - List of SDGs indicators and indicators released by Istat

Disseminated indicator	In relation to the Sdg indicator	Value last period available
SDG 3.2.1 - Under-five mortality rate		
Under-five mortality rate (Istat, 2017, per 1,000)	Identical	3.45
SDG 3.2.2 - Neonatal mortality rate		
Neonatal mortality rate (Istat, 2016, per 1,000)	Identical	2
SDG 3.3.1 - Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations		
Number of new HIV infections per 100,000 (Istituto Superiore di Sanità, 2017, per 100,000)	Identical	5.7
SDG 3.3.2 - Tuberculosis incidence per 100,000 population		
Tuberculosis incidence per 100,000 population (Ministry of Health, 2016, per 100,000)	Identical	6.6
SDG 3.3.4 - Hepatitis B incidence per 100,000 population		
Hepatitis B incidence per 100,000 population (a) (European Centre for Disease Prevention and Control (ECDC); Ministry of Health (year 2016), 2016, per 100,000)	Identical	0.5
SDG 3.4.1 - Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease		
Age standardised mortality rate between 30-69 years of age from major causes of death (Istat, 2016, per 100,000)	Proxy	223.3
Healthy life expectancy at birth (a) (b) (Istat, 2017, mean number of years)	National *context*	58.7
SDG 3.4.2 - Suicide mortality rate		
Age standardised suicide mortality rate (Istat, 2016, per 100,000)	Identical	5.8
SDG 3.5.2 - Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol		
Liters of pure alcol per capita (WHO, 2014, Liters per capita)	Identical	7.56
Alcohol consumption (Istat, 2017, %)	National *context*	16.7
SDG 3.6.1 - Death rate due to road traffic injuries		
Age standardised death rate due to road traffic injuries (Istat, 2017, per 100,000)	Identical	5.4
Number of road traffic fatal injuries (Istat, 2017, absolute values)	National context	3,378
Road accidents serious harmfulness rate (Ministry of Health, 2017, per 100,000)	National *context*	28.6
SDG 3.7.1 - Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods		
Demand for family planning satisfied with modern methods (Istat, 2013, %)	Proxy	67.2
SDG 3.7.2 - Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group		
Age-specific fertility rates for 1000 women aged 10-14 (Istat, 2017, per 1,000)	Identical	0.022
Age-specific fertility rates for 1000 women aged 15-19 (Istat, 2017, per 1,000)	Identical	21.7
SDG 3.8.1 - Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)		
Persons on antiretroviral therapy (ART) (Istituto Superiore di Sanità, 2014, %)	Proxy	91.9
Proportion of deliveries with more than 4 check up visits during pregnancy (a) (Ministry of Health - Cedap, 2015, %)	Proxy	87.3
SDG 3.9.3 - Mortality rate attributed to unintentional poisoning		
Unintentional poisoning standardized mortality rate (Istat, 2016, per 100,000)	Identical	0.4
SDG 3.a.1 - Age-standardized prevalence of current tobacco use among persons aged 15 years and older		
Standardized proportion of people aged 15 and over who report current smoking (Istat, 2017, %)	Identical	20.2
SDG 3.b.1 - Proportion of the Target population covered by all vaccines included in their national programme		
Influenza vaccination coverage age 65+ (Ministry of Health, 2017/2018, per 100 inhabitants)	Identical	52.7
Pediatric vaccination coverage: polio (a) (Ministry of Health, 2017, per 100 inhabitants)	Identical	94.6
Pediatric vaccination coverage: measles (a) (Ministry of Health, 2017, per 100 inhabitants)	Identical	91.8
Pediatric vaccination coverage: rubella (a) (Ministry of Health, 2017, per 100 inhabitants)	Identical	91.8
SDG 3.b.2 - Total net official development assistance to medical research and basic health sectors		
Total net official development assistance to medical research and basic health sectors (Ministero degli Affari Esteri e della Cooperazione Internazionale, 2016, Milions of euro)	Identical	18.8
SDG 3.c.1 - Health worker density and distribution		
Physicians (a) (IQVIA ITALIA, 2018, per 1,000)	Identical	4
Nurses and midwives (a) (Co.Ge.A.P.S. (Consorzio Gestione Anagrafica Professioni Sanitarie), 2018, per 1,000)	Identical	5.8
Dentists *(a) (Co.Ge.A.P.S. (Consorzio Gestione Anagrafica Professioni Sanitarie), 2018, per 1,000)*	Identical	0.8

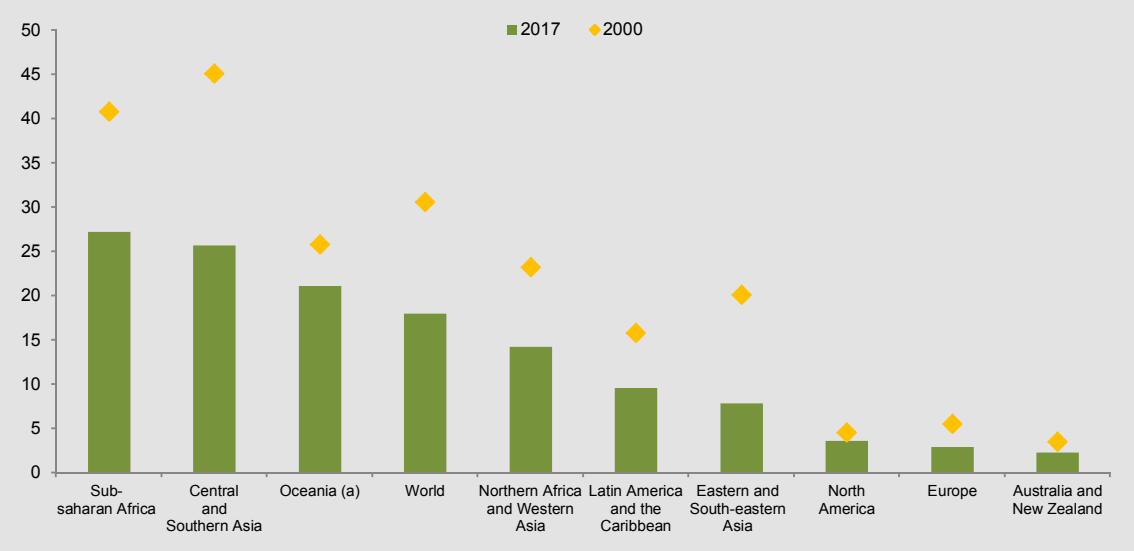
Focus

SDG 3.2.1 - Under 5 mortality rate; SDG 3.2.2 - Infant mortality rate

Globally, under 5 mortality rate fell in 2017 to 39.1 deaths per 1,000 live births (they were 77.1 in 2000), with a 49% drop and a total number of under-5 deaths amounting to 5.4 million. In the same period, the neonatal mortality rate (under 28 days of age) decreased as well, passing from 30.6 deaths per 1,000 live births in 2000 to 18 in 2017, with a 41%decrease.

In 2017, the areas of sub-Saharan Africa and South Asia were those with the highest neonatal mortality rate (about 27 deaths, with a peak of over 44 deaths per 1,000 live births in Pakistan) (Figure 3.1). More than half of deaths under 28 days of life concentrated in five countries (India, Nigeria, Pakistan, the Democratic Republic of Congo and Ethiopia).

Figure 3.1 - Neonatal mortality rate by geographic area. Years 2000 and 2017 (per 1,000 live births)



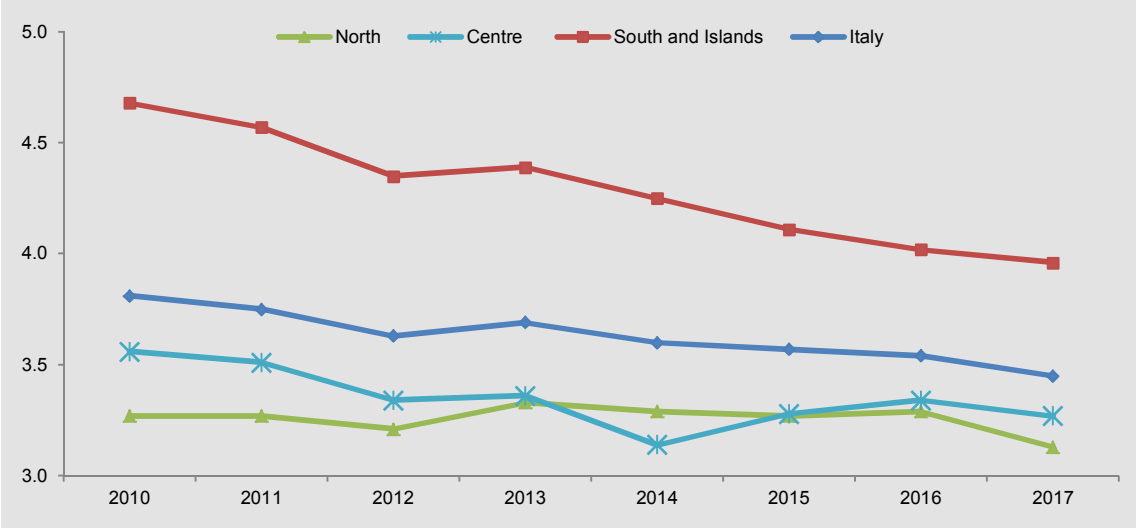
Source: UN global database
(a) excluding Australia and New Zealand

In Europe, deaths under 1 month of life were less than 2% of total deaths in this segment of the world population. In 2016 in Italy, in particular, the neonatal mortality rate was among the lowest (2 deaths within 28 days of life per 1,000 live births).

Even the probability of death under 5 in Italy reached levels among the lowest in Europe, with 3.4 deaths within 5 years per thousand live births in 2017 (compared to the EU average of 5.3 deaths).

The disadvantage of the Southern regions compared to other areas of the country is still significant, although decreasing. In fact in the South of Italy, (year 2017) there were about 4 deaths under the age of 5 for 1.000 live births, compared to 3.1 in the North; with a distance that goes from 1.4 to 0.8 more deaths in the South between 2010 and 2017 (Figure 3.2). Among the regions of the South and Islands area, the highest rate was recorded in Sicilia (4.7 deaths per 1000 live births) and the lowest in Sardegna, with similar values to those of the Centre (3.3 deaths per 1000 live births). Also for neonatal mortality, the gap between

Figure 3.2 - Under 5 mortality rate by geographic area. Years 2010-2017 (per 1,000 live births)



Source: Istat, Mortality tables (Deaths of resident population)

the South and the North was decreasing: it was 1 more death in the South in 2010 and fell to 0.6 more deaths in 2016.

SDG 3.3.1 - Incidence of HIV infections per 100,000 residents (by region of residence)

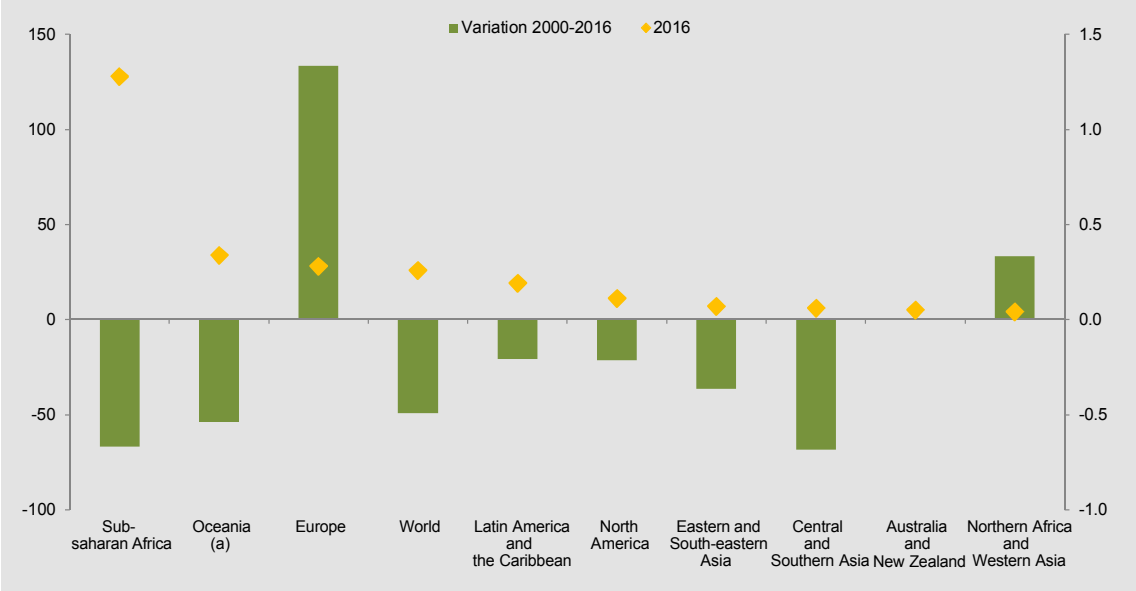
Globally, the incidence of HIV has halved compared to 2000, falling to 0.26 new cases per 1000 uninfected people in 2016 (new cases were 0.51 in 2000).

Despite the 67% reduction compared to 2000, sub-Saharan Africa remained the area most heavily hit by HIV, with an incidence of 1.28 new cases per 1,000 uninfected people in 2016 (Figure 3.3), which rose to 2.58 new cases among women in reproductive age in the same area.

The widespread use of antiretroviral therapy (ART) has been the main factor in the decrease of HIV deaths, which fell by 48% compared to the peak of 1.9 million deaths in 2005. However, at the end of 2016, ART had reached only 53% of people living with HIV, and, to achieve the Goal of ending the HIV epidemic by 2030, it is still necessary, along with prevention, diagnosis and treatment interventions, to increase coverage of treatment.

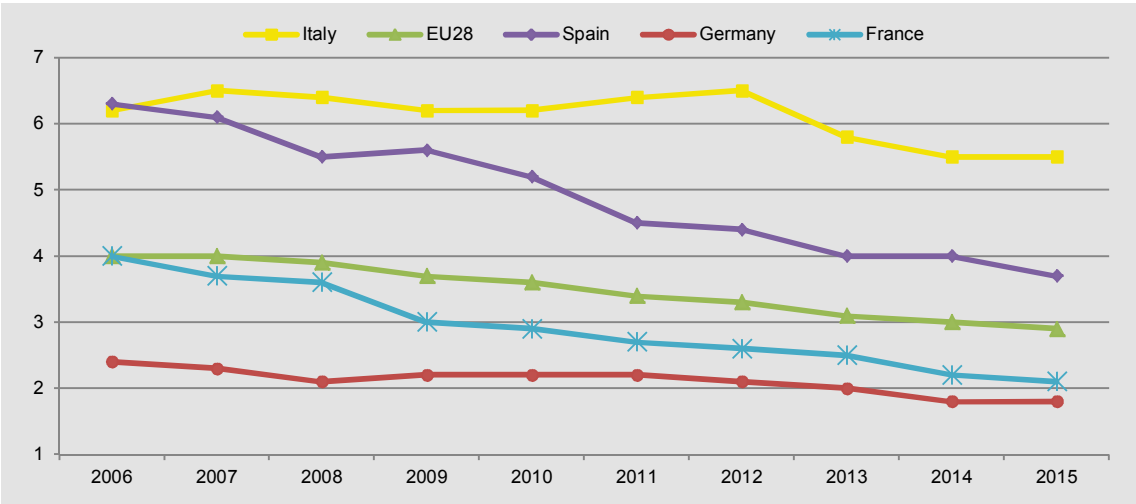
For the monitoring of SDGs at European level, Eurostat considers a single indicator for communicable diseases: the standardized mortality rate for tuberculosis, HIV and hepatitis. This indicator also shows a steady decline: in particular, deaths from these diseases fell from 4.8 to 2.9 per 100,000 people between 2002 and 2015 (Figure 3.4). Italy was above the European average, with 5.5 deaths for these causes per 100,000 people. Higher rates were found in Portugal, Romania, Lithuania and Latvia. Netherlands, Slovenia, Denmark and Slovakia had the lowest rates, with less than 1 death per 100,000 inhabitants. In Italy, also the percentage variation showed a more contained decrease in Italy compared to 2006, with an 11% decrease compared to the European average decrease of 27.5%.

Figure 3.3 - Incidence of HIV infections by geographic area. Year 2016 (right) and percentage variation 2000-2016 (left) (per 100,000 residents)



Source: UN global database
(a) Excluding Australia and New Zealand.

Figure 3.4 - Standardised mortality rate due to tuberculosis, HIV and hepatitis in selected European countries. Years 2006-2015 (per 100,000 residents)

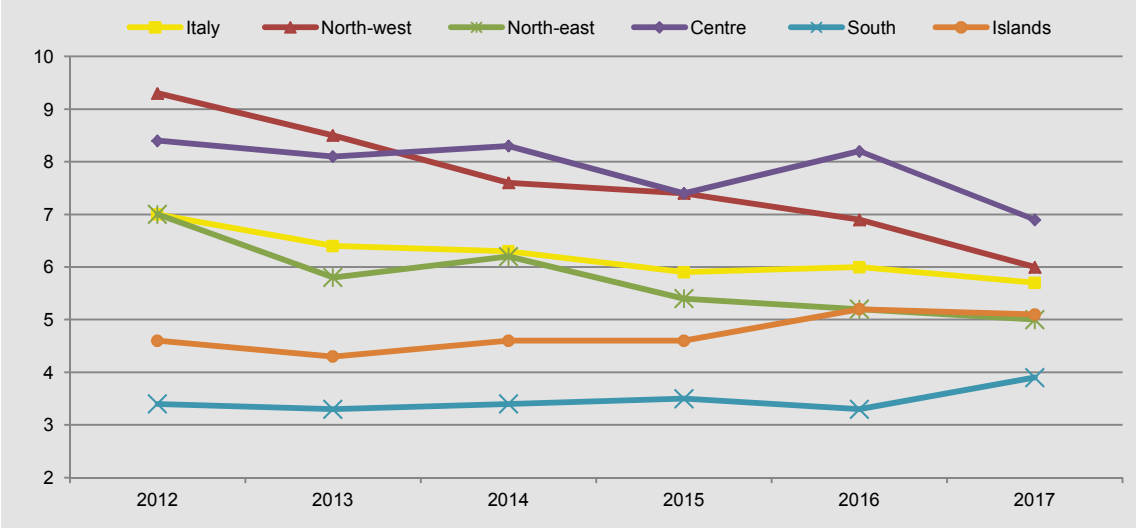


Source: Eurostat, European Statistical System (ESS)

The Italian data show that the incidence of HIV infections has decreased from 7 new cases per 100,000 residents in 2012 to 5.7 in 2017, in line with the average incidence observed among EU countries (5.8 new cases per 100,000)[3]. The trend, however, is fairly stable after 2015. In 2017, the highest incidences were recorded in the Centre and in the North-west (Lazio, Liguria and Toscana above all), and in the North-west the fastest decrease is observed compared to 2012 (Figure 3.5). In line with Europe, the values among males (8.9 new cases per 100,000) are higher than those found among females (2.6 new cases).

3 For further information see "Supplemento del Notiziario dell'Istituto Superiore di Sanità. Volume 31 - Numero 9 - Supplemento 1 (2018)".

Figure 3.5 - Incidence of HIV infections in Italy by geographic area. Years 2012-2017 (per 100,000 residents)



Source: Istituto Superiore di Sanità

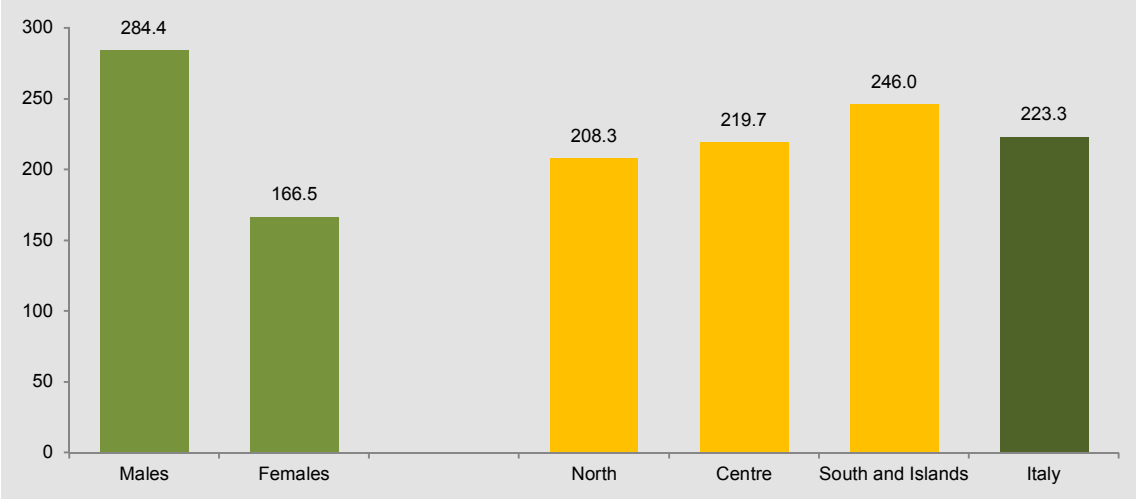
SDG 3.4.1 - Mortality rate attributed to cardiovascular diseases, cancer, diabetes or chronic respiratory diseases

Most of the total deaths are, today, caused by non-communicable diseases. In particular, in 2016, around 32 million people worldwide died due to the main non-communicable diseases: cardiovascular diseases, malignant tumors, chronic respiratory diseases and diabetes mellitus. The risk of death from one of these causes between 30 and 70 years of age is still decreasing and was equal to 18.3% in 2016 (21.6 among males and 15 among females), with a 18% decrease compared to 2000.

The most rapid progress in recent years has been recorded in Europe, Australia and New Zealand, where the percentage has fallen by around 30% between 2000 and 2016; the same percentage change is also found in Italy.

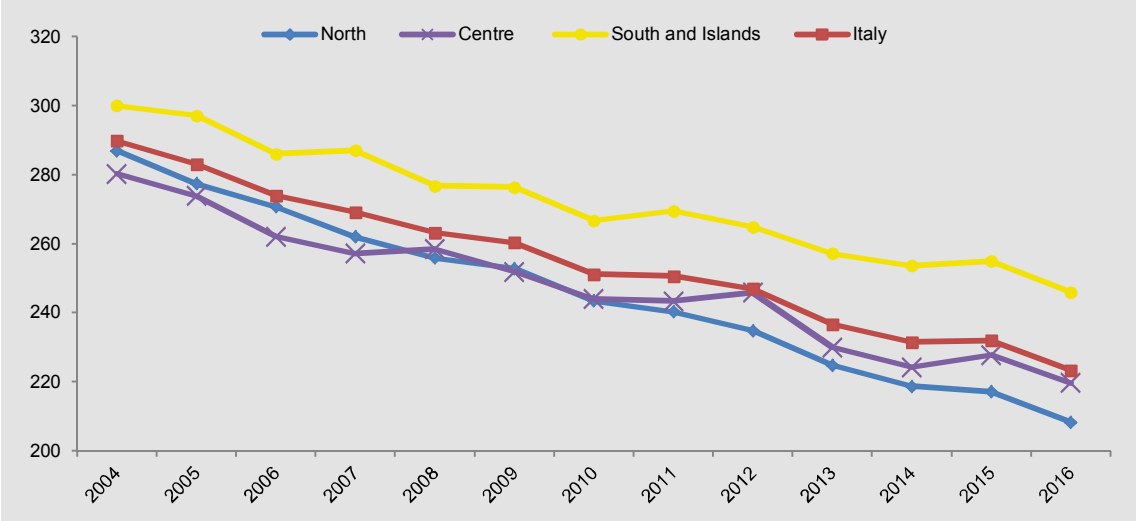
In Italy, the indicator used to monitor this Target is the standardized mortality rate between 30 and 69 years of age for malignant tumors, diabetes mellitus, cardiovascular diseases and chronic respiratory diseases. Between 2004 and 2016, mortality from these causes decreased, especially among males, who still have rates 70% higher than females. In 2016, the rate dropped to 284.4 deaths per 100,000 male residents (it was 386.7 per 100,000 in 2004), and to 166.5 deaths per 100,000 among females (it was 201.4 in 2004) (Figure 3.6). In Italy, the proposed Target of reaching a standardized rate of 258 deaths per 100,000 for males and 134 for females by 2030 seems achievable, assuming that the average rates of decrease observed between 2004 and 2016 are maintained. In particular, between 2015 and 2016 mortality rate for these causes resumed its decrease (percentage change -3.8% between 2015 and 2016, compared to the substantial stability recorded in 2015). At territorial level, the highest rate is recorded in the South and Islands area (246 deaths per 100,000 compared to 208.3 deaths in the North and 219.7 in the Centre), which is also the geographical area with the slowest decrease since 2004 (Figure 3.7).

Figure 3.6 - Age standardised mortality rate between 30-69 years of age from major causes of death in Italy by gender and geographic area. Year 2016 (per 100,000 residents)



Source: Istat, Survey on deaths and causes of death

Figure 3.7 - Age standardised mortality rate between 30-69 years of age from major causes of death in Italy by geographic area. Years 2004-2016 (per 100,000 residents)



Source: Istat, Survey on deaths and causes of death

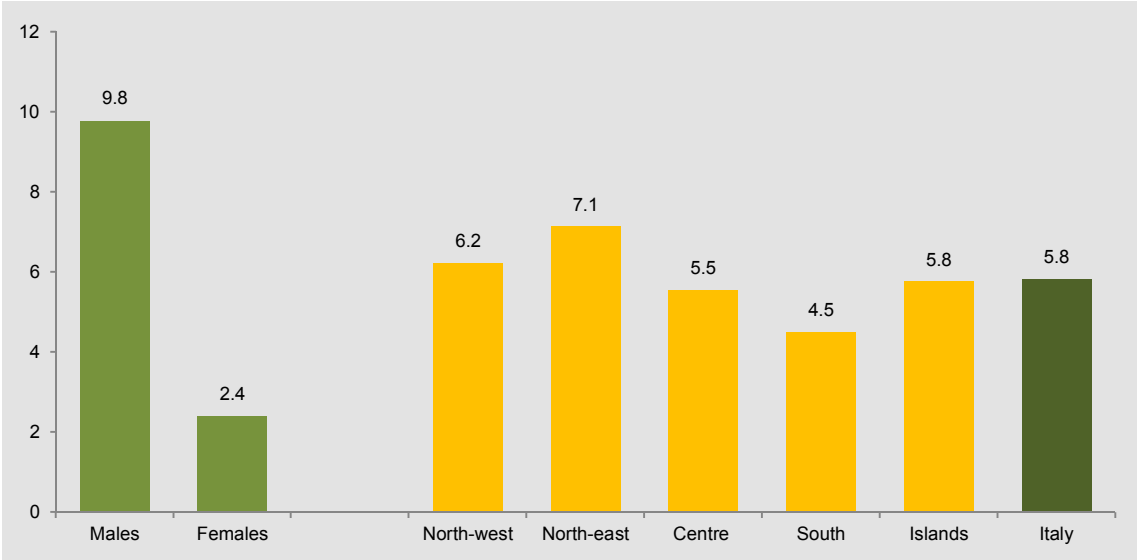
SDG 3.4.2 - Suicide mortality rate

In 2016, 10.6 people out of 100 thousand died for having committed suicide worldwide. The rate among men, 13.5 deaths per 100,000 inhabitants, nearly doubled than among women, 7.7 per 100,000.

In Italy, the mortality rate from suicide is lower than in other areas of the world. According to the latest data available, in 2015 the standardized rate for the EU28 average was 10.9 deaths for this cause per 100,000 inhabitants, compared to 6.1 deaths in Italy in the same period. The highest values were recorded in Lithuania, Slovenia, Latvia and Hungary (respectively 30.0, 20.7, 19.3 and 19 deaths per 100,000).

In 2016, in Italy, the suicide death rate dropped under 6 deaths for the first time, with 5.8 suicides per 100,000 inhabitants. However, gender differences are noted to the detriment of men, among them the rate reached 9.8 deaths per 100,000 inhabitants (10.1 in 2015), while the rate among women was equal to 2.4 deaths (it was 2.6 in 2015). At the territorial level, the highest suicide mortality levels were recorded in the North-east (7.1 suicides per 100,000 inhabitants), the lowest in the South (4.5 suicides per 100,000 inhabitants) (Figure 3.8).

Figure 3.8 - Age standardised suicide mortality rate in Italy by gender and geographic area. Year 2016 (per 100,000 residents)



Source: Istat, Survey on deaths and causes of death

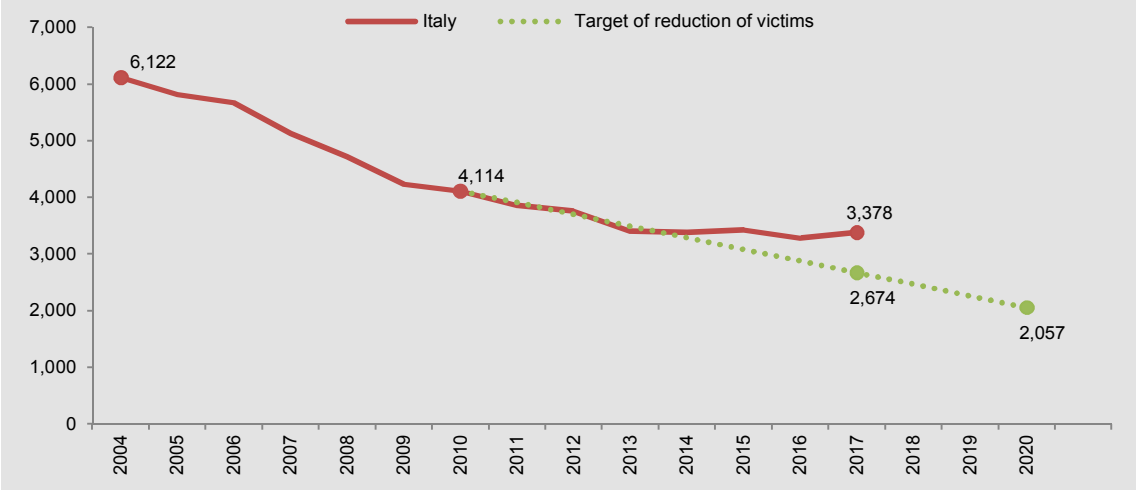
SDG 3.6.1 - Death rate due to road traffic injuries

Halving the number of deaths and injuries from road traffic accidents by 2020, compared to 2010, is a difficult Target to achieve. However, a new Goal of halving road fatalities by 2030 (compared to 2020 levels) was announced by the European Commission. With the third "Europe on the move" package published on the 17th of May 2018, in fact, the Commission renews the objectives of a strong reduction in deaths and serious injuries due to road accidents and anticipates the strategies proposed for safe, clean and connected mobility, announcing actions to be implemented in the next decade 2020-2030.

Road safety effectiveness indicators - SPI Safety Performance Indicators – are being defined to monitor the progress in EU countries, and Italy needs to be ready to calculate them on an annual basis. They will cover the following areas: speed, use of the protection systems (helmet, safety belts, child seats), use of alcohol and drugs, safety level of the vehicle park, safety level of the national road network, distraction when driving, efficiency of rescue systems in the event of an accident.

In 2017, the crude mortality rate for road accidents in Europe was 5 deaths per 100,000 people, with a 19.9% decrease compared to 2010 (benchmark year of the European road safety strategy). Italy stood 18th in the European ranking, with a crude rate of 5.6 deaths per 100,000, and a 17.9% reduction compared to 2010.

Figure 3.9 - Number of road traffic fatal injuries in Italy. Years 2004-2017 (numbers)



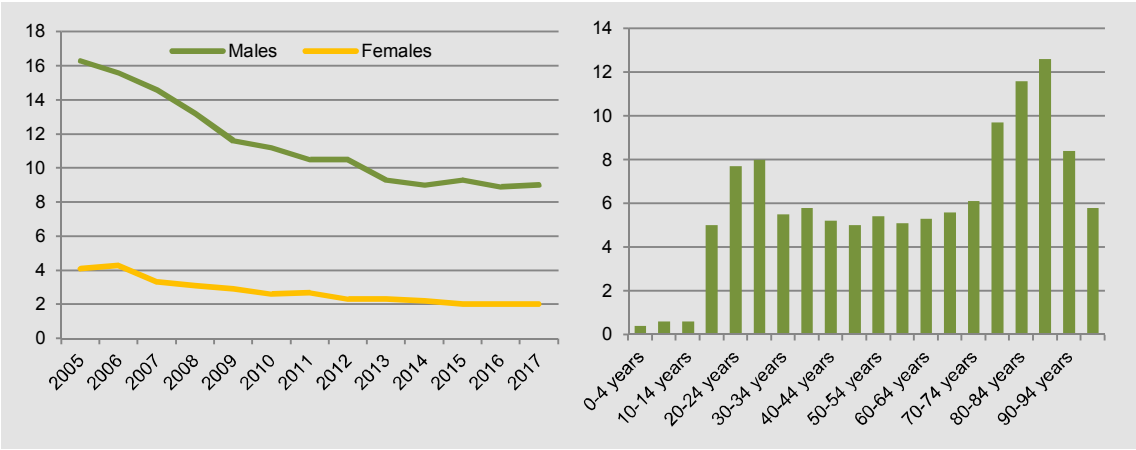
Source: Istat, Survey on road accidents with injuries

Although compared to 2016 the number of road accident victims in the European Union has decreased by 1.6%, the gap between actual and necessary progress towards the European objective has widened.

In Italy, after the decreasing trend that almost halved the number of road accident deaths between 2004 and 2016 (from 6,122 to 3,283), in 2017 road deaths increased again (3.378). In the Italian case, the gap between actual deaths and deaths expected to reach the Target by 2020 widened too (Figure 3.9).

The mortality rate differs considerably by gender and age groups, with higher values among males[4] (9 deaths per 100,000 males compared to 2 deaths among females) and a trend by age showing two peaks, one between 20 and 29 years and one in the older age groups. However, it can be observed that between 2005 and 2017 the most significant reductions in the rate were registered among the youngest: in 2005 the highest rates were registered among people

Figure 3.10 - Age standardised death rate due to road traffic injuries in Italy by gender and age standardised death rate due to road traffic injuries by age group. Years 2005-2017 and Year 2017 (per 1,000 inhabitants)



Source: Istat, Survey on road accidents with injuries

4 Rates by gender and geographic area are age standardised according to the Eu28 standard population.

aged 15-19, 20-24 and 25-29, while in 2017 the accident mortality rates among these groups was lower than those recorded among people aged seventy-five and over (Figure 3.10).

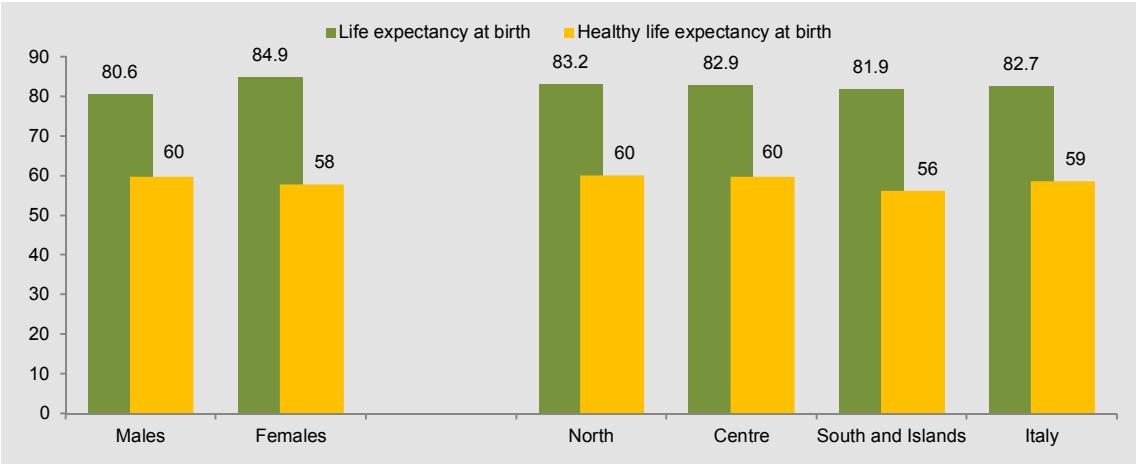
Regarding serious road traffic injuries, one of the main elements to be contrasted according to the new decade on road safety 2020-2030, in 2017 the rate stopped growing, with 28.6 serious injuries in a car accident for 100,000 inhabitants.

Other indicators

SDG 3.4.1 - Healthy life expectancy at birth

In Italy the indicator on healthy life expectancy at birth, which provides a measure of the quality of survival, stood at 58.5 years of healthy life expected at birth in 2017, of the 82.7 years of life expected in total[5]. The number of years to live in good health has increased by 2.3 years, compared to 2009, while it remains substantially stable compared to 2016. The greatest increase is observed among females (+2.7 years), which nevertheless maintain their disadvantage compared to males in terms of quality of survival (Figure 3.11). The territorial inequalities in the quality of survival are even more marked, with about 4 years difference in the expected life in good health at birth between the North and the South and Islands area.

Figure 3.11 - Life expectancy and healthy life expectancy at birth by gender and geographical area. Year 2017 (in years)



Source: Istat, Mortality tables of Italian population and Survey on Aspects of daily life

SDG 3.5.2 - Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol

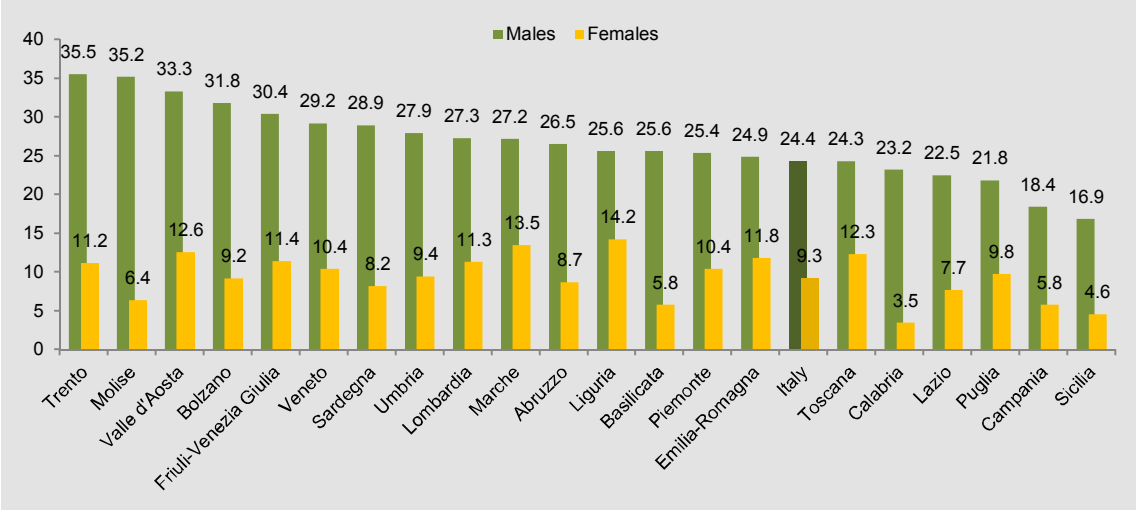
In Italy, the standardized proportion of people aged 15 and over with risky behavior in alcohol consumption was 16.7% in 2017. The rate was stable in the last four years, after the positive trend observed between 2009 and 2014, with a decrease in the proportion of people who consumed alcohol above the recommended thresholds or who practiced binge drinking by 7.5 percentage points for males and 4 for females.

5 For life expectancy at birth the 2018 estimate is available, and it is equal to 85.2 years for females and 80.8 for males.

Risky habits in alcohol consumption are more widespread among men (24.4% compared to 9.3% among women) and among people living in the northern regions (with values over 30% among males in Trento, Bolzano, Valle d'Aosta and Friuli-Venezia Giulia) (Figure 3.12).

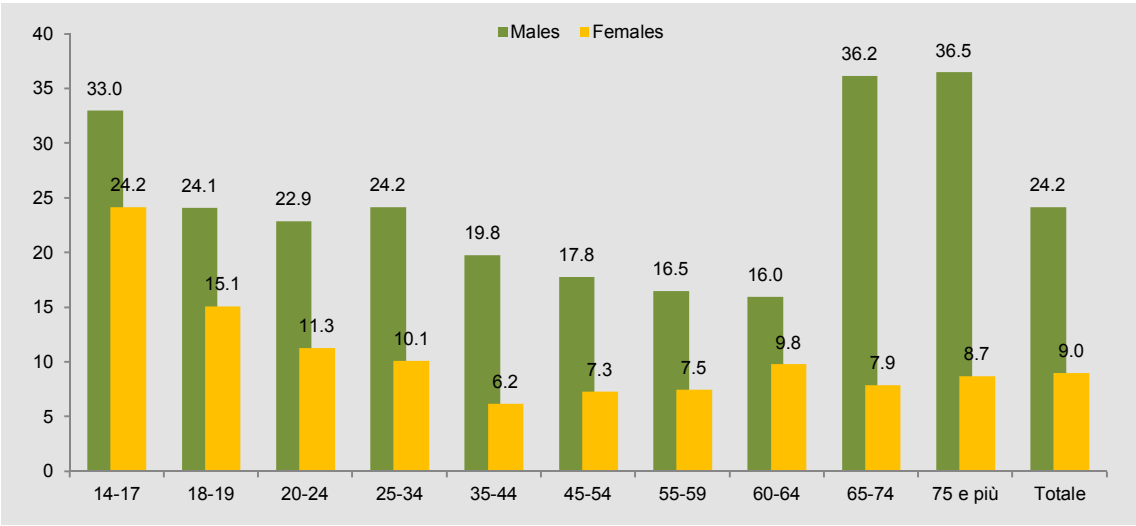
Observing the phenomenon by age group, in 2017 over 36% of men aged 65 and over have a risky behavior in alcohol consumption. Followed by boys aged 14-17 (33% among males, 24.2% among females) (Figure 3.13).

Figure 3.12 - Standardised rate of risky alcohol consumption by gender and region. Year 2017 (per cent)



Source: Istat, Survey on Aspects of daily life

Figure 3.13 - Standardised rate of risky alcohol consumption by gender and age group. Year 2017 (per cent)



Source: Istat, Survey on Aspects of daily life

In brief

Italy has long since achieved the Goal set by the United Nations for neonatal mortality and for the probability of death under 5 years of age, ranking among the countries with the lowest rates in Europe. The decrease continues in the medium term, particularly in the South and Islands area, which slowly reduces the gap compared to the national average.

Globally, the incidence of HIV has halved compared to 2000, also thanks to the spread of antiretroviral therapy. **In Italy, in 2017, the incidence of HIV infections fell to 5.7 new cases per 100,000 residents**, with an almost stable trend after 2015.

The standardized mortality rate between 30 and 69 years of age for malignant tumors, diabetes mellitus, cardiovascular diseases and chronic respiratory diseases has been steadily decreasing since 2004, especially among males; however, they still show rates which are 70% higher than females. In the last year the decrease resumed, after a setback in 2015. The Target proposed for 2030, in the hypothesis that the average decrease rates observed between 2004 and 2016 are maintained, seems to be possibly achieved in Italy.

The standardized mortality rate for suicide is lower in Italy than in the rest of Europe, and in 2016 it fell for the first time below 6 deaths, with 5.8 suicides per 100 thousand inhabitants. The disadvantage of males and people residents in the North-east of the country is confirmed.

In 2017, road accident deaths were on the rise in Italy, further removing the possibility of reaching the Goal of halving the number of deaths for this cause between 2010 and 2020. The increase in the rate of serious injuries in accidents, among the main elements to be contrasted identified for the new decade on road safety 2020-2030, has instead stopped.

In 2017, the healthy life expectancy at birth in our country was 58.7 years, a substantially stable value compared to 2016, but it increased by 2.3 years compared to 2009. The largest increase is observed among females (+2.7 years), which however maintain their disadvantage compared to males in terms of quality of survival. The territorial inequalities to the detriment of the South and Islands area are more marked, with approximately 4-year difference in the expected years of life in good health at birth between the North and South and Islands area.

SDG Ref.	INDICATORS		VARIATION			
			long term	medium term		short term
			2007-2017	2007-2012	2012-2017	2016-2017
3.2.1						
	Under-five mortality rate					
3.2.2						
	Neonatal mortality rate		a	b	c	d
3.3.1						
	Number of new HIV infections per 100,000					
3.3.2						
	Tuberculosis incidence per 100,000 population				c	d
3.3.4						
	Hepatitis B incidence per 100,000 population				c	d
3.4.1						
	Healthy life expectancy at birth		e	f	g	
	Age standardised mortality rate between 30-69 years of age from major causes of death		a	b	c	d
3.4.2						
	Age standardised suicide mortality rate		a	b	c	d
3.5.2						
	Liters of pure alcol per capita		h	m	i	l
	Alcohol consumption					
3.6.1						
	Age standardised death rate due to road traffic injuries					
	Road accidents serious harmfulness rate					
3.7.2						
	Age-specific fertility rates	per 1000 women aged 10-14				
		per 1000 women aged 15-19				
3.a.1						
	Standardized proportion of people aged 15 and over who report current smoking					
3.b.1						
	Vaccination coverage	Influenza age 65+				
		Pediatric: polio			g	
		Pediatric: measles			g	
		Pediatric: rubella			g	

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2006-2016
(b) 2006-2011
(c) 2011-2016
(d) 2015-2016
(e) 2009-2017
(f) 2009-2013
(g) 2013-2017
(h) 2005-2014
(i) 2010-2014
(l) 2013-2014
(m) 2005-2010

GOAL 4

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL[1]

Quality education and lifelong learning opportunities for all are central to ensuring a full and productive life to all individuals and to the realization of sustainable development. The Targets to be monitored concern different dimensions: access for all to education of all levels (primary, secondary and tertiary), the quality of education, the possession of knowledge and skills for employment and sustainable development; the elimination of gender disparities in education and equal access for the most vulnerable; monitoring of school facilities, so that they are suitable for everyone's needs.

Towards the achievement of the objectives connected to universal education, important results have been obtained, above all for the increase in access to education for women and girls: the basic level of literacy has improved significantly, but it remains necessary to strengthen actions for achieving even better results at all educational levels and for all.

1 This section was edited by Barbara Baldazzi with the contribution from Raffaella Cascioli.

Targets

Goal 4 is articulated into ten Targets, the last three Targets regarding the means of implementation[2]:

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.

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 culture's 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.

2 The Targets referring to the means of implementation are distinguished by a letter rather than a number.

Indicators released by Istat

Istat releases 36 statistical measures related to eight Targets.

Table 4.1 - SDGs indicators and indicators released by Istat

Indicators released by Istat	Relation with SDG indicator	Last available value
SDG 4.1.1 - Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex		
Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in literacy competence (Servizio Statistico Invalsi, 2018, %)	Identical	34,4
Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in numerical competence (Servizio Statistico Invalsi, 2018, %)	Identical	40,1
Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in english listening competence (Servizio Statistico Invalsi, 2018, %)	Identical	43,7
Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in english reading competence (Servizio Statistico Invalsi, 2018, %)	Identical	26,1
Share of students in grade 10 (second year of upper secondary education) performing below the baseline level of proficiency in literacy competence (Servizio Statistico Invalsi, 2018, %)	Identical	33,5
Share of students in grade 10 (second year of upper secondary education) performing below the baseline level of proficiency in numerical competence (Servizio Statistico Invalsi, 2018, %)	Identical	41,6
Share of 15-year-old students failing to reach level 2 (“basic skills level”) for the literacy (OECD - INVALSI, 2015, %)	Identical	20,9
Share of 15-year-old students failing to reach level 2 (“basic skills level”) for the mathematics (OECD - INVALSI, 2015, %)	Identical	23,3
Share of 15-year-old students failing to reach level 2 (“basic skills level”) for scienc (OECD - INVALSI, 2015, %)	Identical	23,2
SDG 4.2.2 - Participation rate in organized learning (one year before the official primary entry age), by sex		
Participation rate in organized learning (one year before the official primary entry age) (Ministero dell’Istruzione, dell’Università e della Ricerca, 2017, %)	Identical	95,7
SDG 4.3.1 - Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex		
Participation rate of youth and adults (25-64) in formal and non-formal education and training in the previous 12 months (Istat, 2016, %)	Identical	41,5
Participation in long-life learning (4 weeks) (Istat, 2018, %)	Proxy	8,1
Early leavers from education and training (Istat, 2018, %)	Proxy	14,5
Students with disabilities:Pre-primary (Sistema Informativo del Ministero dell’istruzione, dell’università e della ricerca (SIMPI), 2016, %)	National context	1,5
Students with disabilities: Primary (Sistema Informativo del Ministero dell’istruzione, dell’università e della ricerca (SIMPI), 2016, %)	National context	3,2
Students with disabilities: Lower secondary (Sistema Informativo del Ministero dell’istruzione, dell’università e della ricerca (SIMPI), 2016, %)	National context	3,9
Students with disabilities: Upper secondary (Sistema Informativo del Ministero dell’istruzione, dell’università e della ricerca (SIMPI), 2016, %)	National context	2,3
SDG 4.4.1 - Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill		
People with high level of IT competencies (Istat, 2016, %)	Proxy	19,5
SDG 4.5.1 - Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated		
Parity index Females/Males 4.1.1 (Servizio Statistico Invalsi, 2018, 1=Parity)	Identical	(*)
Parity index First generation foreigner/Italian 4.1.1 (Servizio Statistico Invalsi, 2018, 1=Parity)	Identical	(*)
Parity index Females/Males 4.2.2 (Ministero dell’Istruzione dell’Università e della Ricerca, 2017, 1=parity)	Identical	0,99
Parity index Females/Males 4.3.1 Participation rate of youth and adults (25-64) in formal and non-formal education and training in the previous 4 weeks (Istat, 2018, 1=parità)	Identical	1,12
Parity index Females/Males 4.3.1 Early school leavers (Istat, 2018, 1=parità)	Identical	0,74
Parity index Females/Males 4.4.1 (Istat, 2016, 1=parità)	Identical	0,77
Parity index Females/Males 4.6.1 (Istat, 2018, 1=parità)	Identical	1,56

(*) Please refer to the data table.

Table 4.1 continued **- SDGs indicators and indicators released by Istat**

Indicators released by Istat	Relation with SDG indicator	Last available value
SDG 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) numeracy skills, by sex		
People having completed tertiary education (ISCED 5,6,7,8) (Istat, 2018, %)	National context	27,8
SDG 4.a.1 - Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)		
Buildings equipped with specific arrangements for overcoming architectural barriers (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2017/18, %, n.)	Proxy	74.5 (29.923)
Buildings equipped with facilities to reduce energy consumption (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2017/18, %, n.)	Proxy	57.6 (23.122)
Buildings equipped with specific noise protection measures (acoustic insulation) (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2017/18, %, n.)	Proxy	10,0 (4.111)
Class equipment: number of devices per class, national average (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2015/16, n)	Proxy	(*)
Public school class connection (national average) (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2015/2016, %)	Proxy	(*)
Laboratory facilities available in the institute (number of devices per laboratory) (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2015/16, n)	Proxy	(*)
Laboratory network connection (Ministero dell'Istruzione, dell'Università e della Ricerca, A.s. 2015/16, %)	Proxy	(*)
Number of schools with pupils with disabilities by adapted computer workstations: Primary school (Istat, 2017, %)	Identical	74,1
Number of schools with pupils with disabilities by adapted computer workstations: Secondary (Istat, 2017, %)	Identical	78,6
SDG 4.b.1 - Volume of official development assistance flows for scholarships by sector and type of study		
Volume of official development assistance flows for scholarships by sector and type of study (Ministero degli Affari Esteri e della Cooperazione Internazionale, 2017, Milioni di euro)	Identical	3,69

(*) Please refer to the data table.

In Goal 4 monitoring "Quality education for all" for our country focuses on the training path of people from access to learning activities at five years, continuing with inclusion in secondary and tertiary education levels, monitoring skills and learned knowledge.

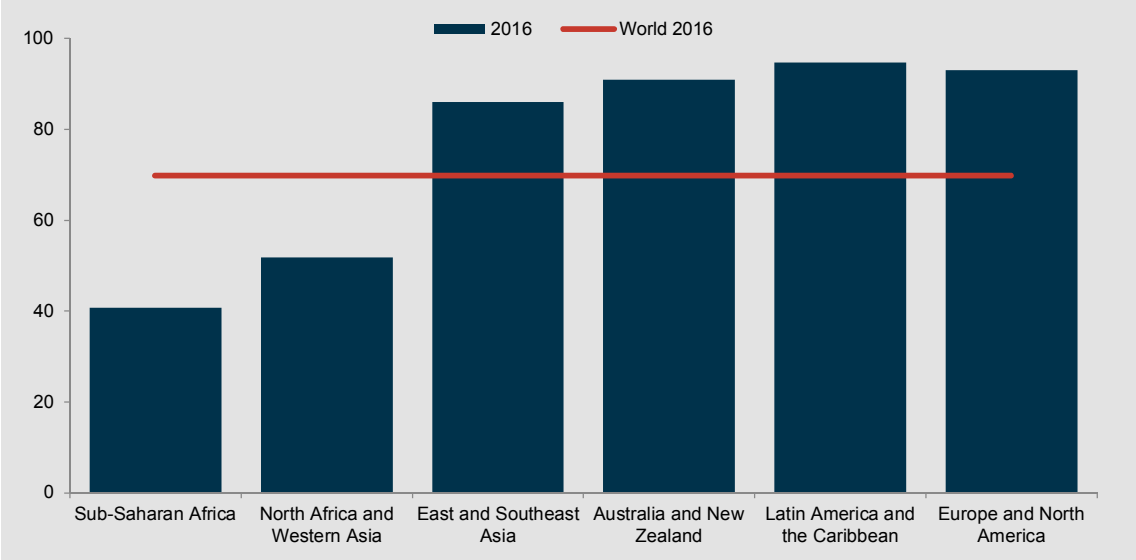
Focus

SDG 4.2.2 - Participation rate in organized learning (one year before the official primary entry age), by sex

Early childhood is a critical period for a child's cognitive development. Organized learning before the official start of primary school has been shown to boost a child's social, emotional and intellectual development and support readiness for primary education and future learning. Pre-primary education is, in fact, considered an important part of a holistic and robust educational system.

In 2016, 69.7% of children worldwide participated in pre-primary or primary education in the year prior to the official age of entry to primary school. However, in Sub-Saharan Africa, the rate was only 4 in 10 children, in North-Africa and Western Asia the rate was only 5 in 10 children, versus 9 in 10 children in Europe and Northern America, and Latin America and the Caribbean. In 2016, in Italy, the rate of participation of 5 years old children in pre-primary education was 96.4%.

Figure 4.1 - Participation rate in organized learning one year before the official age of entry into primary school. Year 2016 (%)



Source: Unesco

SDG 4.1.1 - Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex.

Every child and young person has the right to learn, train, develop his skills, competences and aspirations in the most profitable possible way and with the best opportunities; when this right is not guaranteed, the child finds himself in a condition of educational poverty, suffers from a lack of opportunity, which strongly and negatively affects his growth.

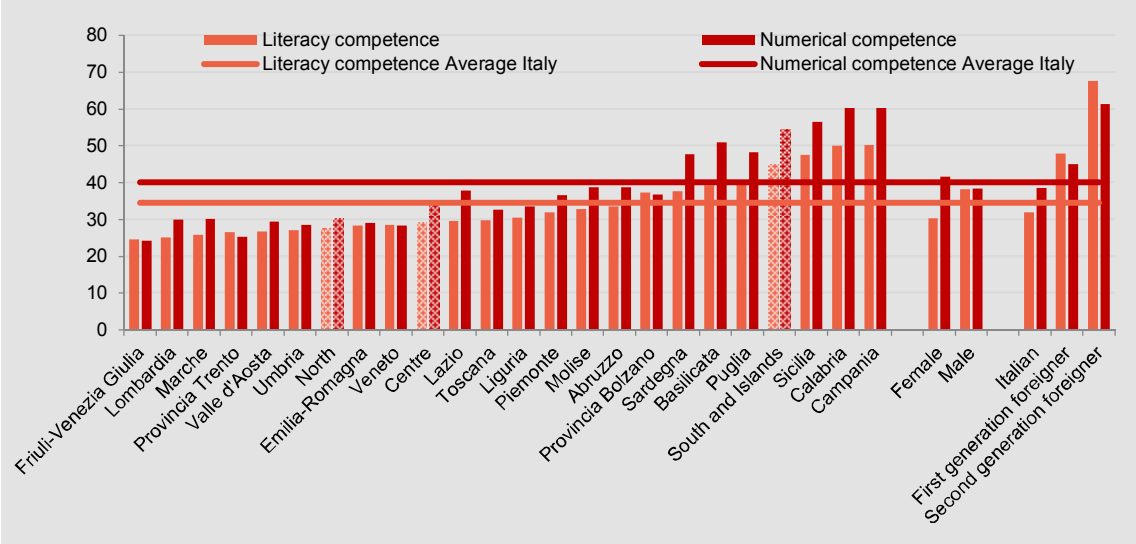
Moreover, educational poverty is a multi dimensional phenomenon, which also involve other Targets and objectives of the 2030 Agenda. The disadvantage of children and young people is often influenced by the socio-economic family situation, by material factors that penalize good growth (for example the region of residence), from inequality of opportunity that is perpetuated from generation to generation, in some places and some families.

The empirical measurement of educational poverty will therefore be studied through the levels of literacy and numerical competence, knowledge of the English language, early school leaving and educational qualifications, trying to disaggregate information in a widespread manner to bring out inequalities.

An important Goal of the 2030 Agenda is to develop educational systems capable of providing adequate numeracy and literacy skills, trying to minimize inequalities in skills and knowledge.

In Italy, the share of children enrolled in the third year of lower secondary education who are low performers in literacy skills is 34.4%, in mathematics 40.1%.

Figure 4.2 - Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in literacy and numerical competence (level 2 out of 5 levels) by region, gender and nationality. Years 2018 (%)



Source: Statistical System Invalsi

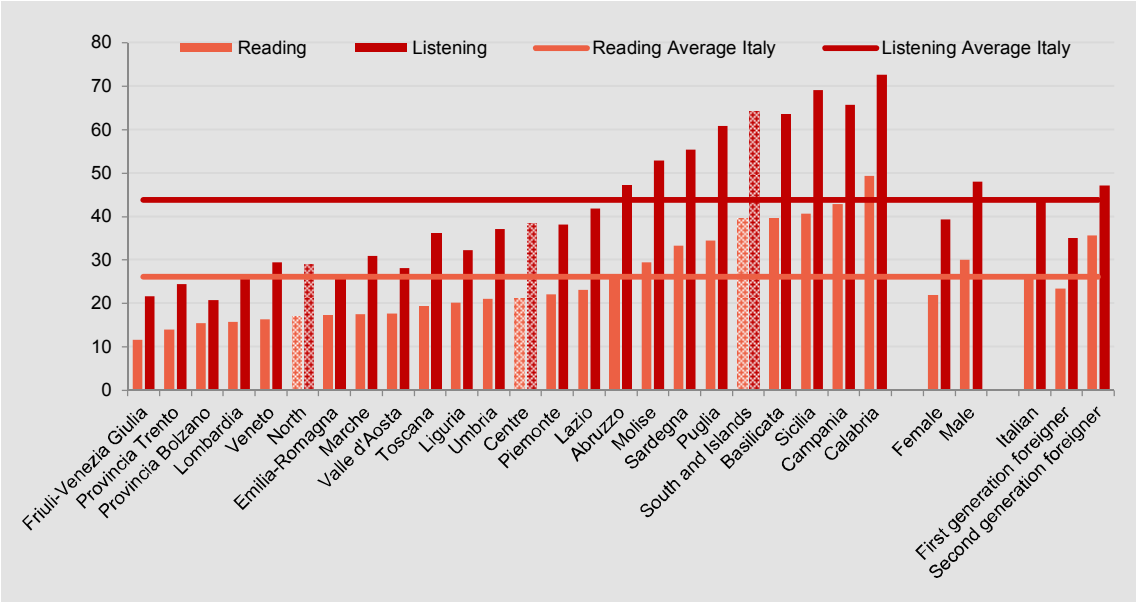
There are many territorial, gender and nationality differences that often feed inequalities regarding access to educational opportunities. The lowest percentages of students with low levels of literacy skills are recorded in Friuli-Venezia Giulia (24.6%), in Lombardia (25.1%), in Marche (25.8%) and in the Province of Trento (26.6%). For numerical skills, the proportion of the inadequate is lowest in Friuli-Venezia Giulia (24.2%), in the Province of Trento (25.4%), in Veneto (28.3%) and in Umbria (28.5%). Campania, with 50.2% of low performers in literacy skills, followed by Calabria (50%) and Sicilia (47.5%) are the regions where the levels of students with low literacy skills are the highest; also for the numerical competences of the students of third year of lower secondary education schools of first degree, these regions maintain the highest levels of insufficiency, Campania and Calabria with 60.3% and Sicilia with 56.6%.

Compared to males, a higher percentage of girls is below the required level in mathematical skills (41.7%, against 38.5% of males), while for literacy skills the situation is reversed: 38.3% of the boys does not reach the sufficiency, against 30.4% of the girls.

An evidence of the inequalities which exist due to different access opportunities is the strong difference in the competences of the children born in Italy from Italian (native) parents, compared to the first and second generation foreigners (respectively children born abroad from immigrant parents and children born in Italy to immigrant parents). 67.7% of children who were not born in our country do not reach the literacy sufficiency and 61.3% the numerical one. A measure of the integration capacity of foreign students in the school system is the difference in results between the first and second generation of immigrants and the natives. Youngsters born in Italy from foreign parents behave slightly better, both in terms of literacy (47.9% not sufficient) and in mathematic skills (45.1%). The percentage of Italian students who do not reach sufficiency is 31.9% for literacy skills and 38.6% for numerical skills.

Students in the third grade of lower secondary schools were given an English test, for listening and for reading comprehension. The skills possessed for reading comprehension are, on average, higher, while students find greater difficulties in listening comprehension. On average, 26.1% of students do not reach A2 level for reading and 43.7% for A2 level[3] for listening. In both tests, students from Calabria, Sicilia and Campania achieved a significantly lower score with greater frequency, while boys from the provinces of Trento and Bolzano, Friuli-Venezia Giulia and Lombardia obtained a better score. Second-generation foreign students achieve better results on average, compared to those of Italian students.

Figure 4.3 - Share of students in grade 8 (third year of lower secondary education) performing below the baseline level of proficiency in English listening and reading competence by region, gender and nationality. Year 2018 (%)

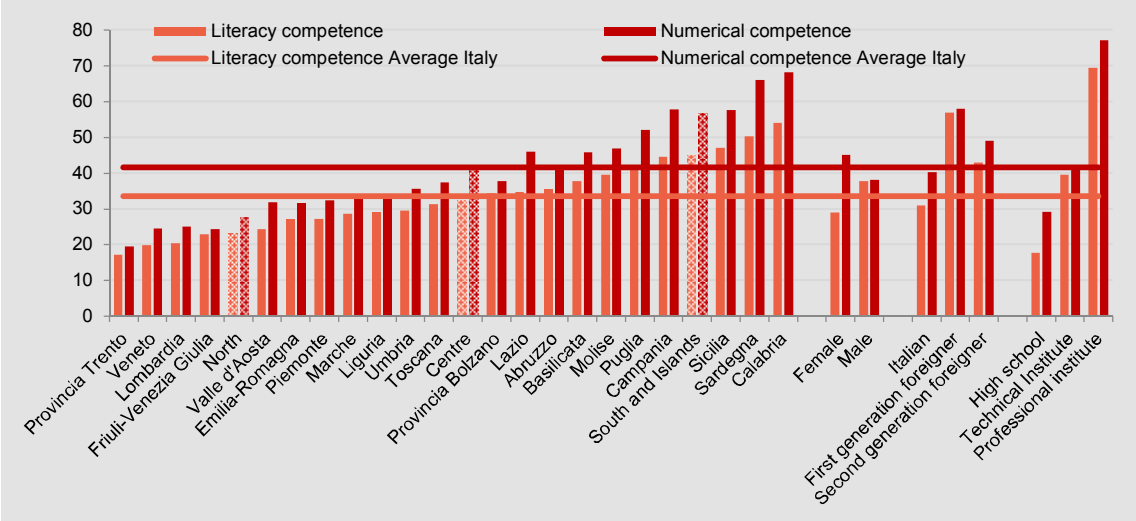


Source: Statistical System Invalsi

3 The Common European Framework of Reference for Languages (CEFR) distinguishes three competence slots subdivided in their turn in two levels, each one for a total of six total levels: A2 level is Pre-Intermediate Base competence.

Among the students of second year of upper secondary schools, 33.5% do not reach a sufficient level in literacy skills and 41.6% in numerical ones. Regional differences are wide. Students in the North are less lacking both in linguistic and in mathematics skills, the students of the Center are positioned in the national average levels and the students of the South have particular deficiencies especially in mathematics (more than half of the students and students of Puglia, 52 2%, Campania, 57.9%, Sicilia, 57.6%, Sardegna, 66%, and Calabria, 68.2%, are insufficient). The difference between girls and boys is wide for linguistics skills (37.7% of male students do not reach sufficiency against 29.1% of female students), and less strong for mathematical skills in favor of boys (38.2% of males against 45.1% of females).

Figure 4.4 - Share of students in grade 10 (second year of upper secondary education) performing below the baseline level of proficiency in literacy and numerical competence by region, gender and nationality. Year 2018 (%)



Source: Statistical System Invalsi

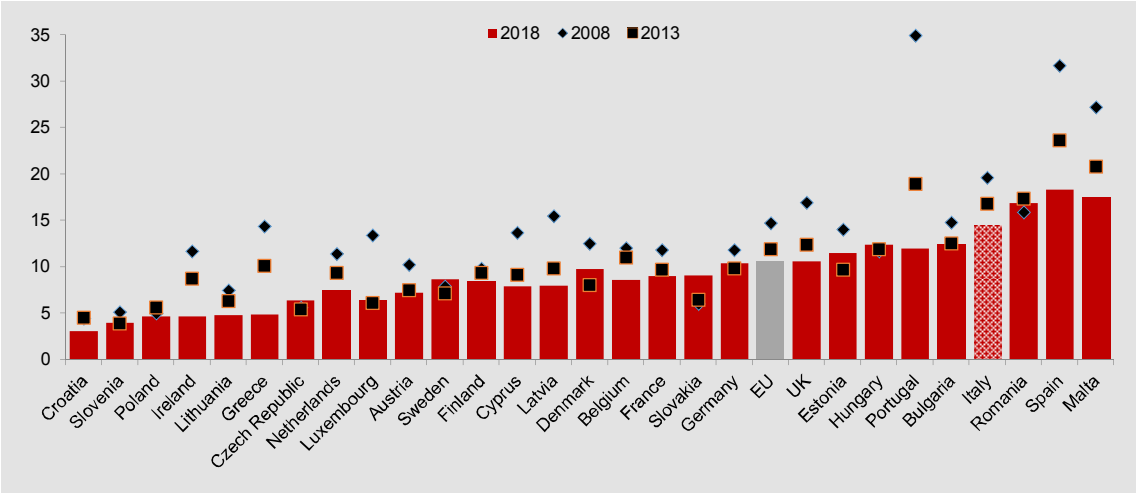
The upper secondary school is divided into three main channels: high schools, technical institutes and professional institutes. The result at the national level by type of school is very different, with 17.7% of high school students who do not reach sufficiency in literacy skills and 29.2% in mathematics; among those who attend technical institutes, 39.6% and 42.3% are insufficient in literacy and mathematics respectively; among the students of professional institutes, the results are very discouraging, with 69.4% not reaching sufficiency in literacy and 77.2% in numerical skills. The average scores for the three types of school vary, however, according to the overall average score of the student's region of residence, with students from the high schools of Calabria, Sicilia and Sardegna having scores significantly lower than those of the students of the technical institute of some northern regions.

SDG 4.3.1 - Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

The disadvantage shown by the students of Southern Italy in the achievement of skills is further highlighted by the indicator on the early leavers from the education and training

system of young people 18-24 years old[4]. A starting disadvantage for the future work career that can have long-term effects and that can be transmitted from generation to generation, triggering a vicious circle of education poverty. In Europe, the decline from 14.7% in 2008 to 10.6% in 2018 represents a significant progress towards the Europa 2020 Target of 10%. On the other hand in Italy, in 2018, the rate of early leavers has risen to 14.5% returning to 2015 levels, with clear territorial differences.

Figure 4.5 - Early leavers from education and training by European States. Years 2008, 2013, 2018 (%)



Source: Eurostat, European Labour Force Survey

In 2018, the rate of early leaving, stable for the South and the Centre, but on the rise for the North-West area and the Islands, remained, however, very high in the Islands and in the South, where the 18-24 year olds with a level of low education, not included in a training course were, respectively, 22.3% and 17.3%, against 10.6% in the North-East, 10.7% in the Centre and 13.3% of the North-West.

Among the regions, the Trento Province, Umbria, Abruzzo and Friuli-Venezia Giulia showed values below 10%, while in Calabria, Sicilia and Sardegna the values exceeded 20% (respectively 20.3%, 22,1% and 23%).

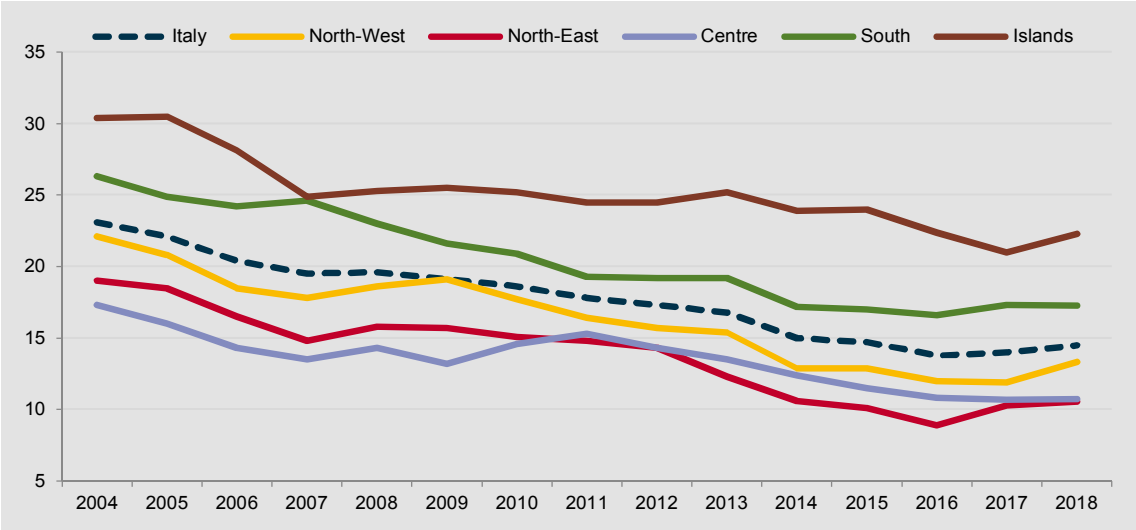
The regions that recorded the largest drop in school drop-out, from 2004 to 2018, are the Bolzano Province, with -19.5 percentage points, Puglia (-12.8 points) and Toscana with around -10 points.

The difference between the girls, more involved in the education system, and the boys is significant: in 2018, 16.5% of boys dropped out of school and were not part of a training course against 12.3% of girls. The gender difference has been decreasing over time: from 6.7 percentage points in 2004 to 4.2 in 2018.

The proportion of 18-24 year olds Italian and foreign citizenship who are not included in an education and training path is relevant: among the natives, 12.3% left school and education, among foreigners 37.6%.

4 Percentage of people aged 18-24 years who have achieved only lower secondary (ISCED 2) and are not included in a training program on total people aged 18-24 years.

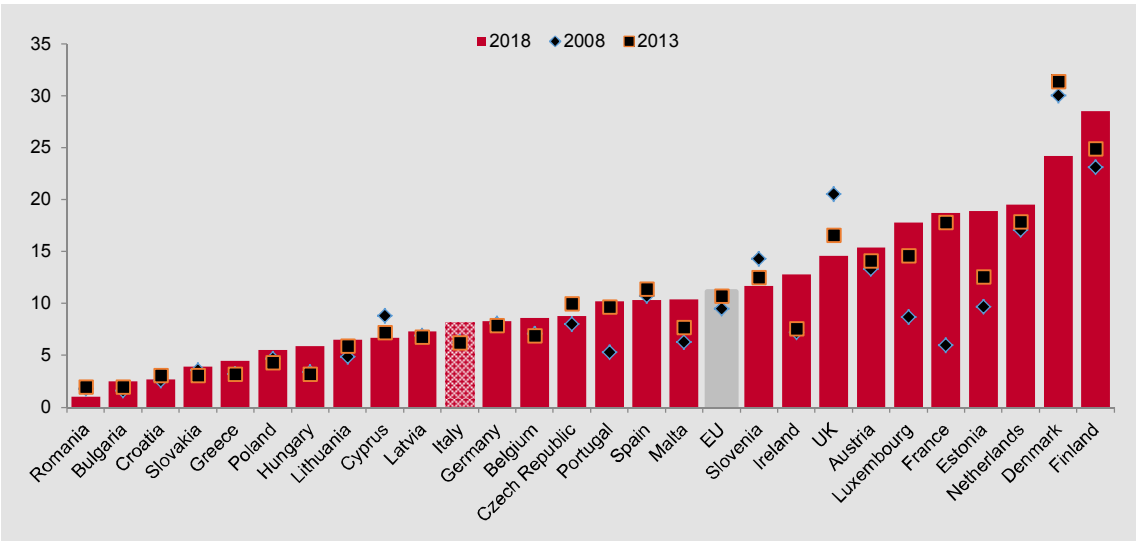
Figure 4.6 - Early leavers from education and training. Years 2004-2018 (%)



Source: Istat, Labour Force Survey

A further important aspect is the participation in the course of life in learning opportunities. The participation of adults in lifelong learning is growing in Italy, even if only slightly: in 2018, 8.2% of those aged between 25 and 64 years participated in at least one of training activity in the last 4 weeks.

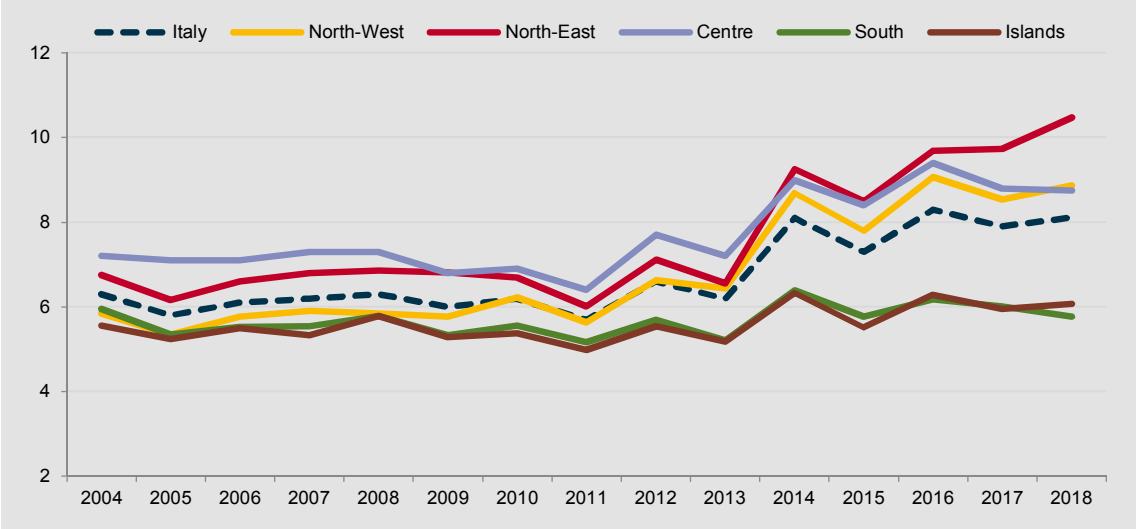
Figure 4.7 - Participation rate of youth and adults (25-64) in formal and non-formal education and training in the previous 4 weeks. Years 2008, 2013, 2018 (%)



Source: Eurostat, European Labour Force Survey

The most involved in formal and non-formal learning activities were, in 2018, young people between the ages of 25 and 34 (15.3%), women (8.6%) and residents in large cities (10.1%). From 2014 onwards the differences in participation in learning activities between the geographical areas have expanded: learning activities are more followed in the North-East (10.5% of people 25-64 years), in the North-West (8.9%) and, finally, in the South (5.8%).

Figure 4.8 - Participation rate of youth and adults (25-64) in formal and non-formal education and training in the previous 4 weeks. Years 2004-2018 (%)



Source: Istat, Labour Force Survey

Other indicators

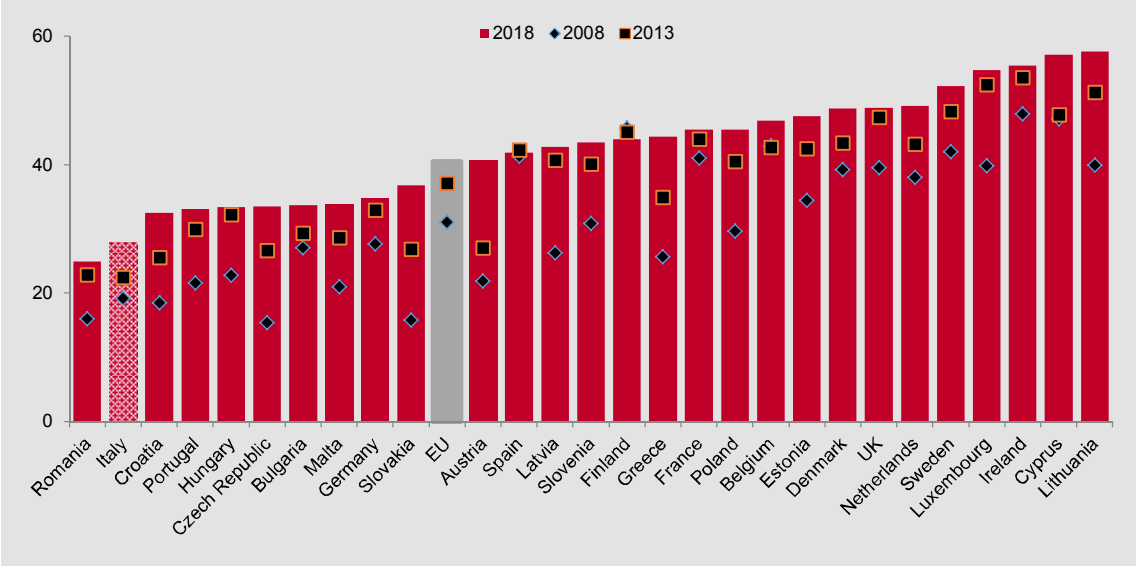
SDG 4.6.1 - Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

The education and training system must guarantee people to reach and maintain a level of knowledge of the language, functional literacy and mathematical skills useful for being used in everyday life and at work. One indicator allow indirect knowledge of the level of skills and knowledge of the adult population and the maintenance of adequate training: the share of the population 30-34 years old who completed tertiary education (European Target is 40%). The EU, with a tertiary education rate of 40.5% in 2018, has reached the Target for Europe 2020. In Italy, 27.9% of young people aged 30-34 years old have a tertiary qualification and the national Target set by Europe 2020 (26-27%) has been reached; however, the level of the rate remains much lower than the European average and is higher only than Romania's.

Among people aged 30 to 34 who completed tertiary education there are large territorial differences: in 2018, 29.9% had a tertiary degree in Central Italy; in the North-West they were 32%, in the North-East 33.2% while in the South and the Islands only 21.3% and 20.9% respectively. Over the past 10 years, the gap between geographical areas has increased: the growth of graduates in the North area has been significantly higher than in the southern regions.

In Piemonte, Lombardia, the Trento Province, Veneto, Friuli-Venezia Giulia, Emilia Romagna and Lazio, the percentage of young people aged 30-34 with a tertiary degree reached and exceeded 30%; in Abruzzo, Molise, Campania, Puglia, Calabria, Sicilia and Sardegna it did not reach 25%.

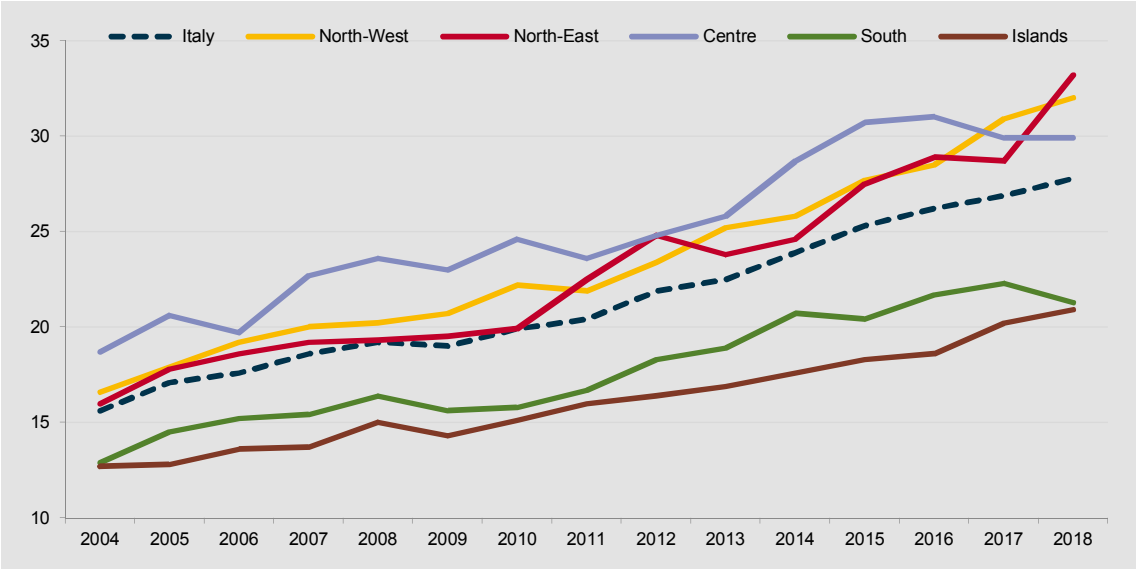
Figure 4.9 - People 30-34 years old having completed tertiary education (ISCED 5,6,7,8). Years 2008, 2013, 2018 (%)



Source: Eurostat, European Labour Force Survey

The difference between men and women is strong, and has grown over the years: in 2018, 34% of women aged 30-34 held a tertiary title against 21.7% of men. These values, in 2004, were 18.4% and 12.8% respectively.

Figure 4.10 - People 30-34 years old having completed tertiary education (ISCED 5,6,7,8). Years 2004-2018 (%)



Source: Istat, Labour Force Survey

In brief

Broad territorial gender and provenance inequalities

Lights and shadows on the Goal for quality education: Italy is still in the last places in Europe for the number of graduates, drop-out rate and skills.

The territorial and social inequality in the school inclusion process, in the training path and in the developed competences can be explained by the lack of opportunities, and risks to prefigure a vicious circle where education poverty is added to already existing strong deprivation situations.

Early leavears from the education and training system has increased over the past 2 years

The drop-out rate rose for the second consecutive year and reached, in 2018, 14.5%. There are still significant territorial differences to the detriment of the South and of males.

The alphabetic, numerical and English language skills are very low for some groups of students

In Italy, the proportion of children enrolled in the third year of lower secondary schools that do not reach the level of literacy is 34.4%; in mathematics 40.1%.

On average, 26.1% of students do not reach A2 level in their comprehension of written English and 43.7% of students do not reach A2 level in understanding English spoken.

Among the students who attend the second grade secondary schools, 33.5% does not reach a sufficient level in alphabetic skills and 41.6% in numerical ones.

In Italy, 27.9% of young people aged 30-34 completed tertiary education and the national Target set by Europe 2020 (26-27%) has been largely achieved

Nevertheless, the level of the rate remains much lower than the European average and is higher only than that of Romania. For women, the share of 30-34 year-old graduates is 34%, while for men it is 21.7%.

SDG Ref.	INDICATORS		VARIATION			
			long term	medium term		short term
			2007-2017	2007-2012	2012-2017	2016-2017
4.1.1						
	Share of 15-year-old students failing to reach level 2 ("basic skills level") in Literacy		a	b	c	d
	Share of 15-year-old students failing to reach level 2 (“basic skills level”) in Mathematics		a	b	c	d
	Share of 15-year-old students failing to reach level 2 (“basic skills level”) in Science				c	d
4.2.2						
	Participation rate in organized learning (one year before the official primary entry age)					
4.3.1						
	Participation in long-life learning (4 weeks)		e	f	g	h
	Early leavers from education and training		e	f	g	h
4.4.1						
	People with high level of IT competencies					i
4.6.1						
	People having completed tertiary education (ISCED 5,6,7,8)		e	f	g	h
4.a.1						
	Number of schools with pupils with disabilities by adapted computer workstations: Primary	Primary				
		Secondary				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2003-2015
(b) 2003-2009
(c) 2009-2015
(d) 2012-2015
(e) 2008-2018
(f) 2008-2013
(g) 2013-2018
(h) 2017-2018
(i) 2015-2016

GOAL 5

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS[1]

Despite progress made in gender equality and empowerment, women and girls continue to be victims of discrimination and violence.

Goal 5 proposes to eliminate every form of discrimination and violence for all women, of all ages, as well as all kinds of harmful practices such as unwanted children, child marriage or forced marriage and genital mutilation.

Goal 5 seeks for all women and girls equal rights and access to economic, natural and technological resources; full and effective participation and leadership opportunities at all levels of political and economic decision-making, as well as recognition of unpaid care and domestic work.

Gender equality is not only a fundamental human right but also an essential condition for a prosperous, sustainable and peaceful world.

1 This section was edited by Miria Savioli with contributions from: Tania Cappadozzi and Maria Giuseppina Muratore.

Targets

Goal 5 is broken down into nine Targets, the last three refer to means of implementation.

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.

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.

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.

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.

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.

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.

Indicators released by Istat

Istat releases 20 statistical measures for Goal 5 (Table 5.1), referring to seven of the nine Targets.

Table 5.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SSDG 5.2.1 - Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age		
Proportion of women aged 16-70 subjected to physical or sexual violence by a partner or previous partner in the last 5 years (Istat, 2014, %)	Proxy	4.9
Proportion of women aged 16-70 subjected rape or attempted rape by a partner or previous partner in the previous 5 years (Istat, 2014, %)	National context	0.6
Proportion of women aged 16-70 subjected to physical violence by a partner or previous partner in the previous 12 months (Istat, 2014, %)	Identical	1.6
Proportion of women aged 16-70 subjected to sexual violence by a partner or previous partner in the previous 12 months (Istat, 2014, %)	Identical	0.7
Proportion of women aged 16-70 subjected to physical or sexual violence by a partner or previous partner in the previous 12 months (Istat, 2014, %)	Identical	2.0
Proportion of women aged 16-70 subjected to psychological violence by a current partner in the previous 12 months (Istat, 2014, %)	Proxy	9.2
SDG 5.2.2 - Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence		
Proportion of women aged 16-70 subjected to physical or sexual violence by a man other than intimate partner in the previous 5 years (Istat, 2014, %)	Proxy	7.7
Proportion of women aged 16-70 subjected to sexual violence by a man other than intimate partner in the previous 12 months (Istat, 2014, %)	Identical	1.6
Proportion of women aged 16-70 subjected rape or attempted rape by a man other than intimate partner in the previous 5 years (Istat, 2014, %)	National context	0.6
Anti-violence centers: rate women aged 14 and over (Istat, 2017, per 100,000)	National context	0.9
SDG 5.4.1 - Proportion of time spent on unpaid domestic and care work, by sex, age and location		
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 (Istat, 2018, %)	National context	73.8
Proportion of time spent on unpaid domestic and care work (Istat, 2013-2014, %)	Identical	13.5
Proportion of time spent on unpaid volunteer work (Istat, 2013-2014, %)	National context	0.8
SDG 5.5.1 - Proportion of seats held by women in national parliaments and local governments		
Proportion of seats held by women in Senate of the Republic and the Chamber of Deputies (Istat, 2018, %)	Proxy	35.4
Proportion of seats held by women in Regional Councils (Individual regional councils, 2019, %)	Proxy	21.2
SDG 5.5.2 - Proportion of women in managerial positions		
Proportion of women in decision-making bodies (Privacy Authority, AgCom, Antitrust Authority, Constitutional Court, Superior Council of the Magistracy, Ambassadors, CONSOB, 2019, %)	Proxy	15.8
Proportion of women in the boards of companies listed in stock exchange (CONSOB, 2018, %)	Proxy	36.0
SDG 5.6.1 - Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care		
Abortion rate of women aged 15-49 (Istat, 2017, per 1,000)	National context	6.0
SDG 5.b.1 - Proportion of individuals who own a mobile telephone, by sex		
People aged 6 and over who use their mobile phone at least a few times a year (Istat, 2018, %)	Proxy	91.6
People aged 16-74 who used internet once a week (including every day) in the last 3 months (Istat, 2018, %)	National context	72.4

For Italy, monitoring of Goal 5, 'Achieve gender equality and empower all women and girls', is concentrated first of all on physical, sexual or psychological violence suffered by women at the hands of a partner or ex-partner, as well as physical violence inflicted by a non-partner man. The presence of women in Parliament and local governments and female employment

in top leadership positions (decision-making bodies and boards of companies listed in stock exchange), as well as unpaid domestic and care work, unpaid volunteer labour, sexual and reproductive health and the use of digital technologies are also monitored.

Further breakdowns useful to assess the degree of attainment of gender parity are also included in the rest of the indicators for monitoring the SDGs: for example, for indicators related to education (Goal 4), employment (Goal 8) and homicides (Goal 16).

Focus

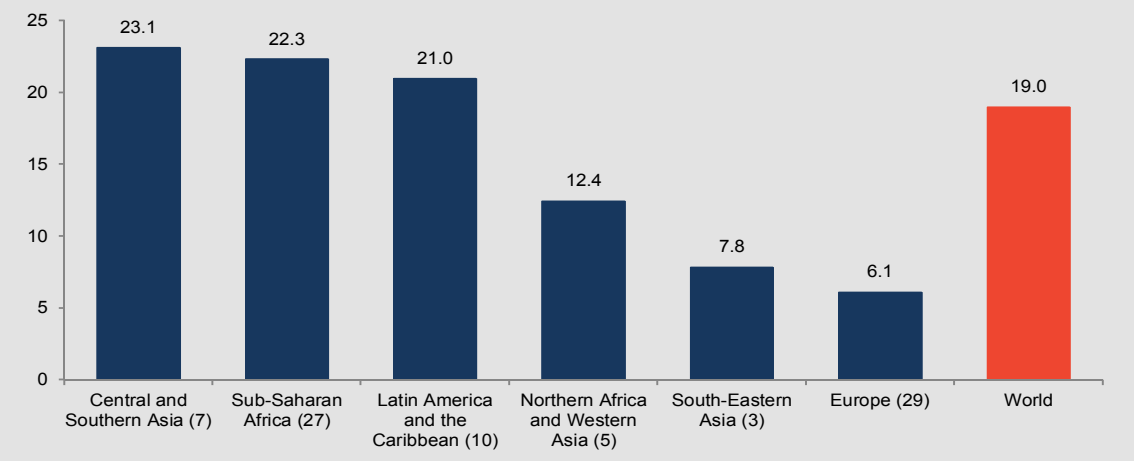
SDG 5.2.1 - Proportion of ever-partnered women and girls aged 15 years and older subjected to physical, sexual or psychological violence by a current or former intimate partner in the previous 12 months, by form of violence and by age

SDG 5.2.2 - Proportion of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months, by age and place of occurrence

Physical and sexual violence against women and girls is present in all countries, and in a majority of cases the abuser is a partner. The most extreme cases of violence against women can lead to death. In 2012, almost half of women who were victims of intentional homicide worldwide were killed by a partner or family member, compared to 6% of male victims.

According to surveys carried out between 2005 and 2016 in 87 countries, 19% of women aged 15-49 have suffered physical or sexual violence by a partner or ex-partner in the 12 months before the interview[2].

Figure 5.1 - Women and girls aged 15-49 subjected to physical or sexual violence by a partner or ex-partner in the 12 months before the interview. Years 2005-2016 (latest available) (per 100 women and girls aged 15-49)



Source: https://unstats.un.org/sdgs/report/2017/goal-05/
(a)The graphic shows data for 81 countries for the 2005-2016 period. The number of countries in each region is indicated in parentheses. Data are not available for North America. Oceania is not represented in the graphic because data for Australia and New Zealand are not available.

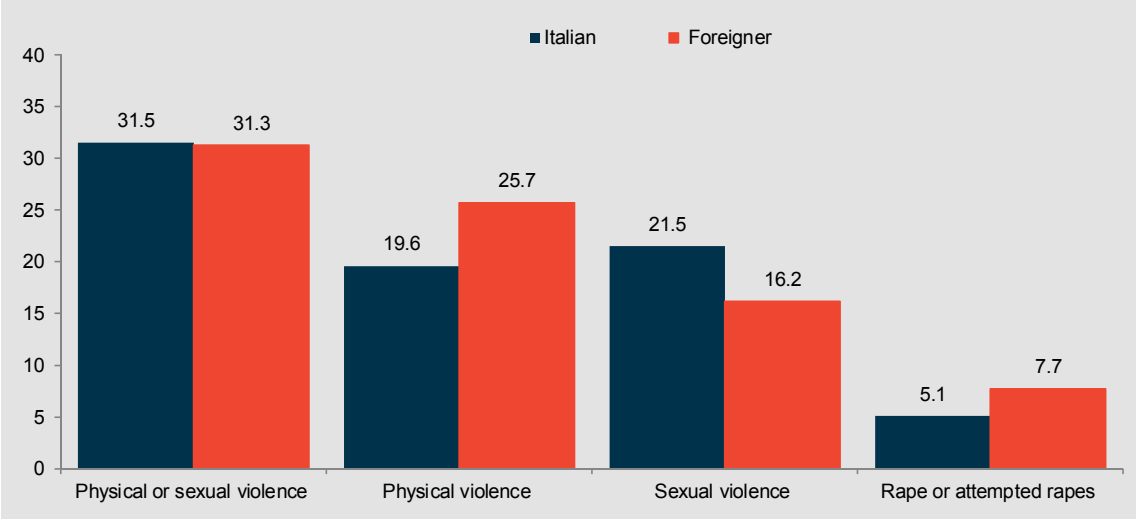
2 Source: https://unstats.un.org/sdgs/report/2017/goal-05/.

The prevalence of violence against women varies between the different geographical areas. The lowest rates are found in Europe where, in the 29 countries with available data, the average is 6.1%, while in Central and Southern Asia the value is 23.1%.

In Italy, the Women's Safety survey carried out in 2014 shed light on how violence against women is a widespread phenomenon: 6,788,000 women have suffered some kind of physical or sexual violence in their lives, 31.5% of women 16 to 70 years old. Partner or ex-partner commit the most serious violence: 62.7% of rapes suffered during a lifetime were committed by a partner or ex-partner, while a majority of cases of sexual abuse were committed by strangers (76.8%).

The share of foreign women who have declared to have suffered physical or sexual violence in the course of life it was equal to 31.3%, a value almost identical to Italian women (31.5%). However, some differences emerge: physical violence is reported more frequently from foreign women (25.7% against 19.6%), while sexual violence from Italian women (21.5% against 16.2%). Foreign women are more frequently victims of severe forms of violence, such as rapes and attempted rapes (7.7% and 5.1%). Considering the first six citizenships of foreign women in Italy in 2014, the largest group of victims of violence are Moldavian women (37.3%), followed by Romanians (33.9%) and by Ukrainians (33.2%). Among the Moroccan women (21.7%), Albanians (18.8%) and Chinese (16.4%) lower percentages are recorded[3].

Figure 5.2 - Women and girls aged 16-70 subjected to physical or sexual violence in their lives by citizenship. Italy. Year 2014 (per 100 women aged 16-70)



Source: Istat, Women's Safety survey

To understand the changes over time, it's possible to compare the data from the survey carried out in 2014, referring to violence suffered by women in the 5 years before the interview, with the data for the same length of time collected in the previous survey in 2006.

Between 2006 and 2014, there was a decline in the percentage of women subjected to physical or sexual violence in the five years preceding the interview (from 13.3% to 11.3%). The share of women subjected to physical or sexual violence by partners and ex-partners (since 6.6% to 4.9%) decreases, as well as the violence by non-partners (from 9.0% to 7.7%).

3 Source, Istat, *La violenza contro le donne dentro e fuori la famiglia. Anno 2014*, https://www.istat.it/it/archivio/161716.

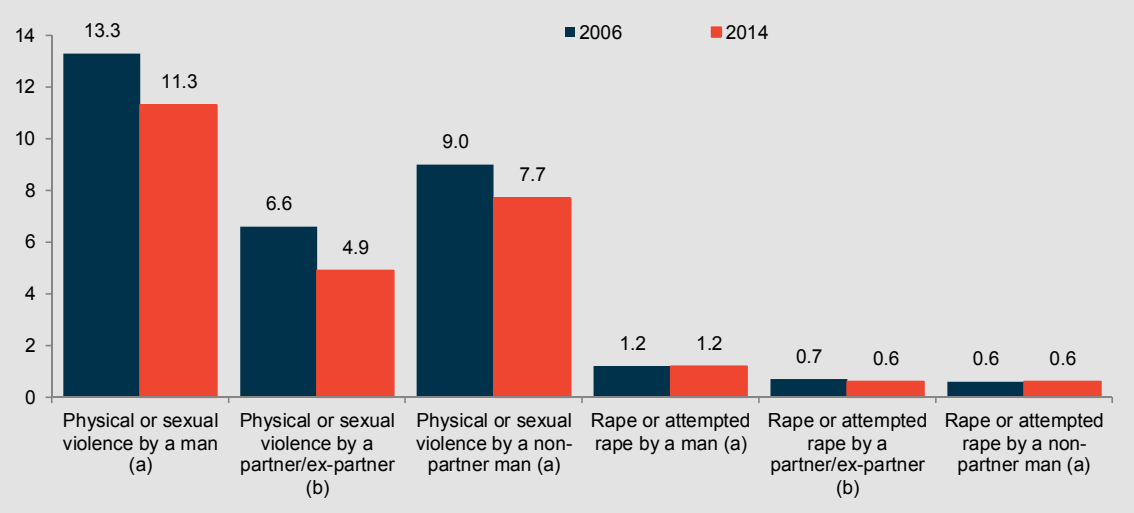
There is also a greater awareness among women: twice as many women think that the violence they suffered is a crime, including when the violence is committed by partners.

This is a product of action by health services, anti-violence centres, law enforcement, legislative progress and growing attention by the media: all elements that helped increase the social condemnation of the phenomenon of gender violence against women.

In 2017, in Italy 253 anti-violence centers were active and 49,152 women contacted them, and 59% of them began a path out of violence[4].

Nevertheless very negative signals remain. Indeed, the percentage of women victims of extreme violence (rapes and attempted rapes) and the incidence of more brutal forms of violence (use or threat of using a pistol or knife, respectively 1.2% and 0.4%); moreover the violence, is more serious, with an increase in episodes that caused injuries and a growing proportion of women who say they feared for their lives.

Figure 5.3 - Women and girls aged 16-70 subjected to physical or sexual violence by a man in the 5 years preceding the interview, by type of perpetrator. Italy. Years 2006 and 2014 (per 100 women 16-70 years old)



Source: Istat, Women's Safety survey
(a) Per 100 women 16 to 70 years old.
(b) Per 100 women 16 to 70 years old with partner or ex partner.

Other indicators

SDG 5.4.1 - Proportion of time spent on unpaid domestic and care work, by sex, age and location

The time spent on unpaid housework and caregiving undermines women's ability to engage in other activities, such as education and paid work.

Data for a subset of countries (mainly from Latin American and European countries) suggest this disparity increases during periods when women are most likely to have young children at home.

4 In 2018 Istat, for the first time, carried out a survey on the services offered in 2017 by anti-violence centers for women, in collaboration with the Department for Equal Opportunities, Regions, National Research Council. https://www.istat.it/it/violenza-sulle-donne/la-fuoriuscita-dalla-violenza/centri-antiviolenza.

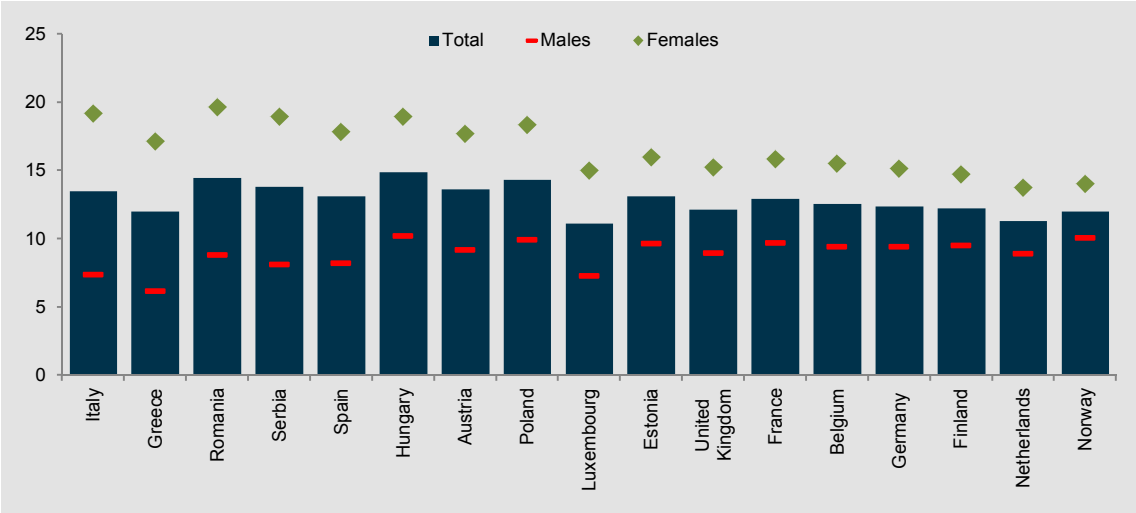
According to data from about 90 countries, from 2000 to 2016, on an average day, women spent about three times as many hours in unpaid domestic and care work as men, and significantly more if they had children[5].

In the European countries with available data, men spend less time than women on these activities. The amount of daily time spent on unpaid domestic and care work by women varies from 19.7% in Romania to 13.8% in the Netherlands, while for men it ranges from 10.2% in Hungary to 6.2% in Greece[6].

The gender gap is higher in Italy, Greece, Serbia and Romania, where the difference exceeds 10 percentage points. It is lower in Norway, the Netherlands, Finland and Germany (less than 6 percentage points).

In Italy, in 2013-2014 the amount of daily time spent on unpaid domestic and care work was 19.2% for women, versus 7.4% per men.

Figure 5.4 - Proportion of time spent on unpaid domestic and care work by the population 15 years and over in some European countries (a) **by sex. Various years** (b) (percentage of time per day)



Source: Eurostat, European Survey on Use of Time - 2018 Edition. http://appsso.eurostat.ec.europa.eu/nui/show. do?dataset=tus_OOage&lang=en
(a) The Use of Time survey was conducted on a voluntary basis, but it is only available for some of the EU countries.
(b) 2008-2009: Austria; 2009-2010: Estonia, Spain, France, Hungary, Finland; 2010-2011: Romania, Norway and Serbia; 2011-2012: Netherlands, Greece; 2012-2013: Belgium, Germany, Poland; 2013-2014: Italy (the Eurostat database contains the data from the 2008-2009 survey for Italy; here, it is updated with the data from the last survey, 2013-2014); 2014-2015: United Kingdom, Luxembourg.

The gender gap showed a slight decrease since 2002-2003 (from 14.3 to 11.8 percentage points) due to a reduction in the time women spent on unpaid domestic and care work and a slight increase in the time spent by men.

Despite this improvement, in 2013-2014 Italy was at the top of the ranking for the gender gap among the European countries with data available.

The percentage of time spent on unpaid domestic and care work by foreign citizens is slightly lower than that of Italian citizens. This characteristic is also confirmed by examining the data by gender: both women and foreign men spend less time than Italians on these activities.

5 Source: https://unstats.un.org/sdgs/files/report/2018/secretary-general-sdg-report-2018--EN.pdf, pag. 8.

6 Source: The information related to the time spent on unpaid domestic and care work is available only for some countries in the EU because the Use of Time survey was done on a voluntary basis. Source http://aDDSso.eurostat.ec.europa.eu/nui/show.do?dataset=tus 00aae&lana=en/.

National context's indicator - 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

Among couples with young children, the difficulty of reconciling family needs with working time is generally greater for women, for whom the lack of adequate welfare services can also mean choosing to leave work when a child is born.

The ratio between the employment rate for women 25-49 years old with pre-school age children and the rate for women without children is an indirect indicator of how labour is reconciled in with family needs, especially when there are young children.

The ratio constantly increased from 2004 to 2009, dropped in 2010, and then restarted growing until 2015. The last three years recorded another deterioration: in 2018, for every 100 childless women employed, there were 74 working mothers with young children (78 in 2015).

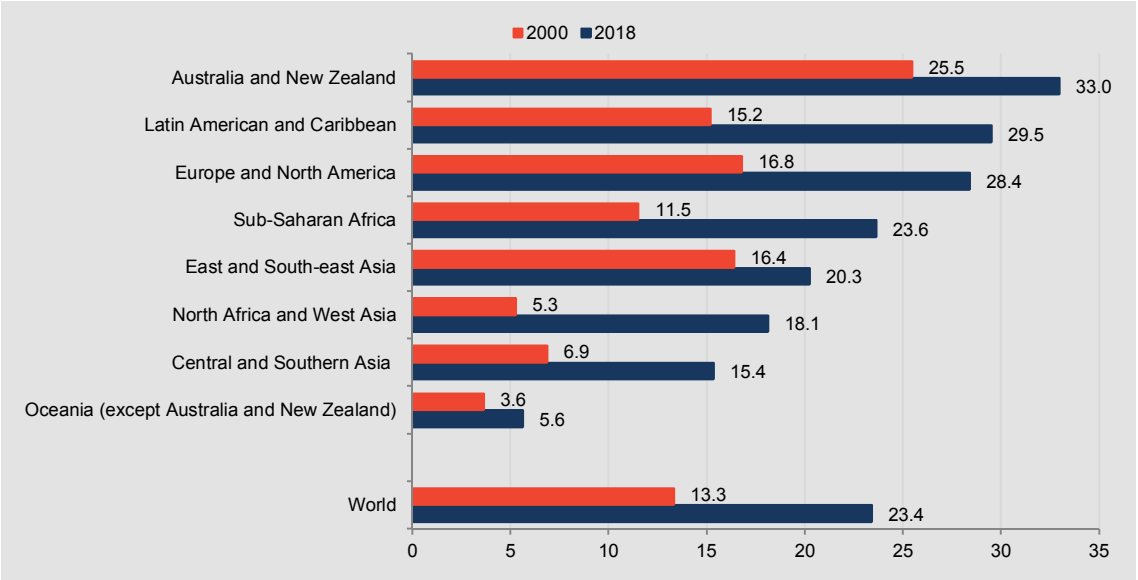
In 2018 the Central-northern regions confirmed a better situation with over 80 women with young children employed every 100 women without children, while in the South the value dropped to 65.

The situation is even more disadvantaged for foreign women: the relationship between women with small children employed and women employed without children amounted to 49.1%, compared to 78.8% for Italian women.

SDG 5.5.1 - Proportion of seats held by women in national parliaments and local governments

Political and economic power remains in the hands of men. In 2018, women's representation in Parliament in countries around the world was only 23.4%, just 10 percentage points higher than in 2000[7].

Figure 5.5 - Proportion of seats held by women in national parliaments. Years 2000 and 2018 (%)



Source: https://unstats.un.org/sdgs/indicators/database/

7 Source: https://unstats.un.org/sdgs/files/report/2018/secretary-general-sdg-report-2018--EN.pdf, page 8.

Even in the two most advanced regions in terms of women's representation (Australia and New Zealand; Latin America and the Caribbean), women held less than one out of three seats in Parliament. Northern Africa and Western Asia has made significant progress: the proportion of seats held by women increased nearly fourfold between 2000 and 2018. Nevertheless, in these geographic areas, women held less than one fifth of the seats in Parliament.

In the countries in the EU28 in 2018, less than one-third of the seats in national parliaments were held by women (29.9%), with a rather high variability between the different member states: in Sweden, almost half the seats were held by women, while in Hungary the ratio was almost four times lower[8].

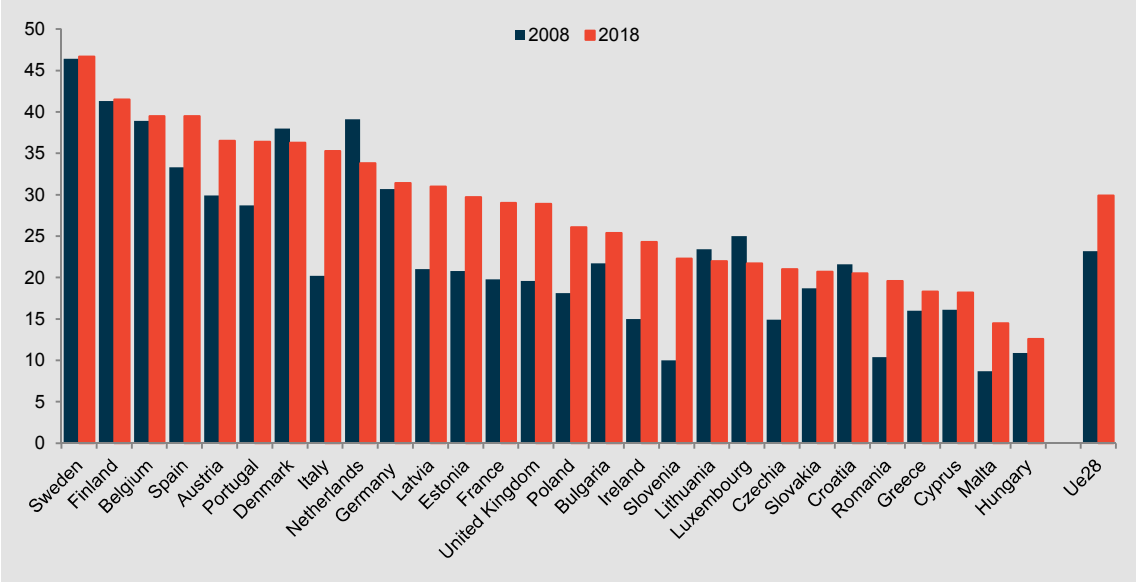
The EU average has been constantly increasing since 2003, when women were about one-fifth of the members of the national parliaments. In particular, between 2008 and 2018 the percentage of seats held by women increased in the majority of EU countries. Among the countries that recorded the highest growth, the first place is held by Italy, Slovenia and Latvia.

Despite this, in 2018 the number of men in national parliaments still remained very high, and is no country in the EU28 women held more seats than men.

In 2018, Italy with 35% of the seats held by women, is in 8th position, among Denmark and Netherlands, recovering the disadvantage of 2008, when it ranked 16th and earned 2 higher positions in the last year.

In the period 2003-2018, in Italy the proportion of seats held by women has increased a lot. If in 2003 Italy showed a much lower share of the EU28 average (10.2% compared to 20.5%), over the years Italy has recovered the disadvantage up to reach and exceed the EU28 average since 2013.

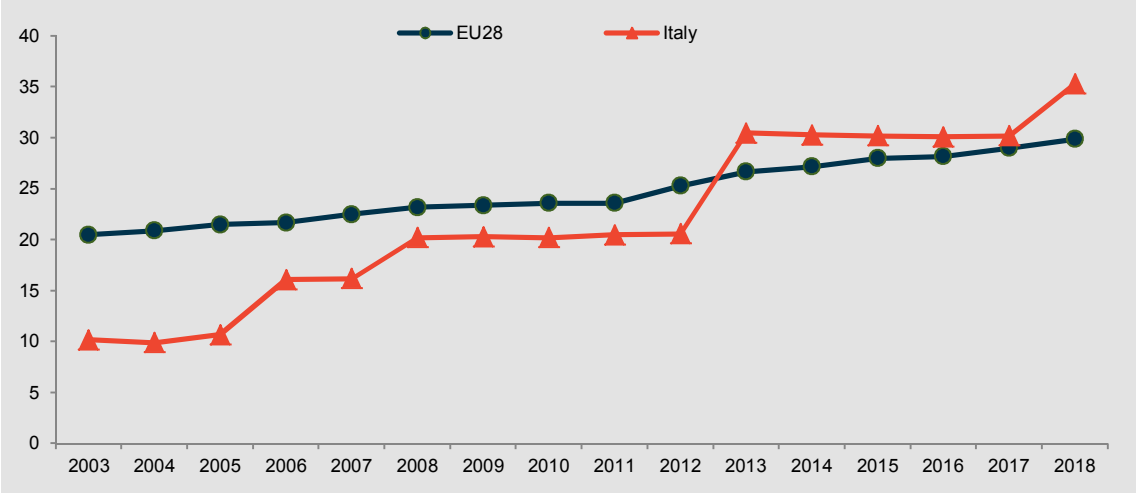
Figure 5.6 - Proportion of seats held by women in parliaments and national governments in EU28. Years 2008 and 2018
(% of seats)



Source: European Institute for Gender Equality (EIGE) (Eurostat data code: sdg_05_50)

8 Source: Eurostat, Sustainable development in the European Union, 2018.

Figure 5.7 - Proportion of seats held by women in parliaments and national governments. EU28 average and Italy. Years 2003-2018 (% of seats)



Source: European Institute for Gender Equality (EIGE) (Eurostat data code: sdg_05_50)

In Italy, the situation with women elected to the regional councils is much less advanced: in 2019, the female council members were only 21.2%, moderately up from 2012 (12.9%) and the South continues to have the most critical situation.

SDG 5.5.2 - Proportion of women in managerial positions

Women continue to be underrepresented in managerial positions. In the largest parte of the 79 countries with data from 2009 to 2016, less than 38% of senior- and middle-management positions were held by women. The lowest percentages are found in Northern Africa and western Asia and in Central and Southern Asia[9].

In 2018, 26.7% of the members of boards of directors of the corporations listed on the stock exchange in EU28 countries were women. The data shows an increase since 2008, when the percentage was at 10.8%[10].

In 2018 the share of members of the boards of directors of listed companies varies from 44% in France to 8% in Estonia.

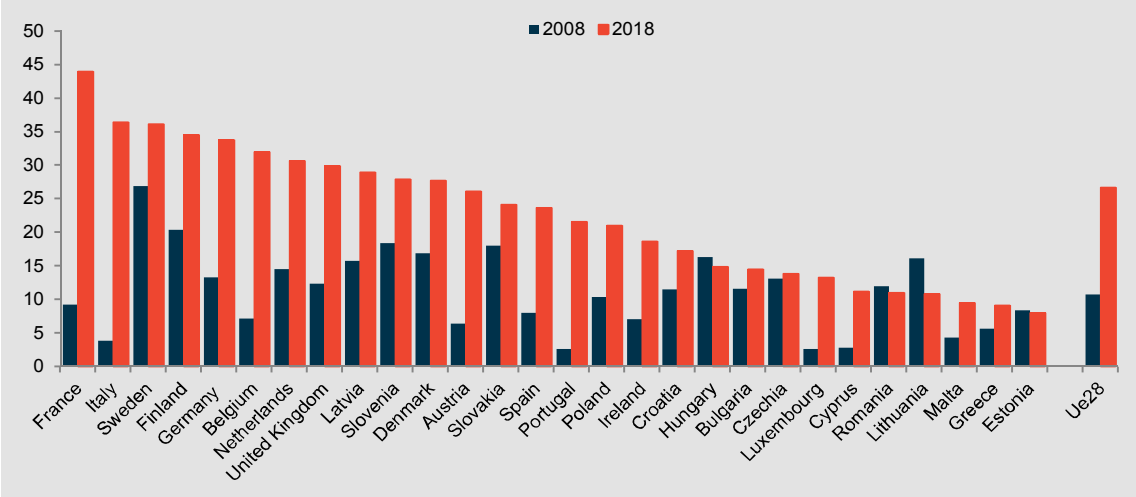
There are marked differences among the countries. The proportion of members of boards of directors of the corporations listed on the stock exchange varied from 43.4% in France to 7.4% in Estonia.

In the countries with binding legislative measures (Belgium, Germany, France and Italy), the number of women increased by 23.8 percentage points between 2010 and 2016; in countries without such measures, the increase was only 7.6 percentage points for the same period.

In 2018, Italy ranked at the top of the EU28 (2nd position) of women members of the boards of directors of listed companies, with a value far above the European average (Italy 36%, EU28 average 26.4%); it seems to be a strong recovery compared to 2008 when it was in 26th position.

9 Source: https://unstats.un.org/sdgs/files/report/2018/secretary-general-sdg-report-2018--EN.pdf, pae. 8.
10 Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=sdg_05_60&plugin=1.

Figure 5.8 - Proportion of women in boards of directors of corporations listed on stock exchange in EU28. Years 2008 and 2018 (%)

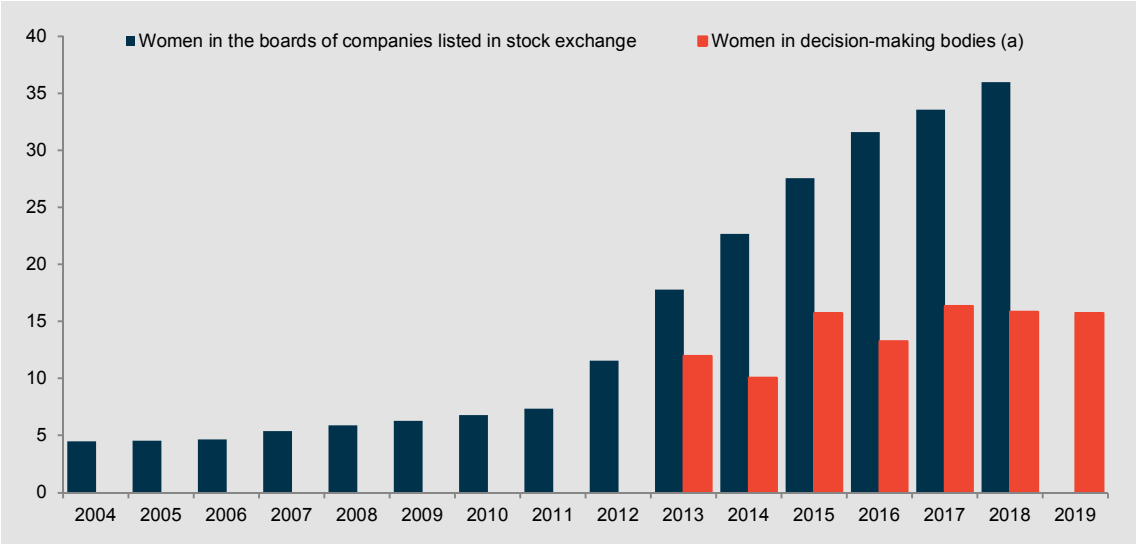


Source: European Institute for Gender Equality (EIGE) (Eurostat data code: sdg_05_60)

Italy was on the high end of the EU28 ranking (2nd position) with 36% of women members of boards of directors in corporations listed on the stock exchange. The value is much higher than the European average (26.4%). Italy shows a strong recovery compared to 2008, when it was in 26th place.

In Italy the growth has been constant over time, passing from 4.5% in 2004 to 7.4% in 2011. After the introduction of Law 120/2011 on equal access to administrative and oversight bodies of corporations listed on regulated stock exchanges, the presence of women on boards of directors of corporations listed on the stock exchange began to grow steadily. Between 2011 and 2018, the percentage grew from 7.4% to 36%, an increase of more than 28 percentage points.

Figure 5.9 - Proportion of women on boards of directors and decision-making bodies of corporations. Italy. Years 2004-2019 (%)



Source: Various - CONSOB
(a) Privacy Authority, AgCom, Antitrust Authority, Constitutional Court, Superior Council of the Magistracy, Ambassadors, CONSOB.

The trend for women in certain decision-making bodies (Privacy Authority, AgCom, Antitrust Authority, Constitutional Court, Superior Council of the Magistracy, Ambassadors, CONSOB) has been different: in 2019, the amount reached only 15.8%, with the values fluctuating over the years.

Indicator 5.6.1. - Proportion of women aged 15-49 years who make their own informed decisions regarding sexual relations, contraceptive use and reproductive health care

National context's indicator - Abortion rate of women aged 15-49

In the early 1980s, the abortion rate was 16 cases for every thousand women 15-49 years old. Until the mid-1990s, the decline was significant and regular, reaching 9 per thousand, where the rate stayed until 2005, then dropping again, less sharply, to the current levels.

In 2017, the rate of voluntary abortion was 6 cases per thousand women 15-49 years old.

Foreign women have an abortion rate two and a half times higher than that of Italian women (14.8 per thousand compared to 5.8 per thousand) even though they registered a much greater decrease over time: in 2005 the rate of abortion for the foreigners was 34.9 per thousand, while for Italian women it was 7.4 per thousand.

Since 2005, the drop has been significantly relevant among women 20-24 years old, an age range that had shown the highest rate. In 2017, women of 25-29 years old showed the highest value (10 per thousand).

SDG 5.b.1 - Proportion of individuals who own a mobile telephone, by sex

The mobile phone can contribute to the empowerment of women: it allows them to keep themselves in contact with family and friends, work relationships, financial transactions and save time in coordinating and managing daily activities. Despite the potential benefits, around 1.7 billion women in low and middle income countries do not own a cell phone[11].

Proxy indicator - People aged 6 and over who use mobile phones at least a few times a year

In Italy, the gender differences in the use of mobile phones, already very limited in 2010 (4.5 percentage points), fell further in 2018, reaching 2.5 percentage points (92.9% of males compared to 90.4% of females).

In 2018 there were no gender differences up to 64 years, while older women continue to be disadvantaged. In particular, 63.4% of women aged 75 and over used mobile phones, compared to a share that reaches 74.7% among males of the same age.

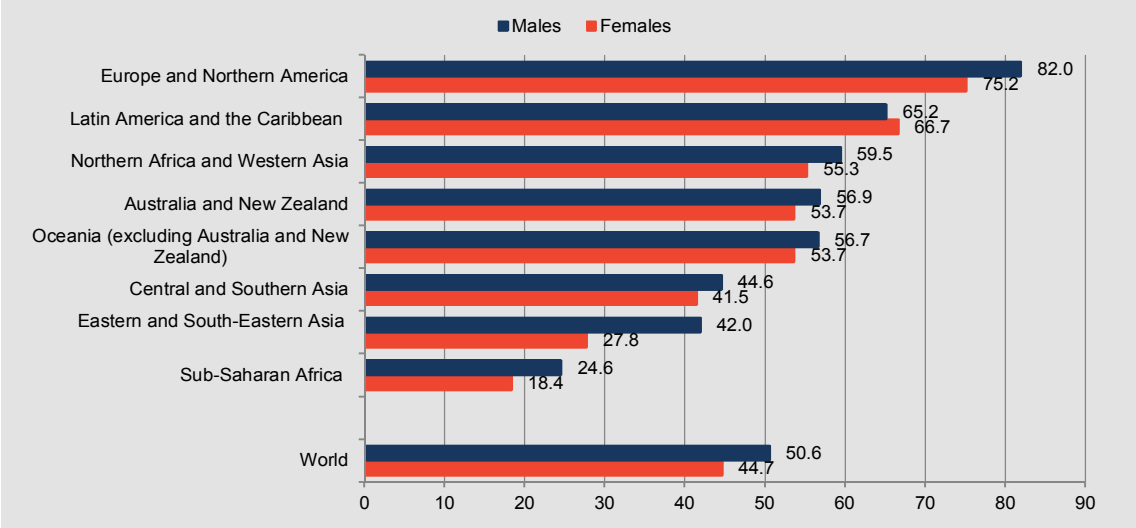
11 UN Women, Turning promises into action. Gender equality in the 2030 Agenda for Sustainable Development 2018, pag. 102, www.unwomen.org/sdg-report.

National context's indicator - People aged 16-74 who have used the Internet in the last three months at least once a week (including every day)

Progress in information and communication technologies (ICT) has changed the world, but the benefits are not equally distributed between men and women.

Indeed, strong gender differences in access to ICT and their use remain. In particular, Internet access has experienced a huge increase in recent years, but between women the share of users remains much lower than that recorded among men.

Figure 5.10 - Internet users by sex. Year 2017 (for 100 people of the same sex)



Source: ITU, 2017, UN Women, Turning promises into action. Gender equality in the 2030 Agenda for Sustainable Development 2018, www.unwomen.org/sdg-report, pag. 102.

In 2017, worldwide Internet use among women was almost 6 percentage points lower compared to men. East and South-east Asia had the largest gender gap with only 27.8% of women using the Internet compared to 42% of men.

In Europe and North America, where the largest share of the population has access to Internet, use among women stands at 75.2% compared to 82% of men. Only in Latin America and the Caribbean utilization rates for women are higher than those for women men (66.7% against 65.2%).

Since 2013, the gender gap has been narrowing in many regions, but it has expanded in Africa, where the gender gap increased by almost 5 percentage points. In the least developed countries, only one in seven women use the Internet compared to one in five men[12].

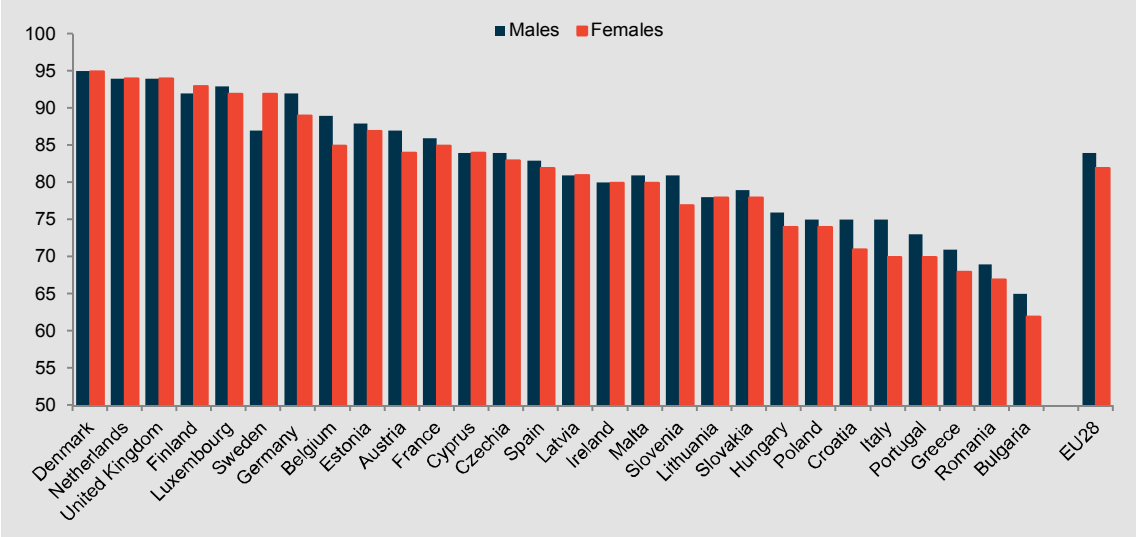
In the EU28 countries, in 2018, the gender gap in the use of the Internet was very small (2 points percentages). In seven countries gender equality has been achieved, while in Finland and Sweden the proportion of women using the internet is higher than that of men Italy is the country with the largest gap (5 percentage points), followed by Belgium, Slovenia and Croatia where the gap stands at 4 percentage points.

12 ITU, Facts and figures ICT 2017, https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.

In Italy the gender gap showed an improvement over time, going from 12 points percentages in 2010 at 5 points in 2018. The improvement is attributable in particular to the women aged 35-59 who made up most of the disadvantage.

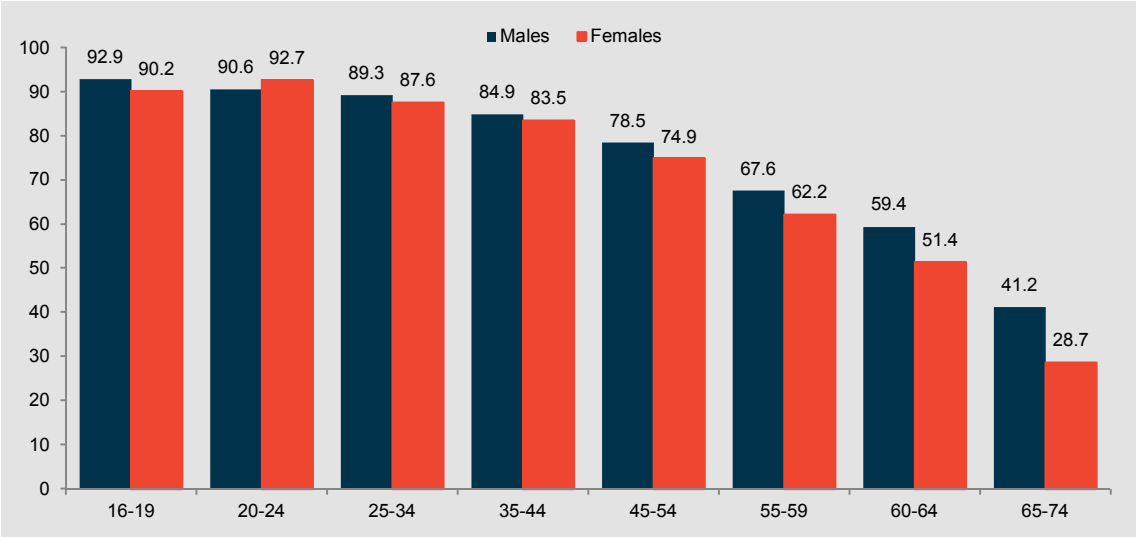
In 2018 the gender differences were null up to 44 years, then, starting from the age of 45 they registered a growing trend, reaching 8 percentage points among the population of 60-64 years and exceeded 12 points among the population of 65-74 years.

Figure 5.11 - People aged 16-74 who have used the internet in the last 3 months at least once a week (including every day) in the EU28 by sex. Year 2018 (%)



Source: Eurostat, Comunity survey on ICT usage in households and by individuals (online data code: isoc_ci_ifp_fu)

Figure 5.12 - People aged 16-74 who have used the internet in the last 3 months at least once a week (including everyday) in Italy by sex and age. Year 2018 (%)



Source: Istat, Comunity survey on ICT usage in households and by individuals

In brief

Violence against women decreases, but the severity increases and extreme violence remains stable.

There are important signs of improvement: proportion of women subjected to physical or sexual violence by partners, ex partners and by men other than partners decreases.

Nevertheless, strongly negative signs persist. The percentage of women who are victims of extreme violence (rape and attempted rape) and who are threatened with weapons is stable. The violence that has caused wounds and the proportion of women who claim to have feared for their lives increase.

Unpaid domestic and care work: the gender gap is wide but it decreasing

The proportion of time spent by women on unpaid domestic and care work is about 2.6 times higher than that of men, it was more than triple in 2002-2003. Nevertheless, in 2013-2014 Italy had the highest gender gap in EU countries with data available.

Domestic work and care: employment rate for women with pre-school-age children worsened in the last three years

The 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, who had registered between the 2004 and 2015 a positive trend, Nevertheless it has decreased in the last three years, in particular in the regions of southern Italy.

Women in decision-making, economic and political positions: positive signs, but their presence remains low

The presence of women in decision-making, economic and political places is on the rise. However, the presence remains low: just over one-third in the national Parliament and in listed companies, one fifth in regional councils and less than one fifth in decision-making bodies.

Women's sexual and reproductive health and reproductive rights: the rate of voluntary abortions is dropping consistently

The rate of voluntary abortions continues to fall over time. From the early 1980s to the mid-1990s, the decrease was significant and regular, reaching the rate of 9 per thousand, then the phenomenon was stable until 2005, afterwards it continued to drop even at a less sharp pace, up to the current levels.

Use of digital technologies: disadvantage for elderly women

In Italy the gender gap in the use of the Internet showed an improvement between 2010 and 2018.

The improvement is attributable in particular to women aged 35-59, who made up most of the disadvantage comparing to men.

In 2018 the gender differences were null up to 44 years but exceeded 12 points among the population aged 65-74 years.

SDG Ref.	INDICATORS	VARIATION			
		Long term	Medium term		Short term
		2007-2017	2007-2012	2012-2017	2016-2017
5.2.1					
	% women aged 16-70 subjected to physical or sexual violence by a partner or previous partner in the last 5 years	a			
	% women aged 16-70 subjected to psychological violence by a current partner in the previous 12 months	a			
5.2.2					
	% women aged 16-70 subjected to physical or sexual violence by a man other than intimate partner in the previous 5 years	a			
	% women aged 16-70 subjected rape or attempted rape by a man other than intimate partner in the previous 5 years	a			
5.4.1					
	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	b	c	d	e
5.5.1					
	% seats held by women in Senate of the Republic and the Chamber of Deputies	b	f	g	
	% seats held by women in Regional Councils			h	i
5.5.2					
	Proportion of women in the boards of companies listed in stock exchange	b	c	d	e
5.6.1					
	Abortion rate of women aged 15-49				
5.b.1					
	People aged 6 and over who use their mobile phone at least a few times a year				
	People aged 16-74 who used internet once a week (including every day) in the last 3 months	l			

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2006-2014
(b) 2008-2018
(c) 2008-2013
(d) 2013-2018
(e) 2017-2018
(f) 2008-2014
(g) 2014-2018
(h) 2014-2019
(i) 2018-2019
(l) 2010-2018

GOAL 6

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL[1]

Goal 6 is focused on the availability of water, a vital and essential resource for all forms of life. Making water accessible for the population and ecosystems is crucial to guarantee their survival. The planet offers sufficient potable water, but in many areas of the world millions of people, especially children, still die from diseases due to unsafe water supplies, insufficient sanitary facilities and inadequate levels of hygiene. Climate changes and the growing pressure of demand exacerbate the problem of water availability and the forecasts for the future are hardly encouraging. Italy is not exempt from this problem, having already experienced severe water shortages, especially in some part of the country. To this serious and persistent inefficiencies in the water supply network are added, that still cause waste and substantial losses of this valuable asset. The management of the entire water cycle must therefore unavoidably be made more efficient by investing in various activities: from water withdrawals to distribution net and wastewater treatments. The efficiency of water use in all sectors (civil, industrial, energy, farming) must be improved by activating appropriate monitoring systems, avoiding waste, and creating investments in maintenance and development and in incentives for recycling and collection. To ensure adequate levels of quality, water's return to the environment needs to be free of pollutants. The availability of clean water for health, cleanliness and hygiene must be ensured; ecosystems must be safeguarded.

1 This section was edited by Giovanna Tagliacozzo, with contributions from Simona Ramberti.

Targets

Goal 6 is broken down into eight Targets, the last two refer to means of implementation.

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all.

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.

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.

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

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, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.

6.b Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.

Target 6.6 on the extent of water-related ecosystems should be achieved by 2020.

Indicators released by Istat

Istat releases fourteen statistical measures for Goal 6, referring to five of the eight Targets.

Table 6.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 6.1.1 - Proportion of population using safely managed drinking water services		
Water supplied per capita (Istat, 2015 litres/resident/day)	In the national context	220
Households that do not feel safe drinking their tap water (Istat, 2018, %)	In the national context	29.0
Households that complain of irregularity in the water supply (Istat, 2018, %)	In the national context	10.4
SDG 6.3.1 - Proportion of wastewater safely treated		
Sewage treatment (Istat, 2015, %)	Partial	59.6
SDG 6.3.2 - Proportion of bodies of water with good ambient water quality		
Coastal bathing waters (Istat - based on data from the Ministry of Health, 2017, %)	Partial	66.9
Quality of ecological status and chemical status of surface waters (Ispra, 2010-2015)	Partial	(*)
Quality of chemical status and quantity of groundwater (Ispra, 2010-2015)	Partial	(*)
Quality of ecological status and chemical status of transitional waters (Ispra, 2010-2015)	Partial	(*)
Quality of ecological status and chemical status of coastal marine waters (Ispra, 2010-2015)	Partial	(*)
Percentage of water bodies that have achieved the objective of ecological quality on the total water bodies of surface waters (rivers and lakes) (Ispra, 2010-2015)	Partial	41.7
SDG 6.4.1 - Change in water-use efficiency over time		
Urban water supply network efficiency (Istat, 2015, %)	Proxy	58.6
SDG 6.6.1 - Change in the extent of water-related ecosystems over time		
Wetlands of International Importance (Ispra, 2018, count)	In the national context	65
Wetlands of International Importance (Ispra, 2018, hectares)	In the national context	80,863
SDG 6.a.1 - Amount of water-and sanitation-related official development assistance that is part of a government-coordinated spending plan		
Water-and sanitation-related ODA that is part of a government-coordinated spending plan (Ministry of Foreign Affairs and International Cooperation, 2017, millions of euros)	Identical	16.18

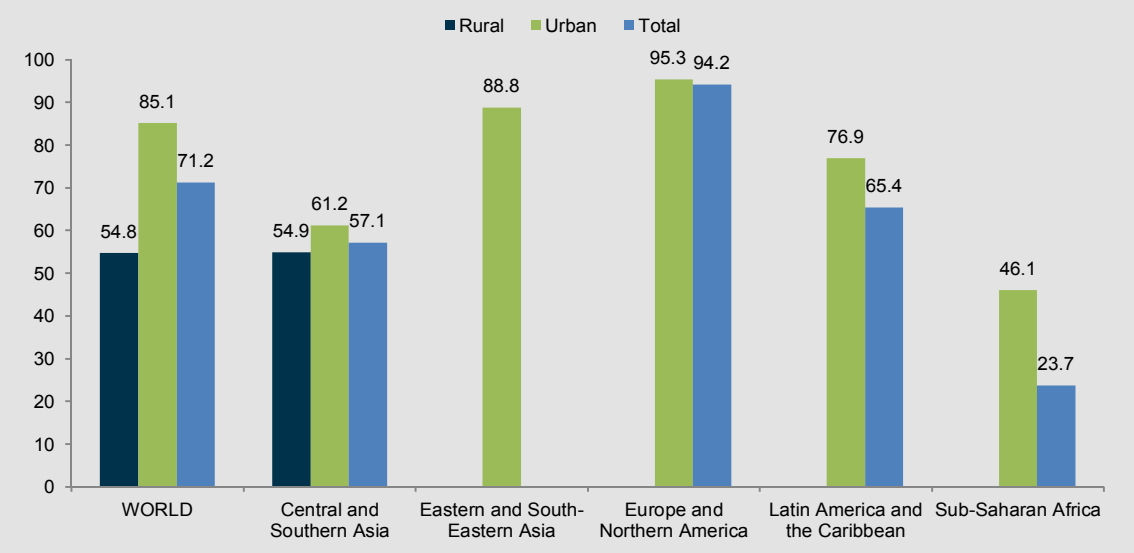
(*) Please, refer to the data table.

Focus

SDG 6.1.1 - Proportion of population using safely managed drinking water services

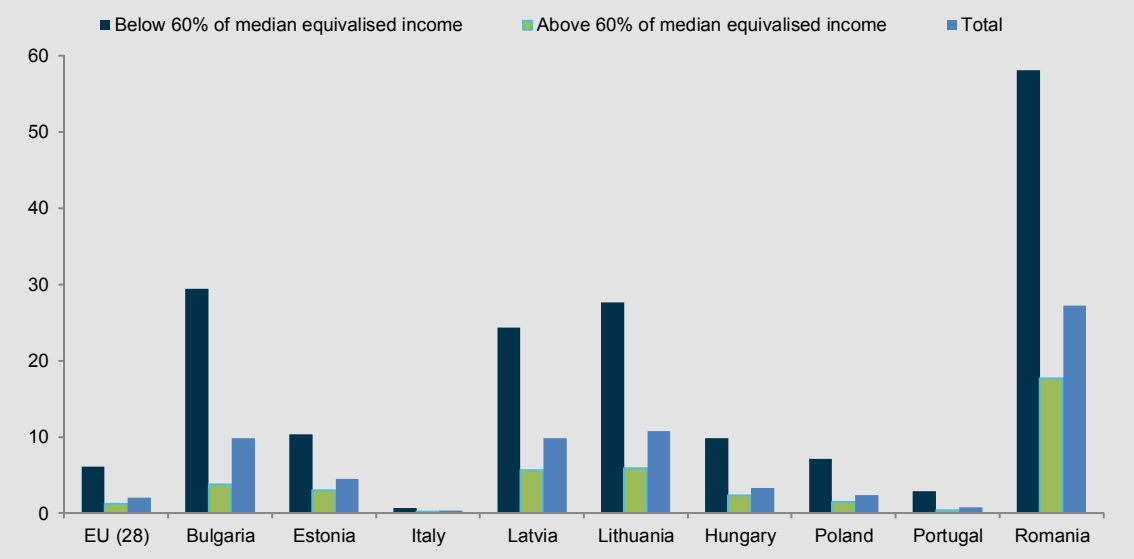
Worldwide, 70% of the population has access to safely managed potable water services; in rural areas, the portion of the population served drops to 55%. In rural areas of sub-Saharan Africa, only about one-fifth of the population has access to water (Source: UN, 2015) (Figure 6.1).

Figure 6.1 - Proportion of population using safely managed drinking water services, per urban and rural region. Year 2015 (%)



Source: Un - WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (2017)

Figure 6.2 - Population having neither a bath, nor a shower, nor indoor flushing toilet in their household by poverty status. Year 2017 (%)



Source: Eurostat

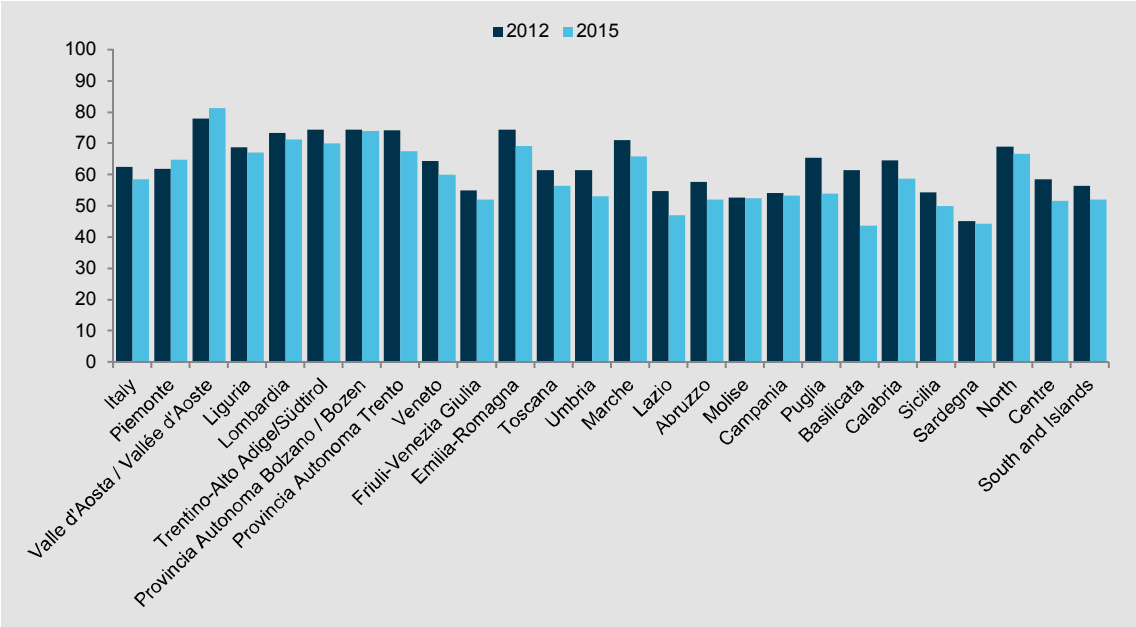
In Europe (EU28), despite the significant decrease in the phenomenon over time, in some countries there is still a share of the population without sanitary in their homes. The percentage of the population without services is even higher among the population groups living in households with an income below 60% of the median equivalised income (Figure 6.2).

In Italy, almost all the population has access to water resources and sanitary in their homes. However, in some parts of the country and during some periods of the year, there are increasingly frequent episodes of water crises, with consequent problems in the regularity and quality of the supply. During 2017, for example, there was an overall 39.6% reduction in the average flow rates of the main Italian rivers (Po, Adige, Arno and Tevere), compared to 30-year period 1981-2010[2].

Of the 28 EU-countries, Italy has the greatest withdrawal of water for potable use per capita: 156 cubic metres per resident in 2015[3].

9.5 billion cubic metres of water were taken for potable use, the majority (84.3%) is from groundwater. The volume entering the network fell by from the quantity taken for reasons ascribable to losses[4]. Of the 8.3 billion cubic metres of water taken into municipal potable water networks, only 4.9 were supplied to users for authorised uses[5], corresponding to 220 litres per resident per day. Overall, half of the volume of water taken from the source (47.9%) does not reach the end users due to water leaks from the supply and distribution networks.

Figure 6.3 - Urban water supply network efficiency, by region. Years 2012 and 2015 (%)



Source: Istat

2 World Water Day: Istat statistics. Reference period, years 2015-2017. Publication date, 22 March 2018 https://www.istat.it/it/archivio/210384.

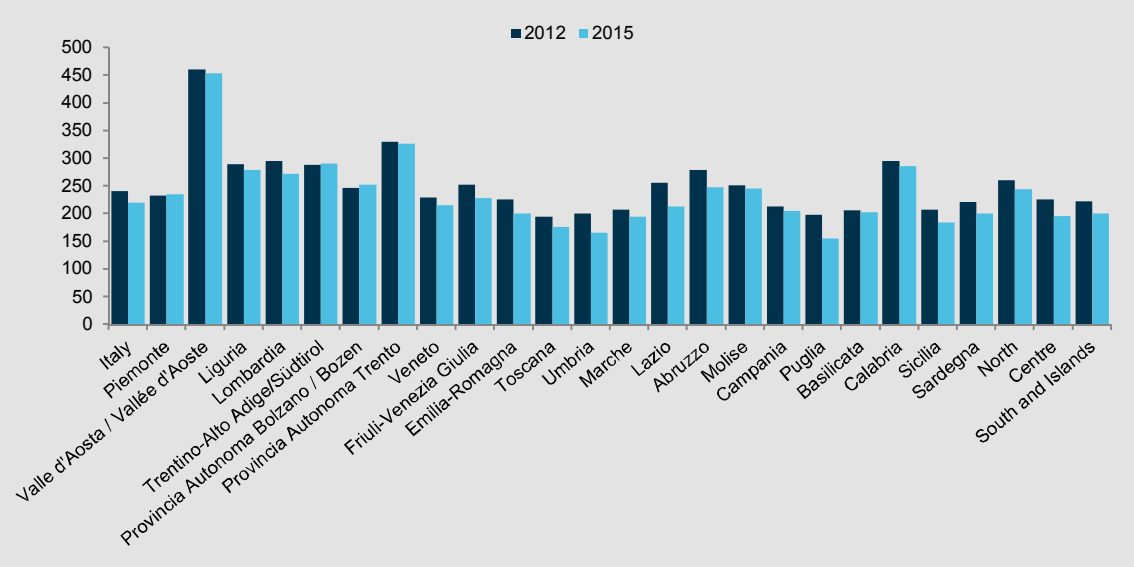
3 World Water Day: Istat statistics. Reference period, years 2015-2018. Publication date, 22 March 2019 https://www.istat.it/it/archivio/228753.

4 Water returned to the environment due to exceeding the storage capacity.

5 The volume of water taken for authorised uses includes public uses such as street cleaning, water in schools and hospitals, watering public green spaces and fountains.

The indicator of efficiency in the distribution network, represented by the volume of water supplied to users on that entering the network, shows a worsening, with a particular decrease from 62.6% in 2012 to 58.6% in 2015[6]. The problem of waste is relevant and persistent throughout the country.

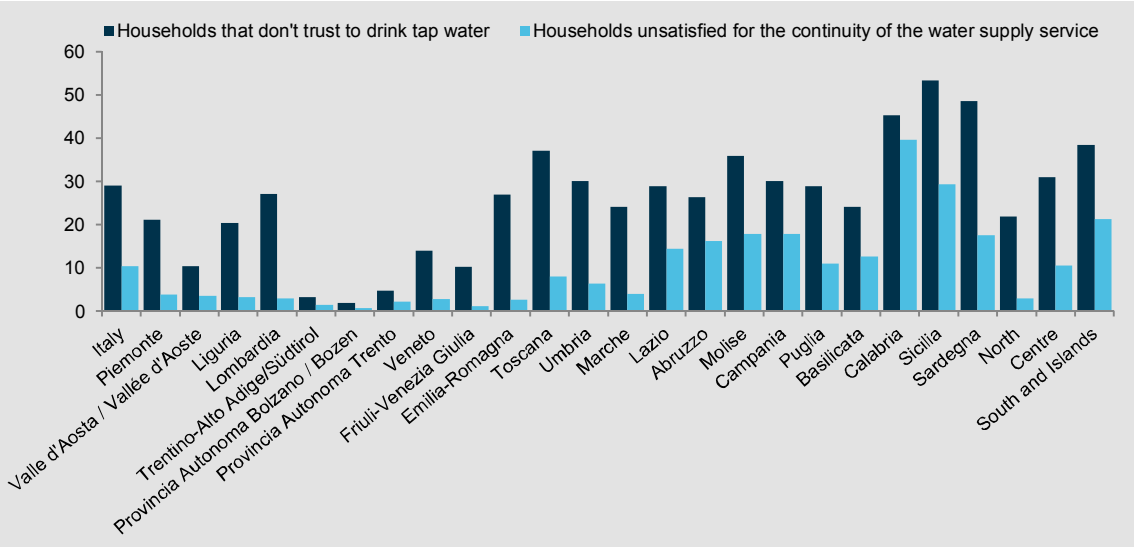
Figure 6.4 - Water supplied per capita, by region. Years 2012 and 2015 (litres per capita per day)



Source: Istat

In 2018, 10.4% of Italian households complained of irregularities in the service of water supply in their homes, a share still increasing compared to previous years. The percentage of families who declare that they do not trust to drink tap water is stable (29.0%).

Figure 6.5 - Households that don't trust to drink tap water and Households unsatisfied for the continuity of the water supply service, by region. Year 2018 (%)



Source: Istat

6 Istat, Urban Water Census. Reference period, year 2015. Publication date, 14 December 2017 http://www.istat.it/it/archivio/207497.

Other Indicators

SDG 6.3.1 - Proportion of wastewater safely treated

To ensure availability and quality of water over time for all types of uses (civil, irrigation, livestock, industrial processes, energy production), it is necessary to plan for the repeatability of the water usage cycle: from mandatory supplies to the sustainability of natural resources, to efficient uses and returning the water to the environment by appropriate treatment. Water is a renewable resource that is taken from the environment in a higher-quality form and then is returned in a lower-quality form. The possibility of finding usable water again in a safe way depends on the quality when the water is returned to the environment. Wastewater treatment is crucial in returning water to the environment. The efficiency of the treatment depends on the adequacy of the plant for the volume of waste water produced by the population, and on the type of treatment. In 2015, Italy had 17,897 urban wastewater treatment plants.

The percentage of pollutants of civil origin (in terms of resident equivalents[7]) flowing into secondary or advanced purification plants, which are 44.2% of the total, is 59.6% of the potential burden of pollutants generated in the country. This indicator showed a slight improvement over previous years, with an increase of two percentage points over 2012 and six percentage points over 2005.

SDG 6.3.2 - Proportion of bodies of water with good ambient water quality

In the context of Target 6.3, which aims to monitor the improvement of water quality by reducing pollution[8], the indicator on the ecological status of inland surface waters[9] describes the quality of the structure and functioning of aquatic ecosystems.

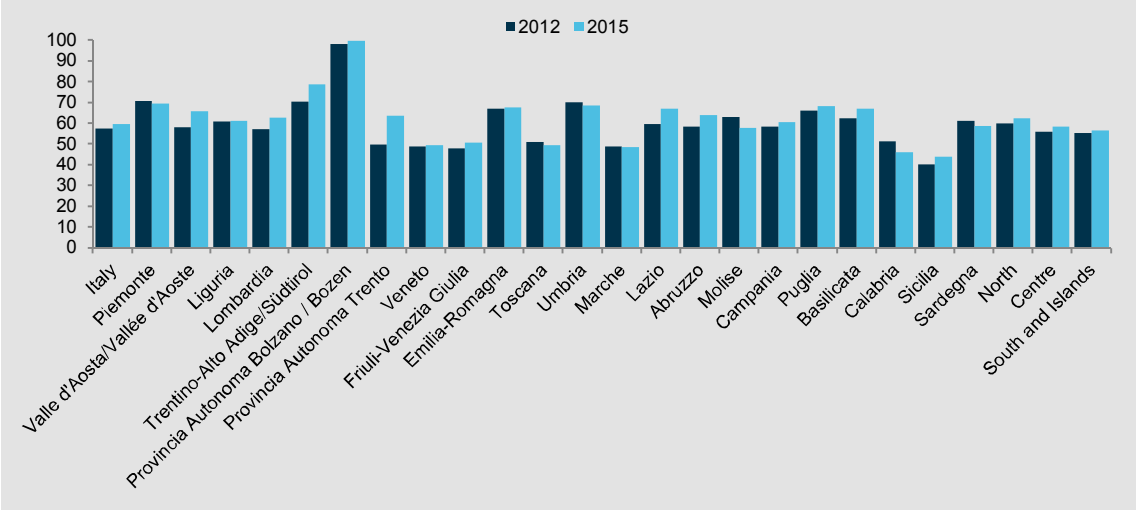
The legislation consider a selection of biological quality elements (EQB10) to be monitored in the different water bodies on the basis of objectives and assessment of pressures and impacts. In addition to the EQBs, other complementary elements are monitored: the quality index of the components chemical-physical properties of rivers (LIMeco) or lakes (LTLeco), specific pollutants that are not included in the priority list and the hydro morphological elements. The ecological status indicator measures the percentage of water bodies that have reached the ecological quality Target (high or good) for all surface water bodies (rivers and lakes). The survey, referring to the period 2010-2015, records that in Italy 41.7% of rivers and lakes (17.6%) reach the ecological quality objective.

7 Resident equivalents: unit of measurement conventionally used to express the organic, biodegradable polluting burden incoming to the purification plant, according to this equivalence: 1 resident equivalent = 60 grams/day of BOD5 (biochemical oxygen demand in 5 days). Civil resident equivalents are related to the polluting burden produced by resident inhabitants (inhabitants who have their normal dwelling in the area served by the purification plant), by non-resident inhabitants (inhabitants who, while not resident, are occasionally present in the area served by the purification plant) and by productive businesses with fewer than six employees. Industrial resident equivalents are related to the pollution load produced by manufacturing businesses with at least six employees.

8 By 2030, improve water quality by reducing pollution, eliminating uncontrolled discharge practices and minimizing the release of chemicals and hazardous materials, halve the percentage of non-hazardous wastewater.and substantially increase recycling and safe re-use globally.

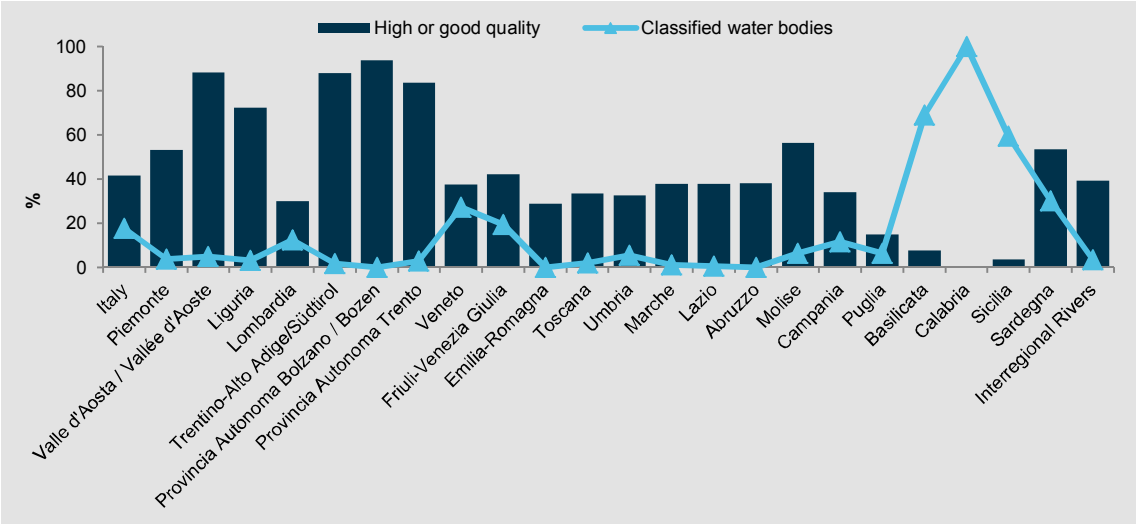
9 D.Lgs. 152/2006.

Figure 6.6 - Share of organic biodegradable load collected in urban wastewater treatment plants with secondary or advanced treatment, compared to total organic civil load potentially produced - Years 2012 and 2015 (%)



Source: Istat

Figure 6.7 -Percentage of water bodies that have achieved the objective of ecological quality on the total water bodies of surface waters (rivers and lakes). Years 2010-2015 (%)



Source: Ispra

In brief

Worldwide, 70% of the population has access to safely managed potable water services. In some EU28 countries there is still a share of the population without sanitation in their homes.

In Italy, almost all of the population has access to water resources and sanitation.

Italy has the highest abstraction of drinking water per capita among the EU28 countries: 156 m³ per inhabitant in 2015.

Of the 9.5 billion m³ of water withdrawn for drinking use, only 8.3 billion were introduced into the municipal drinking water distribution networks. Of these, only 4.9 billion were supplied to users, corresponding to 220 litres per inhabitant per day.

The efficiency of the drinking water distribution network is worsening. The share of water introduced into the network that reaches end users has fallen from 62.6% in 2012 to 58.6% in 2015.

In 2018, 10.4% of Italian households complained of irregularities in the service of water supply in their homes, a share still increasing compared to previous years. **The percentage of families who declare that they do not trust to drink tap water is stable** (29.0%).

In Italy, 17,897 urban wastewater treatment plants are in operation (2015). The percentage (in terms of population equivalents) of **pollutant loads of civil origin that flow into secondary or advanced plants, which represent 44.2% of the treatment plant, is 59.6% of the potential pollutant loads generated** on the territory. This figure is slightly better than in previous years, with an increase of two percentage points compared to 2012 and six percentage points compared to 2005.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
6.1.1					
	Water supplied per capita	a	b	c	
	Households that do not feel safe drinking their tap water			d	e
	Households that complain of irregularity in the water supply			d	e
6.3.1					
	Sewage treatment	a	b	c	
6.3.2					
	Coastal bathing waters			f	
6.4.1					
	Urban water supply network efficiency	a	b	c	

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2005-2015
(b) 2008-2012
(c) 2012-2015
(d) 2013-2018
(e) 2017-2018
(f) 2013-2017

GOAL 7

ENSURE ACCESS
TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL[1]

The Goal of ensuring 'universal access to affordable, reliable, sustainable and modern energy for all' is especially relevant for enabling inclusion and fairness in use of energy resources and for the positive returns that a more efficient and rational use of these resources can have on both economic and social development and in terms of energy and environmental sustainability. The use of inefficient and unsafe technologies and 'unclean' fuels indeed affects the quantity and quality of energy consumption, incurring significant social, economic and environmental costs. This is not only in terms of the continuing depletion of non-renewable energy resources, but also with respect to health risks tied to emissions of harmful gases, both domestically and in the air. From this point of view, there is a great disparity of opportunity globally and especially between urban and rural areas and between more and less developed countries, all to the advantage of the former. On the other hand, the increase in energy consumption from renewable sources and improvements in energy efficiency are very relevant Targets for the most developed economies, which indeed are often among those most energy intensive.

The fight against climate change represents a global challenge that requires first, and rapidly, a transition to a low-carbon economy. It is necessary that this transition is fair, in the name of solidarity and protection of human and worker rights, as required by the United Nations Framework Convention on climate change (COP-24) of December 2018. Preservation and creation of decent jobs are necessary to ensure public support for economies' transformation process in line with 2015 Paris Agreement. The transition to a greener economy, able to improve social well-being and, at the same time, guarantee economic competitiveness and environmental protection, requires a redesign of the relationship between energy and economic activities. This involves the evolution from a system of energy-intensive and non-sustainable production to a new model of economic development based on energy savings and diversification of energy sources, in order to protect natural resources and reduce environmental impacts.

1 This section was edited by Paola Ungaro.

Targets

Goal 7 is broken down into five Targets; two refer to means of implementation:

7.1 By 2030, ensure universal access to affordable, accessible, reliable and modern energy services.

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix.

7.3 By 2030, double the global rate of improvement in energy efficiency.

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.

Indicators released by Istat

Statistical measures released by Istat for Goal 7 are seven and refer to three of the five Targets.

Table 7.1 - SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 7.1.1 - Proportion of population with access to electricity		
Households very or fairly satisfied with the continuity of the service of electricity supply (Istat, 2018, %)	Proxy	93.0
SDG 7.1.2 - Proportion of population with primary reliance on clean fuels and technologies		
Inability to keep home adequately warm (Istat, 2017, %)	National context	15.2
SDG 7.2.1 - Renewable energy share in the total final energy consumption		
Renewable energy share in the gross final energy consumption (GSE- Gestore dei Servizi Energetici, 2017, %)	Proxy	18.3
Renewable energy share (transport sector excluded) in the gross final energy consumption (GSE- Gestore dei Servizi Energetici, 2017, %)	National context	17.4
Renewable energy - Electricity from renewable sources in the gross electricity consumption (Terna S.p.A., 2017, %)	Partial	31.1
SDG 7.3.1 - Energy intensity measured in terms of primary energy and GDP		
Primary energy intensity (Eurostat; ENEA, 2016, %)	Identical	98.4

For Target 7.1, a proxy indicator was prepared (percentage of households very or fairly satisfied with the continuity of the service of electricity supply) and an indicator more suitable to characterize the national context (percentage of people unable to keep home adequately warm). For Target 7.2, a proxy indicator (Renewable energy share in the gross final energy consumption), a national context indicator (Renewable energy share - transport sector excluded - in the gross final energy consumption) and a partial indicator (Electricity from renewable sources in the gross electricity consumption) were selected. Target 7.3, finally, uses an indicator that corresponds exactly to the one expected for the SDGs (primary energy intensity), for the first time disseminated at regional level.

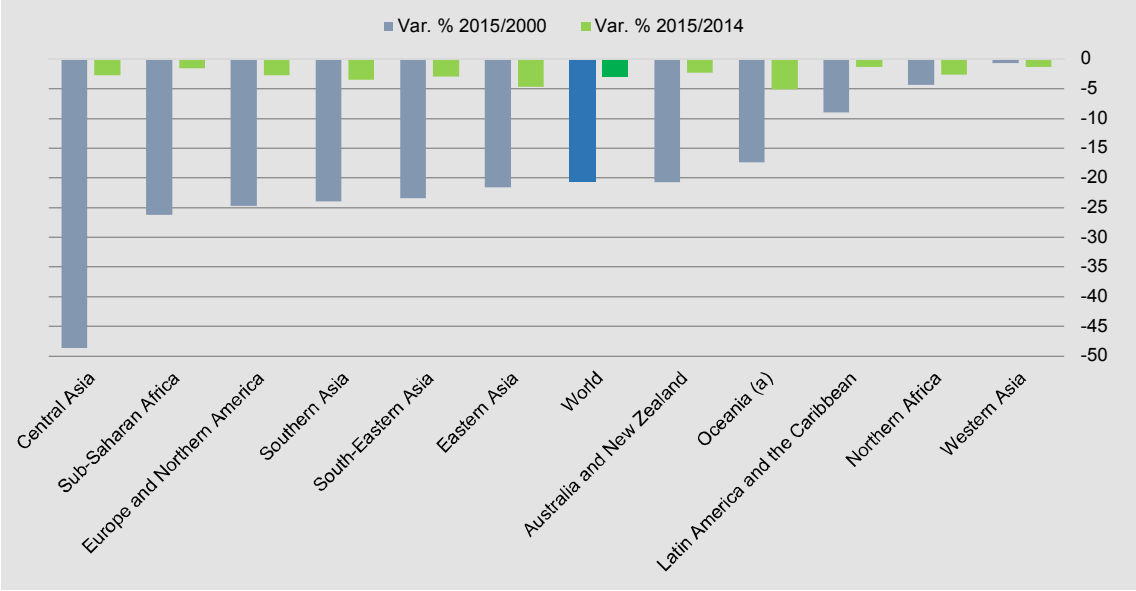
Focus

SDG 7.3.1 - Energy intensity measured in terms of primary energy and GDP

The issue of energy efficiency has become increasingly relevant with respect to the need of optimization of the relationship between energy demand and emissions level, in order to reduce climate impacts due to the use of energy products. The increase in energy efficiency is today more possible than ever for the great opportunities offered by technological innovation in producing advanced solutions to improve the efficiency of structures, processes and products. Energy efficiency represents a relevant Target for energy and environmental sustainability and an important means of fighting energy poverty, at the same time offering great advantages for productive activities.

Among the Targets for Goal 7, the 2030 Agenda includes doubling the global rate of improvement in energy efficiency and adopts energy intensity (the ratio between gross inland energy consumption and gross domestic product, or GIC/GDP) as an indicator of an economy's energy consumption and its overall energy efficiency. The indicator is a proxy[2] of the efficiency with which an economy is able to use energy to produce economic output, considering the residential sector's efficiency in energy consumption as well.

Figure 7.1 - Primary energy intensity by geographic area (percentage change 2015/2000 and 2015/2014)



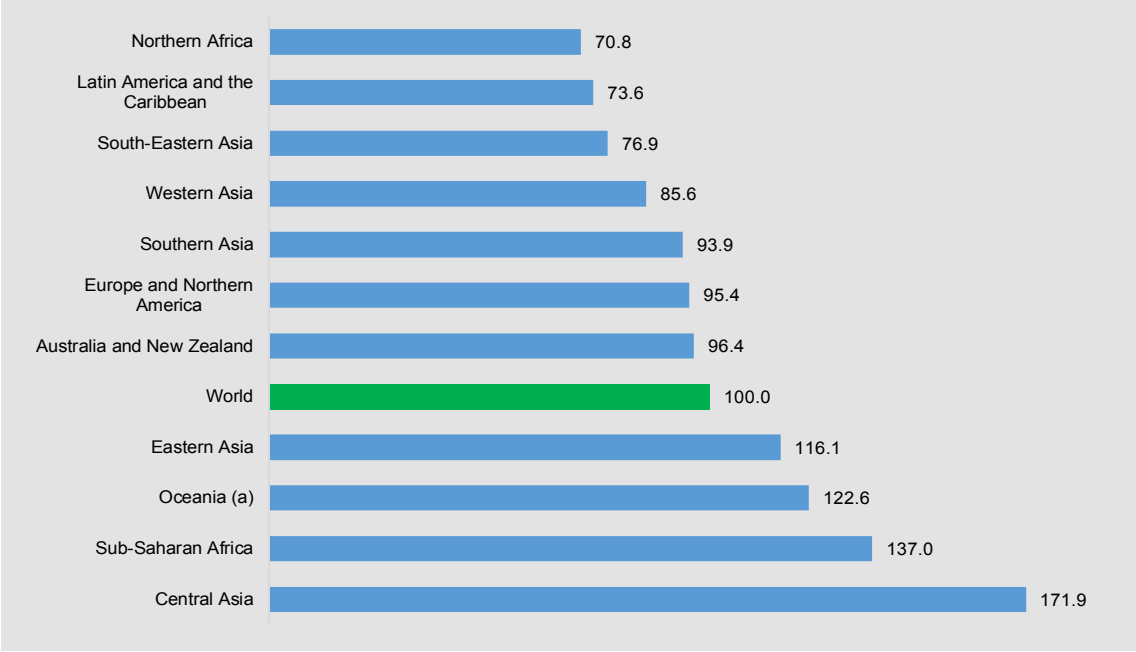
Source: https://unstats.un.org/sdgs/indicators/database/
(a) Excluding Australia and New Zealand

Compared to 2014, global primary energy intensity decreased by 2.9%, while the improvement over 2000 is more than 20% (Figure 7.1). To achieve the Target of doubling the energy efficiency improvement rate set by the Agenda, energy savings will have to maintain a sustained growth rate in the period 2016-2030.

2 Energy intensity is only a proxy indicator for energy efficiency, because It can be affected by many factors, such as climate, structure of the economy, nature of economic activities, consumption habits etc..

The geographic areas with the highest energy intensity are Central Asia and Sub-Saharan Africa: given the world energy intensity as 100, the former has a value of 172; the latter has a value of 137 (Figure 7.2). Energy intensities below the global average characterize North Africa (71), Latin America and the Caribbean (74) and Southeastern Asia (77). The energy intensity level achieved affects the possibilities of further progress. The areas that benefited in relative terms from the greatest progress are those with higher energy intensity than the global average: Central Asia, which almost halved its energy intensity from 2000 and registered a 3% decrease compared to previous year, and Sub-Saharan Africa (respectively -26.2% and -1.5%). Minor improvements are seen in the areas with less energy intensity. Between 2000 and 2015 Western Asia has recorded a discontinuous energy intensity trend, standing out with a decrease below 1%. North Africa and Latin America registered a below average drop for their indicators (respectively, -4.4% and -8.9% compared to 2000; -2.6% and 1.3% in the last year).

Figure 7.2 - Primary energy intensity by geographic area. Year 2015 (index number world=100)



Source: https://unstats.un.org/sdgs/indicators/database/
(a) Excluding Australia and New Zealand

The 2030 Agenda has relevant elements of convergence with energy and climate policies adopted by the European Union. Aiming at a transition to a low-carbon-emission economy, European policies have been guided by more and more tight requirements. The '20-20-20 Targets' of the Climate and Energy Package set different national Targets for the countries in the Union in order to achieve the overall European Targets. Among the Targets, the one of 20% increase in energy efficiency to decrease the primary energy demand (Directive 2012/27/EU)[3], further raised to 27% by 2030 (2030 climate and energy framework)[4], and to

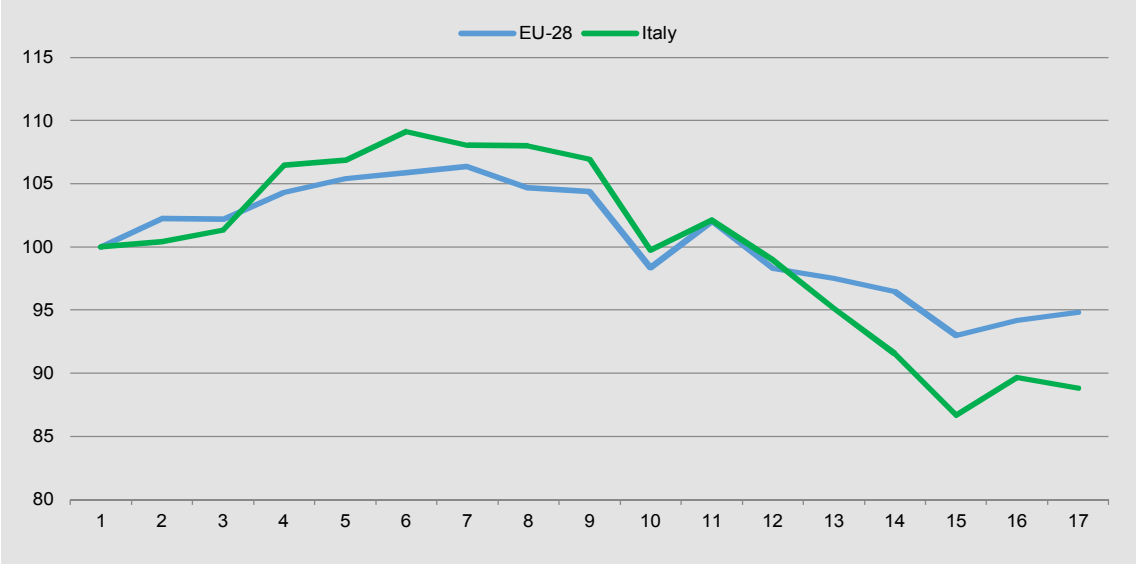
3 The other two 20-20-20 Targets are: 20% reduction of greenhouse gas from 1990 levels (Directive 2009/29/EC) and the promotion of the use of renewable sources to satisfy at least 20% of gross final energy consumption (Directive 2009/28/EC).

4 Moreover, the 40-27-27 Targets approved under the 2030 climate and energy framework expect 40% of greenhouse gas reduction and 27% of renewable consumption, the latter raised to 32% in 2018 (Directive (EU) 2018/2002). In 2018, the European Parliament approved new Targets of 35% for renewables and 35% for energy efficiency.

32.5% (Directive (EU) 2018/2002). The 'Clean Energy for All Europeans Package', approved by the European Commission in 2016 in light of commitments on climate change made in COP-21 in 2015, confirmed the EU's investment, proposing an energy governance model focused on energy efficiency ('putting energy efficiency first'), as a means of economic and employment promotion as well as sustainability.

In Italy, the most recent guidelines for European policies have been adopted from the 2017 National Energy Strategy (NES). NES confirms the key role of energy efficiency in our country's energy transition path, simplifying and enhancing incentive policies in order to achieve 30% energy savings by 2030[5]. Thanks to additional investments in energy efficiency promoted by NES 2017, savings in final energy consumption for 10 million tons of oil equivalent (Mtoes) are expected by 2030.

Figure 7.3 - Gross inland consumption in EU and Italy. Years 2000-2016 (index number 2000=100)



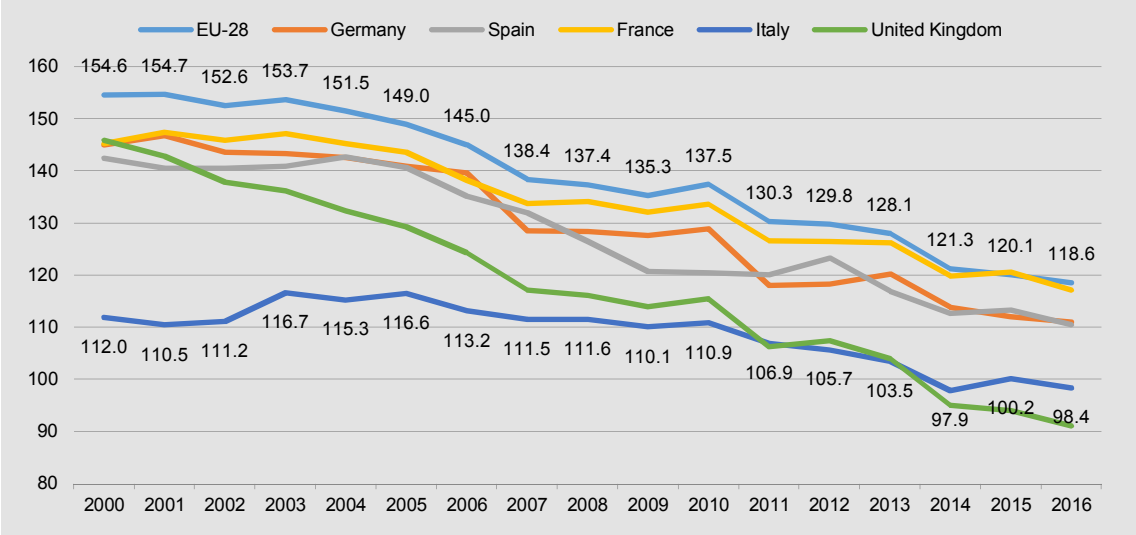
Source: Istat processing on Eurostat data (http://ec.europa.eu/eurostat)

In 2016, gross inland energy consumption (GIC) in Italy was 154.7 million tons of oil equivalent, slightly lower compared to 2015 (-1.4 Mtoes, equal to -1%). Energy demand, growing until 2007, began to decrease in 2008, with a drastic drop in 2009, coinciding with the first phase of the "double crisis" ended in 2014; in recent years it has stabilized on the levels recorded in the early 1990s (Figure 7.3). Even if Italian and EU trends of GIC are comparable, the percentage decrease between 2000 and 2016 in Italy (-11.2%) is double compared to that of the average in the European Union at 28 (-5.2%): this shows how much the member countries should still invest to meet the Targets of reducing energy consumption according with European legislation. In terms of energy intensity, in 2016, EU's earnings amounted to -23% compared to 2000 and -1.2% in the last year. The countries with the most consistent progress over time are Slovakia, Romania and Ireland (about -50%), Lithuania (-47%), Malta and Bulgaria (-44%). The countries that showed the lowest progress since 2000 are Austria (-6%), Finland (-11%) and Portugal, Italy and Greece (-12%).

5 2017 NES also includes a 2030 Target of 28% for the share of consumption from renewable sources and the Target for emissions decrease of 39% for 2030 and of 63% for 2050.

In Italy, the ratio GIC/ GDP decreased between 2000 and 2016, from 112 to 98.4 tons of oil equivalent per million euro (Toe/M€). The decreasing trend of Italian primary energy intensity is due in part to the combined effect of the dynamics of gross domestic product and gross inland consumption and, in particular, to the greater contraction suffered by the CIL compared to GDP during the recession. The Italian decrease in energy intensity is mostly due to the contribution of policies incentivizing energy efficiency carried out by our country. The incentives led to savings of final energy in 2017 of a little more than 8 Mtoes/year, equal to 52% of the national Target for 2020 set by the National Action Plan for Energy Efficiency 2014 and confirmed in 2017 (ENEA, "Annual Energy Efficiency Report" 2018).

Figure 7.4 - Primary energy intensity by country. Years 2000-2016 (tons of oil equivalent per million euro)



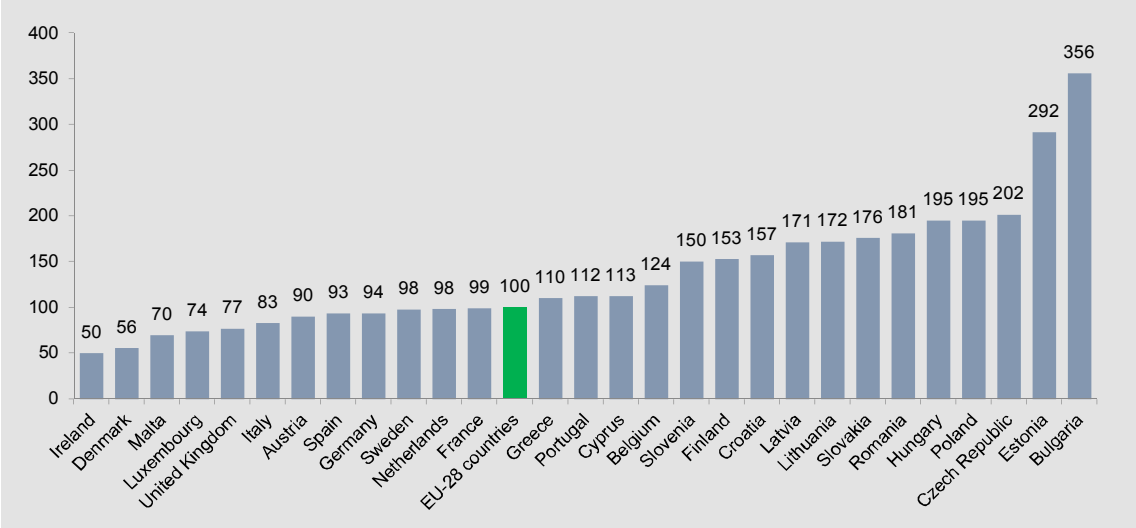
Source: Istat processing on Eurostat data (http://ec.europa.eu/eurostat)

Italy over time has shown a development trajectory featuring less dynamism and lower performance than the EU average and countries closest to Italy, which showed initial higher levels and more consistent savings (Figure 7.4). In Italy, the annual average growth rate in the 2000-2006 period was -0.8%, lower than that of France (-1.3%), of the EU28 (-1.6), Spain (-1.6), Germany (-1.7) and the United Kingdom (-2.9). High margins of savings remain in Italy, especially in the tertiary sectors (which in 2017 achieved only 17.5% of the Target for 2020), transport (30.7% of expected savings) and industry (49.0%), where the residential sector has almost reached (over 99%) the expected savings. On the other hand, it must be considered that the good positioning of our country in terms of average level of energy intensity makes more complicate to implement further decreases.

Compared with Europe, Italy has had over time a modest energy intensity: given 100 as the average value for the EU, the Italian energy intensity has a value of 83 (Figure 7.5), placing our country in sixth place in the international ranking, after Ireland (50), Denmark (56), Malta (70), Luxembourg (74) and the United Kingdom (77). On the contrary, the Eastern European countries consistently contribute to raising the average level, such as Bulgaria, with an energy intensity more than 3.5 times the EU average, Estonia (292) the Czech Republic (202), Hungary and Poland (195 for both).

During the 2009-2015 period, the highest contribution to the decrease of Italian primary energy intensity came from the Islands, which recorded a variation of GIC/GDP from 176.2

Figure 7.5 - Primary energy intensity by country. Year 2016 (index number EU=100)

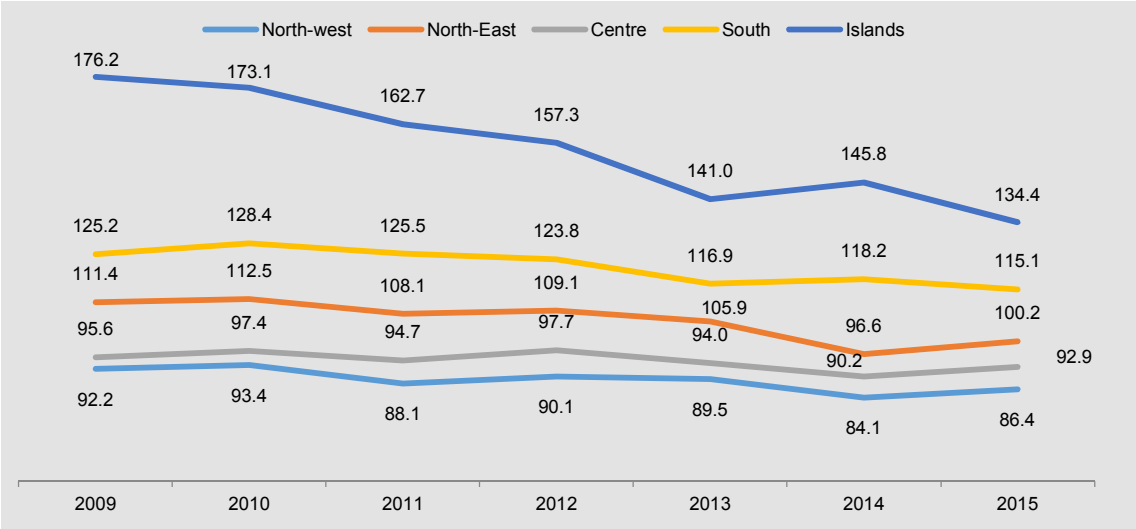


Source: Istat processing on Eurostat data (http://ec.europa.eu/eurostat)

to 134.4 Toe/M€, with a percentage change of -23.8% and an annual average growth rate of -4.4% (Figure 7.6). Above-average reductions were also achieved in the Northeastern geographical area (-10.1%; from 111.4 to 102 Toe/M€), while the South (-8.0%), the North-west (-6.4) and the Centre (-2.8) showed variations lower than the average. Sardegna, in particular, distinguished as the first Italian region in lowering energy intensity (-38%); remarkable progresses were registered in Molise (-30%), Marche (-29%) and Abruzzo (-28%) as well. Except for Lazio, the only region that has seen an increase of the indicator (+ 13%), Campania, Piemonte, Basilicata, Calabria and Lombardia recorded lower performances.

In 2015, regional variability was intensive (Figure 7.7): the most virtuous regions were Marche, which registered an energy intensity of 67 tons of oil equivalent per million euro, Lazio (75), Trentino-Alto Adige (76), Liguria and Campania (78 and 79 respectively) and, subsequently, Lombardia (82) and Abruzzo (91). At the other extreme, Puglia, with 176

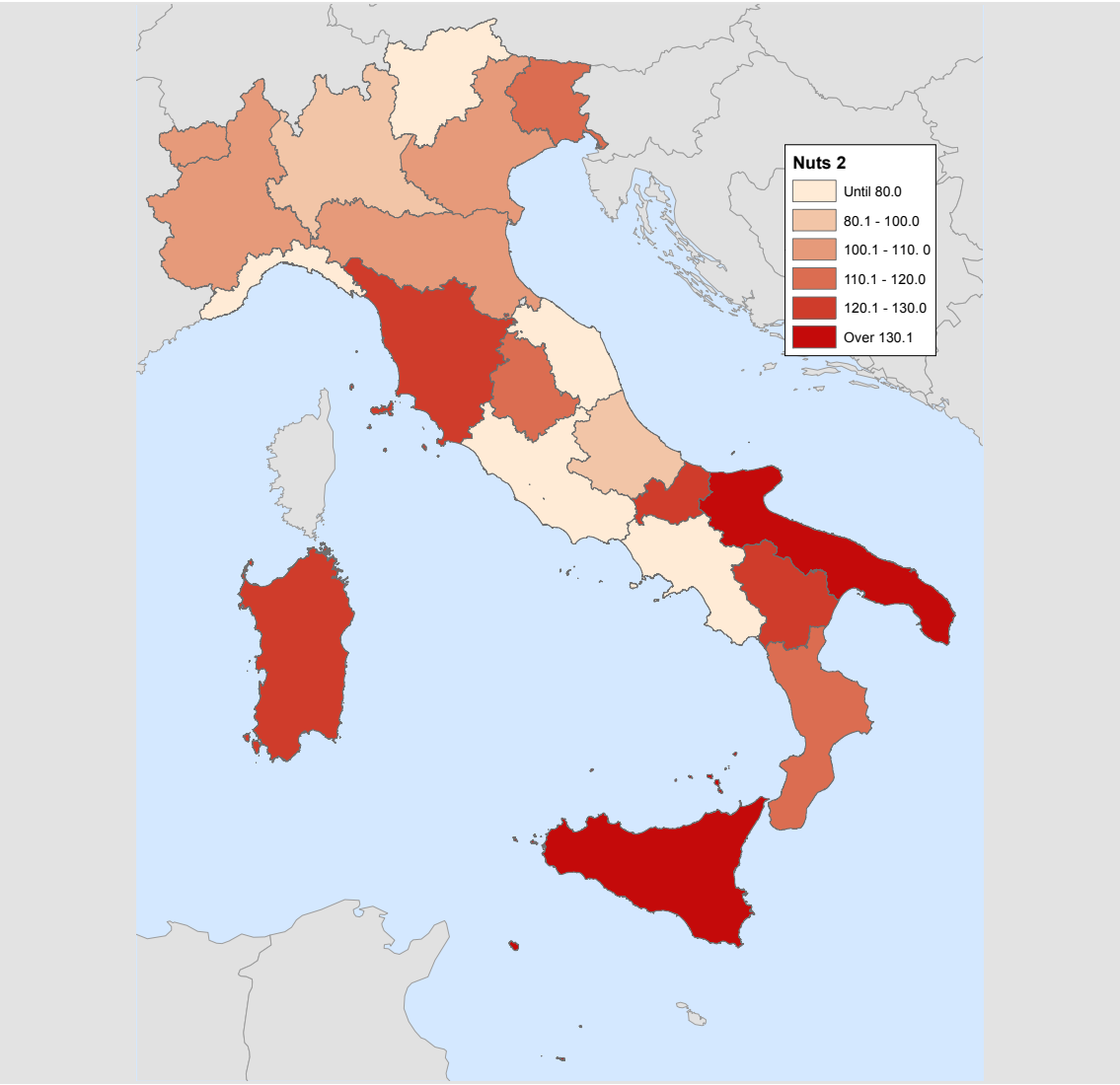
Figure 7.6 -Primary energy intensity by NUTS 1. Years 2009-2015 (tons of oil equivalent per million euro)



Source: ENEA, Bilanci Energetici Regionali (PSN: ENT-00005)

Toe/M€, recorded the highest ratio between GIC and GDP in Italy, followed by Sicilia (137), despite the improvements for the period 2009-2015, and, in the range between 120.1 and 130 Toe/M€, Toscana, Molise, Sardegna and Basilicata.

Figure 7.7- Primary energy intensity by NUTS 2. Year-2015 (tons of oil equivalent per million euro)



Source: ENEA, Bilanci Energetici Regionali (PSN: ENT-00005)

Trends in energy intensity can be affected by many elements: the weather and climate conditions (which affect the heating/cooling needs), the economic structure and the relative diffusion of more or less energy-intensive productive activities, and others. These factors affect energy demand of the various regions, as well as of the various countries, conditioning their performance. The ODEX Index[6] - which measures progresses purified of structural and short-term effects and of other not related to efficiency factors - confirms the positive trend of our country over time. Given 100 as the value of the whole economy's ODEX index in 2000, in 2016 Italy reached a value of 84.3, thus recording a 15.7% improvement, thanks mostly to the contribution of the industrial and residential sectors.

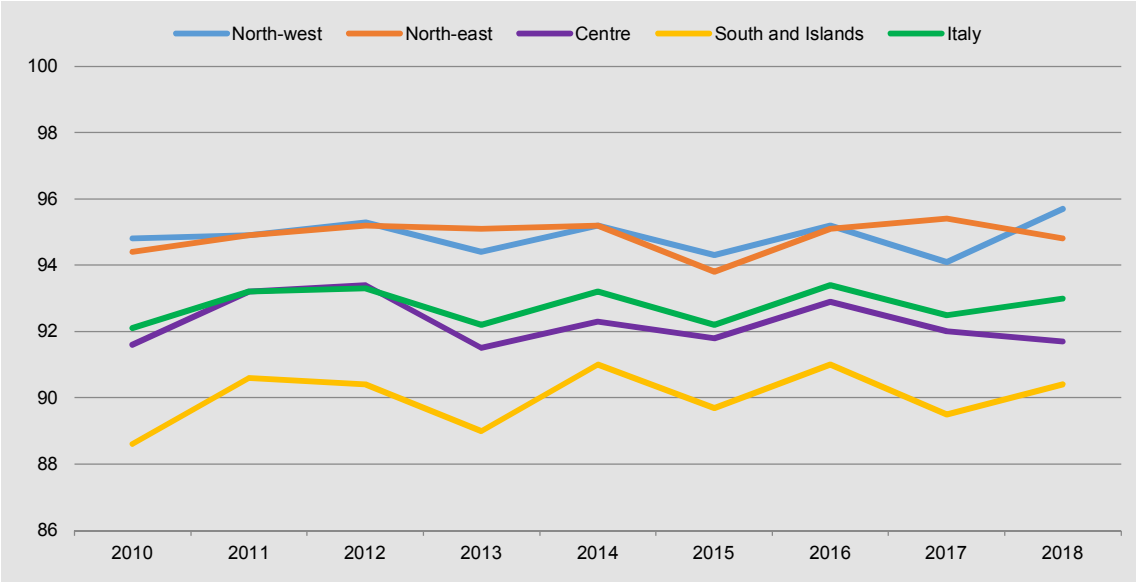
6 The ODEX Index was developed in the framework of the ODYSSE-MURE project: http://www.odyssee-mure.eu/).

Other indicators

SDG 7.1.1 - Proportion of population with access to electricity

Indicator 7.1.1 as proposed in the SDGs framework has little relevance to the Italian context, as our country has high standards for the accessibility to electricity services. The proxy indicator "Households very or fairly satisfied with the continuity of the service of electricity supply" proposed by Istat shows a stable trend over time, going from 92.1% in 2010 to 93.0% in 2018 (Figure 7.8). A more discontinuous trend characterizes the South, which in 2018 recorded the lowest percentage of satisfied households (90%). The percentage was higher in the North (95%), especially in the North-West, and was close to the national average values in the Centre (92%). The households which less frequently declared themselves satisfied were located specifically in Calabria, Sardegna and Lazio, while the incidence of satisfied households reached the highest levels in Trentino-Alto Adige/Südtirol (especially Bolzano Province), Valle d'Aosta, Lombardia and Toscana.

Figure 7.8 - Households very or fairly satisfied with the continuity of the service of electricity supply by NUTS 1. Years 2010-2018 (percentage of total households)



Source: Istat, Multiscopo sulle famiglie: aspetti della vita quotidiana (PSN: IST-00204)

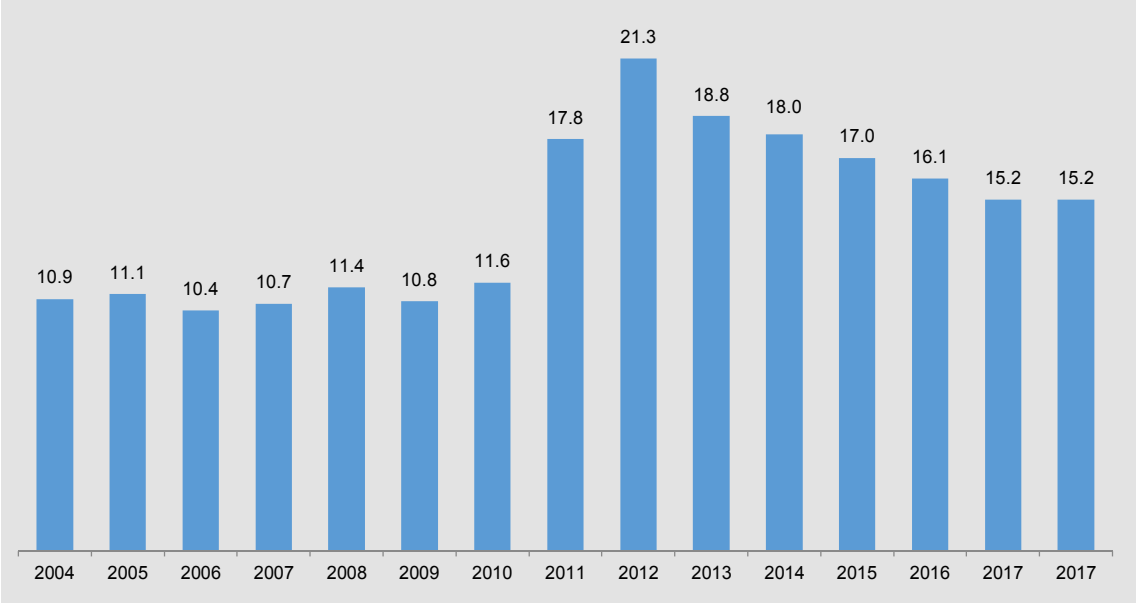
SDG 7.1.2 - Proportion of population that relies primarily on clean fuels and technologies

For SDG 7.1.2, "Inability to keep home adequately warm" was adopted as a proxy indicator, which is more appropriate than the one proposed by the United Nations to account for the specifics of the Italian state of affairs. In fact, like many other developed countries, Italy, although not suffering particular difficulties in accessing energy resources, can present risks of energy poverty, especially among the most disadvantaged social categories. The indicator is adopted by the European Commission in assessing the status of progress

towards the Energy Union ('Second Report on the State of the Energy Union') and is often used at international level as a proxy indicator of energy poverty.

In 2017, Italy registered a proportion of population that experienced difficulties in keeping home adequately warm, which is double compared to the EU-28 average (15.2% vs. 7.8). In the European rankings, our country was in a disadvantaged position, and ranked sixth after Bulgaria, Lithuania, Greece, Cyprus and Portugal. Compared to 2004 (10.9%), the indicator showed a first growing trend, reaching a maximum in 2012 (21.3%) and then declining again in the following years (Figure 7.9). The territorial disparities were significant: the incidence of people experiencing problems in home heating was lower in the North (11.6% in the Northwest and 8.6% in the Northeast) and in the Centre (12.4%) and higher in the South (24.0%) and the islands (22.2%).

Figure 7.9 - Proportion of population with inability to keep home adequately warm. Years 2004-2017



Source: Istat, Indagine sulle condizioni di vita (EU-SILC) (PSN: IST-01395)

SDG 7.2.1 - Renewable energy share in the total final energy consumption

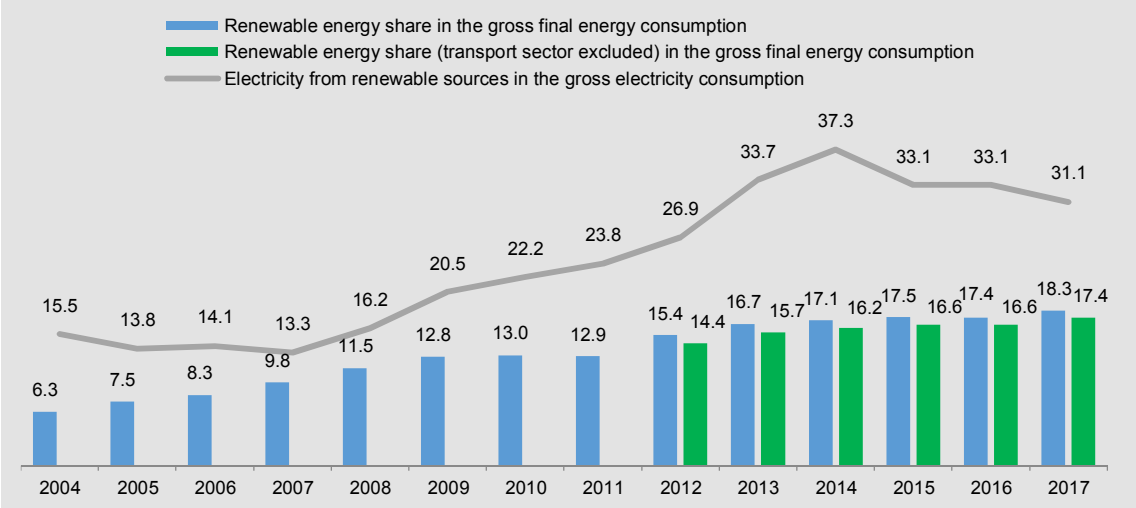
The contribution of renewable sources at geographical level is extremely different in relation to the variability from year to year in the availability of environmental and climatic resources, and to the disparity of support and incentive policies and related investments made in various countries over time. The promotion of renewable energy sources (RES) is an important priority for the European Union, as shown by the definition of the so-called "Overall Target" that requires the overall share of final gross energy consumption from renewable sources to achieve 20% by 2020 (Directive 2009/28/EC[7]) and 27% by 2030 (2030 climate and energy framework). Furthermore, in 2018 the renewables Target was raised to 32% (Directive (EU) 2018/2002), while the European Parliament has already approved a further 35% Target.

7 The European Directive also defines a sectoral Target of 10% for the total energy consumption in transport covered by RES.

In Italy, the National Action Plan for Renewable Energies (2010), in addition to incorporating the overall Target defined at European level for our country, identifies two additional Targets for the electricity sector and for the thermal one, indicating the annual sectoral trajectories of gross final energy consumption and the policies necessary for reaching the Targets. The NES 2017 sets ambitious Targets of 28% by 2030[8], raised to 30% by the very recent National Energy and Climate Plan 2021-2030, presented by Italy in January 2019[9]. In the NES, the development of renewables must ensure the protection of the landscape, often put at risk by the presence of plants for renewable energy production, and represents a tool to reduce energy dependence from abroad, which, in Italy, is very high.

In terms of overall weight of renewables on national energy system, Italy regained a position of relative delay compared to other European countries, reaching in 2014 the 17% assigned for 2020 (Figure 7.10). Reaching this Target was helped by a strong development of electricity generation from renewable sources and, in particular, a massive increase in production by photovoltaic systems due to a significant incentive policy implemented in recent years. However, the effect on the indicator of the contraction in overall energy consumption caused by the economic crisis that involved our country should not be underestimated. Following a 10 percentage points increase from 2005, in 2016 Italy reached a 17.4% share of energy consumption from renewables, placing it above the EU average (17.0%; +8 percentage points compared to 2005), ahead of countries like Luxembourg, Malta, Netherlands, Belgium, Cyprus and the United Kingdom. Thanks to the increasing diffusion of RES, but also to the increase in energy intensity produced by efficiency, our country has seen energy dependence on fossil fuels produced abroad decrease over time, reducing our disadvantage compared to the European average. The percentage of imports on energy needs has indeed dropped in Italy from 87% in 2000 to 77% in 2017, while in the EU-28 it has grown from 47 to 55%.

Figure 7.10 - Renewable energy share in final energy consumption. Years 2004-2017



Source: GSE- Gestore dei Servizi Energetici - Elaborazione e monitoraggio statistico degli obiettivi di consumo di fonti rinnovabili (SIMERI) (PSN:GSE-00002); Terna Spa, Statistica annuale della produzione e del consumo di energia elettrica in Italia (PSN:TER-00001)

8 The NES articulates three sectoral Targets by 2030: 55% for electricity sector; 30% for thermal sector; and 21% for transport.

9 The plan prepared by Italy defines 3 sub-Targets for renewable sources: 55.4% for the electricity sector, 33% for the thermal sector and 21.6% for transport.

After a slowdown in 2014-2016 period, also caused by unfavourable climate conditions (rainfall influencing on hydroelectric production and solar radiation influencing on photovoltaic power), 2017 marked for Italy a recovery in the incidence of RES, which reached 18.3% (+0.9 percentage points compared to 2016). The last year was characterized by a high level of irradiation, which has made the historical record in photovoltaic production (+ 10.3% compared to 2016), and by lower average temperatures, which increased biomass heating in the residential sector (+ 9.5%).

The amount of electricity from RES is rather variable by region. The regions with a wider use of RES energy are Valle d'Aosta, which meets almost 90% of the demand through renewables, Bolzano and Trento Provinces (66% and 45%), Calabria (40%), Molise and Basilicata (37%). The share of consumption covered by renewables is also high in Abruzzo, Sardinia and Umbria. The exploitation of RES is still relatively rare in Liguria (9%), Lazio (10%), Emilia-Romagna (11%), Sicilia (12%) and Lombardia (14%).

The contribution of renewable sources to electricity production has grown rapidly over time (from 13.8% in 2005 to 37.3% in 2014), providing a driving force for the entire sector. Hydric source continues to represent, among the electric RES, the most productive source, thanks to the contribution of the mountainous regions. Nevertheless, over time new renewable sources such as wind power and, especially, photovoltaics (mainly common in the South and in the Center, respectively) made significant headway, as well as bioenergy. Mostly due to the lower contribution of the hydroelectric sources, the RES share of gross electricity consumption, decreased to 33.1% in 2015 and stabilized at this level in 2016. In 2017, there was a further contraction of the indicator, which dropped to 31.1% (-2 percentage points compared to 2016). Nevertheless, Italy is in an advantageous position compared to other EU countries.

In brief

The greatest contribution to the decrease in primary energy intensity comes from the Islands

Historically having lower levels than the EU average and many of its main competitors, Italy has progressively reduced its primary energy intensity: from 113.2 (2006) to 98.4 (2016) tons of oil equivalent for 1,000 euros of GDP. Between 2009 and 2015, the Islands, and Sardegna in particular (-38%), contributed most to the drop in the GIC/GDP ratio (-23.8%), followed by the North-eastern area (-10.1 %).

The share of energy consumption from renewable sources is growing again

Over the last ten years, the share of energy consumption from renewable sources increased significantly, reaching the national Target for 2020 (17%) in 2014. After a slowdown from 2013 to 2015, in 2017 the share of consumption from RES grew again reaching 18.3% (+0.9 percentage points compared to previous year).

The decline in the contribution of renewable sources to electricity production of the last years was confirmed in 2017

In Italy, the contribution of renewable resources to electricity production increased rapidly over the years: from 13.8% in 2005 to 37.3% in 2014. The last three years have seen a reversal in the trend, and the percentage of consumption of electricity covered by renewable sources declined to 31.1% in 2017.

Households' satisfaction with electricity service is stable

The percentage of households either very or moderately satisfied with the continuity of their electricity service (93% in 2018) shows basic stability since 2010.

The share of the population unable to heat their housing is growing

After the increase between 2009 (10.8%) and 2012 (21.3%), the portion of the population having difficulties in keeping their house adequately warm decreased until 15.2% in 2017. Italy is still above the pre-crisis value.

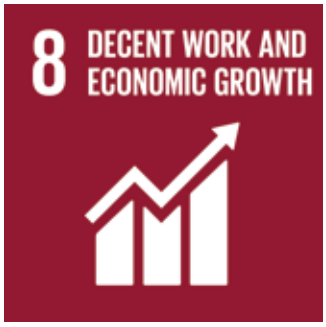
SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
7.1.1					
	Households very or fairly satisfied with the continuity of the service of electricity supply			a	b
7.1.2					
	Inability to keep home adequately warm				
7.2.1					
	Renewable energy share in the gross final energy consumption				
	Consumi di energia elettrica coperti da fonti rinnovabili (in percentuale del consumo interno lordo di energia elettrica)				
7.3.1					
	Primary energy intensity	c	d	e	f

NOTES

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTE

(a) 2013-2018
(b) 2017-2018
(c) 2006-2016
(d) 2006-2011
(e) 2011-2016
(f) 2015-2016



GOAL 8

PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL[1]

Goal 8 focuses on the promotion of a new model of economic development that combines economic growth with environmental protection, ensuring inclusion and fairness in the distribution of economic resources and in working conditions. Monitoring economic growth refers to the performance of economies and their production capacity, to be supported and strengthened by stimulating diversification, technological progress and innovation. This means promoting a development model based on drivers that can increase the potential for growth, with a balanced leveraging of qualitative factors, not just quantitative ones, in order to generate inclusive and sustainable effects. The aspect of labour is addressed with reference to the Goal of ensuring full employment and decent jobs for all, including the categories at risk of exclusion (young people, women, persons with disabilities, migrants) and fairness in remunerations, improving safety conditions in the workplace and eliminating all forms of labour exploitation. Specific Targets are directed at promoting efficiency in using natural resources, with a view to decoupling economic development from environmental degradation, and at sustainable tourism as a means for creating employment, environmental protection and appreciation for local culture. Strengthening of financial institutions should also be carried out as inclusive, aiming to broaden access to financial, banking and insurance services.

1 This section was edited by Paola Ungaro with contributions from Federica Pintaldi, Gaetano Proto, Chiara Rossi.

Targets

Goal 8 is broken down into twelve Targets; two refer to means of implementation:

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.

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.

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.

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.

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.

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.

Indicators released by Istat

The statistical measures released by Istat for Goal 8 are twenty-two and refer to ten of the twelve Targets.

Table 8.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 8.1.1 - Annual growth rate of real GDP per capita		
Annual growth rate of real GDP per capita (Istat, 2017, %)	Identical	1.7
SDG 8.2.1 - Annual growth rate of real GDP per employed person		
Annual growth rate of real GDP per employed person (Istat, 2017, %)	Identical	0.4
Annual growth rate of value added in volume per employed person (Istat, 2017, %)	National context	0.3
SDG 8.4.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP		
Domestic material consumption per capita (Istat, 2017, ton per capita)	Identical	8.7
Domestic material consumption per GDP (Istat, 2016, ton / thousands of euro)	Identical	0.31
Domestic material consumption (Istat, 2016, thousands ton)	Identical	493,538
SDG 8.5.1 - Average hourly earnings of female and male employees, by occupation, age and persons with disabilities		
Hourly earnings (Istat, 2014, Euro)	Identical	14.88 Females 15.85 Males
SDG 8.5.2 - Unemployment rate, by sex, age and persons with disabilities		
Unemployment rate (Istat, 2018, %)	Identical	10.6
Non-participation rate (Istat, 2018, %)	National context	19.7
Employment rate (15-64) (Istat, 2018, %)	National context	58.5
Employment rate (20-64) (Istat, 2018, %)	National context	63.0
SDG 8.6.1 - Proportion of youth (aged 15-24 years) not in education, employment or training		
People not in education, employment, or training (NEET) (aged 15-24) (Istat, 2018, %)	Identical	19.2
People not in education, employment, or training (NEET) (aged 15-29) (Istat, 2018, %)	National context	23.4
SDG 8.8.1 - Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status		
Incidence rate of fatal occupational injuries or injuries leading to permanent disability (INAIL, 2016, per 10,000 employed)	Proxy	11.6
SDG 8.9.1 - Tourism direct GDP as a proportion of total GDP and in growth rate		
Tourism direct GDP as a proportion of total GDP (Istat, 2015, %)	Proxy	6.0
SDG 8.9.2 - Proportion of jobs in sustainable tourism industries out of total tourism jobs		
Number of jobs in tourism industries as a proportion of total jobs (Istat, 2015, %)	Proxy	8.3
SDG 8.10.1 - (a) Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults		
Number of ATM per 100,000 inhabitants (Istat processing on Bank of Italy data, 2017, per 100,000 inhabitants)	Proxy	68.1
Number of branches per 100,000 inhabitants (Istat processing on Bank of Italy data, 2017, per 100,000 inhabitants)	Proxy	45.2
Number of institutions per 100,000 inhabitants (Istat processing on Bank of Italy data, 2017, per 100,000 inhabitants)	Proxy	0.9
SDG 8.a.1 - Aid for Trade commitments and disbursements		
Aid for trade (Ministry of Foreign Affairs and International Cooperation, 2016, millions of euro)	Identical	Expenditure commitments 46.50 Gross payments 77.47
SDG 8.b.1 - Existence of 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, 2017, %)	Proxy	2,440
Total government spending in employment programmes and social protection from unemployment as a proportion of GDP (Istat, 2017, %)	Proxy	1,189

For Goal 8 the indicators corresponding exactly to the ones expected by the SDGs are nine: two indicators related to annual growth rate of GDP (8.1.1 and 8.2.1); three indicators for Target 8.4 related to material consumption (for more information on these indicators, please see Goal 12); two indicators for Target 8.5 related to the labour market (8.5.1 and 8.5.2); NEETs aged 15-24 (8.6.1) and 8.a.1 - Aid for trade. There are eight proxy indicators and five indicators of national context.

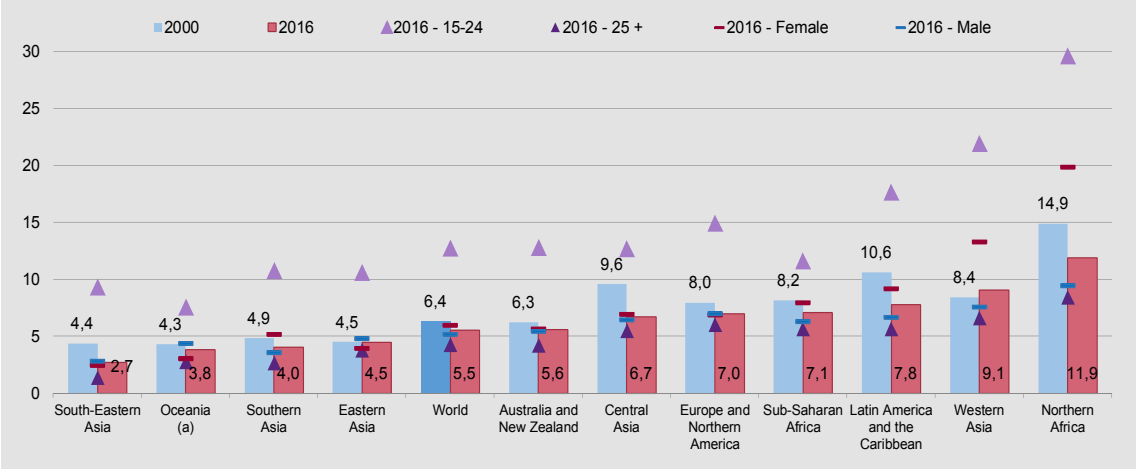
Focus

SDG 8.5.2 - Unemployment rate, by sex, age and persons with disabilities

The unemployment rate, equal to the number of people unemployed as a percentage of the active population (employed and unemployed), is an especially important indicator in the context of Goal 8. It is a measure of underemployment in the labour force and, thus, of the effectiveness and efficiency of an economy to generate work for those actively seeking it, offering protection from the risk of social exclusion.

Worldwide, in 2016 the unemployment rate was 5.5% (Figure 8.1), showing a decrease compared to 2000 (6.4%; -0.8 percentage points), and stable compared to the previous year. North-Africa, Central Asia, Latin America and the Caribbean and South-Eastern Asia saw the greatest drop, thus contributing to bridge the gaps from the world average. Despite the progress of some of the most disadvantaged geographical areas, inequalities remain wide. In the last year, North Africa confirmed as the area with the highest unemployment, with levels (11.9%) more than double the global average. Especially high values were observed in Western Asia (9.1%), Latin and Caribbean America and Sub-Saharan Africa (both marked by a significant increase in the unemployment rate in the last year) and Europe and North America (7.0%). The indicator defines a more favorable situation for South-East Asia (2.7%), Southern Asia (4.0%) and Oceania (3.8).

Figure 8.1 - Unemployment rate by geographic area. Years 2000, 2016

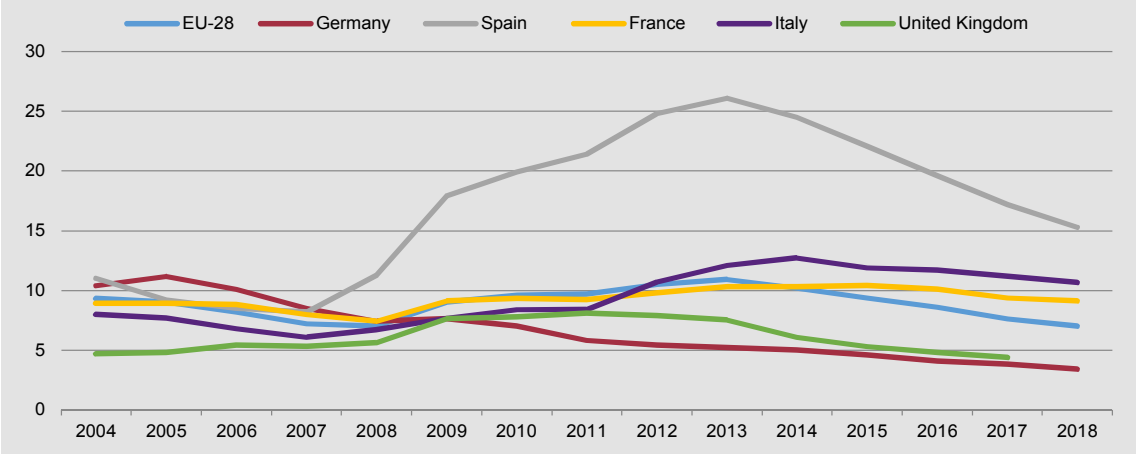


Source: https://unstats.un.org/sdgs/indicators/database/
(a) Excluding Australia and New Zealand.

The trend in the unemployment rate for the European Union was affected by the economic-financial crisis that struck European countries between 2008 and 2013, whose effects on the labor market led to an increase in the share of active people seeking employment from 7.0% to 10.9% (Figure 8.2). In Italy, the decreasing trend of the first part of the considered time span was interrupted in 2008, when the unemployment rate began to rise, moving from 6.1% in 2007 to 12.1 in 2013. The increase in unemployment involved all Member States, although to different degrees and at different times. The European Union saw the unemployment rate fall from 2014 (10.2%), reaching 7.0% in 2018 (-3.9 compared to 2013). In our country, the labour market recovery was delayed by a year and characterized

by weaker rhythms compared to both the main European economies and the European average. The Italian unemployment rate began to fall in 2015, after 7 years of uninterrupted growth, reaching 10.6% in 2018 (-2.1 points from 2014). In the last year, the Italian unemployment rate was still significantly higher than pre-crisis levels: this is partly due to a tendency to reduction of inactivity, which is nevertheless still especially high compared to the EU average. The employment crisis was particularly strong also in Spain: starting from levels of unemployment comparable to Germany, Spain reached a 26% unemployment rate in 2013, settling almost double values (15.3 %) compared to those prior to the crisis in 2018, while Germany (3.4%) halved them.

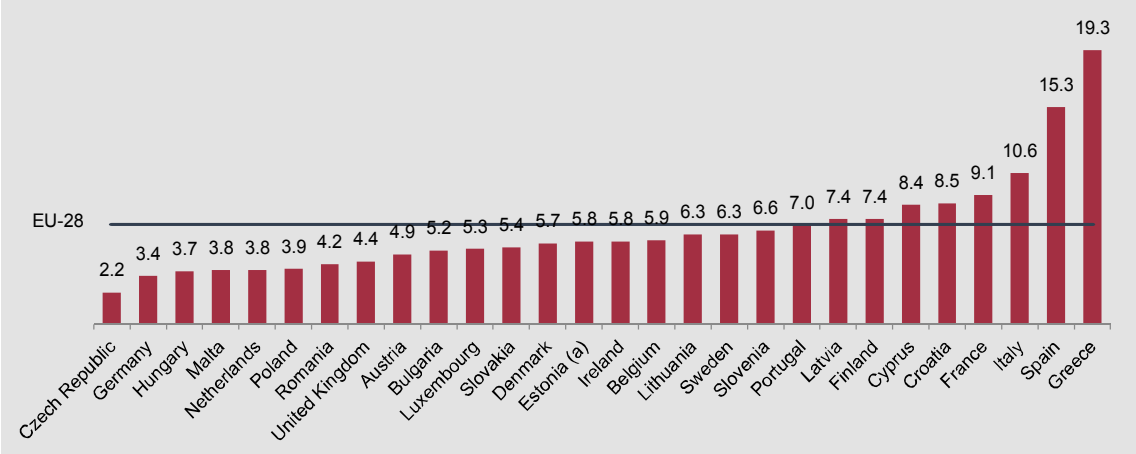
Figure 8.2 - Unemployment rate by country. Years 2004 - 2018



Source: http://ec.europa.eu/eurostat; Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)

Despite the recent improvement in the Italian labour market conditions, in 2018 the difference between Italian and European unemployment rate was +3.6 percentage points (Figure 8.3). Italy is in third place in the European ranking of unemployment rates, far from Greece, as well as from other European countries that experienced less problems in absorbing the job offer: Czech Republic, Germany, Hungary, Malta, Netherlands and Poland (with unemployment rates lower than 4%), as well as Romania, United Kingdom and Austria (below 5%).

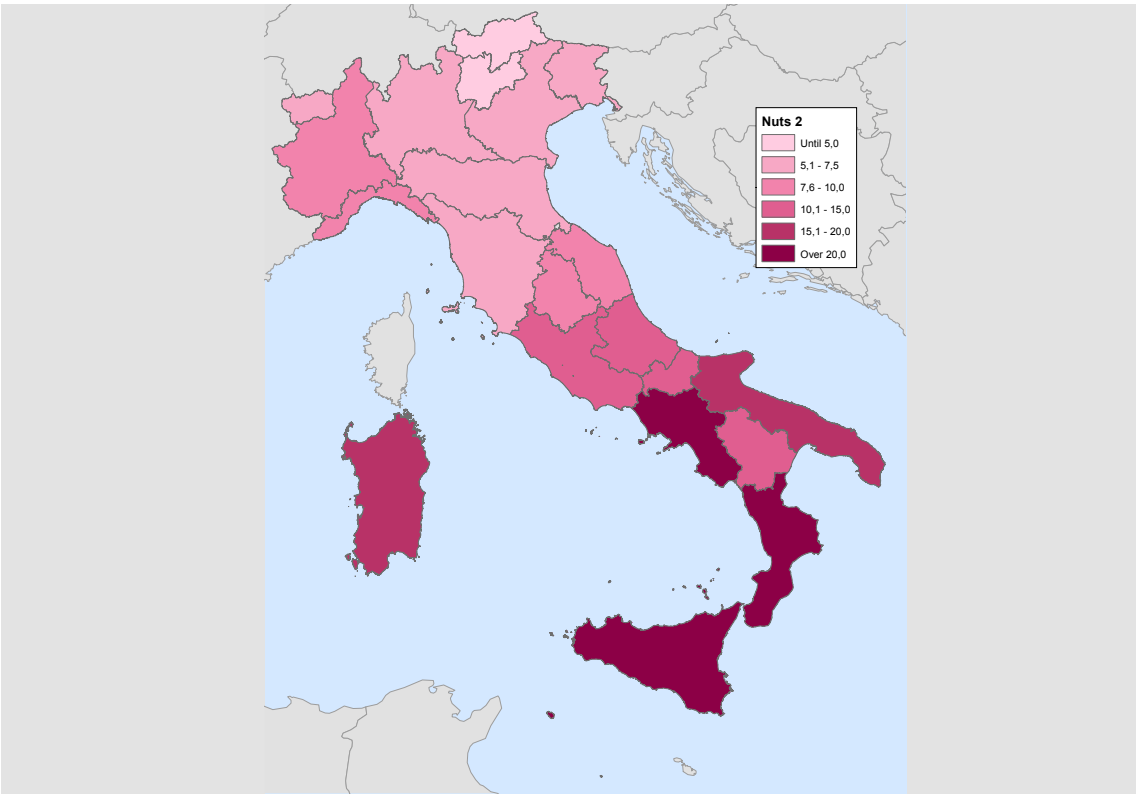
Figure 8.3 - Unemployment rate by country. Year 2018



Source: http://ec.europa.eu/eurostat; Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)
(a) Data refer to 2017.

The Italian unemployment rate is affected by a labour market situation very different at territorial level, with quite critical conditions in the South and Islands area and a more favourable situation in the North and Centre. In 2018, the number of unemployed people out of the active population was 6.0% in the Northeast area, 7.0% in the Northwest, 9.4% in the Centre and 18.4% in the South and the Islands. The unemployment rate in the Southern area was thus more than three times that in the Northeast.

Figure 8.4 - Unemployment rate by NUTS 2. Year 2018



Source: Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)

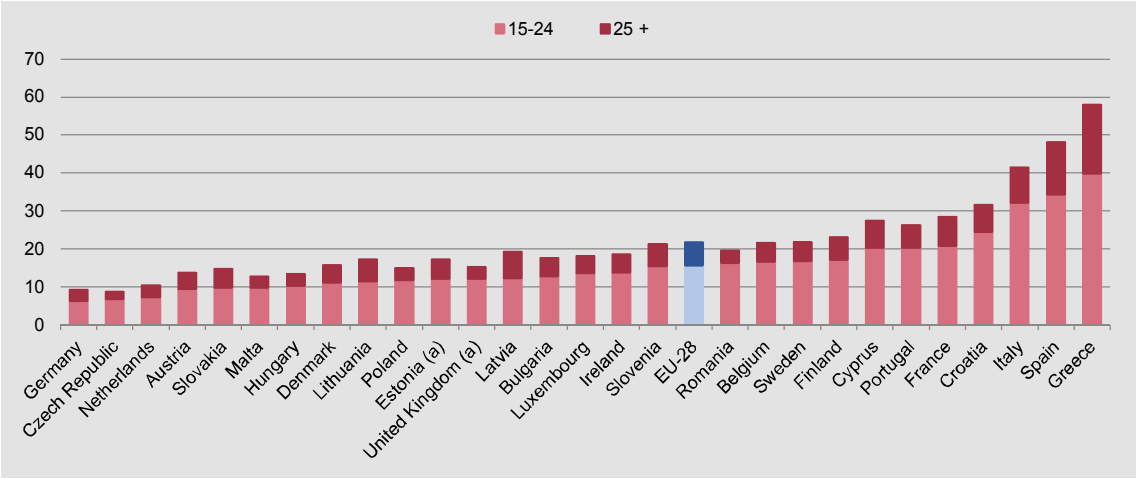
Looking at the data by region (Figure 8.4), the differences are even more striking. Trentino-Alto Adige stood out as the region with the lowest unemployment rate in Italy (2.9% in Bolzano and 4.8% in Trento), followed by Emilia-Romagna (5.9), Lombardia (6.0), Veneto (6.5), Friuli-Venezia Giulia (6.7), Valle d'Aosta (7.1) and Toscana (7.4). More difficulties were observed in Sardegna and Puglia, and mostly in Campania (20.4%), Sicilia (21.5) and Calabria (21.6).

Women and youth are vulnerable social categories in the labour market, subject to a greater risk of unemployment, social exclusion and poverty. This is a widespread reality in almost all geographic areas around the globe with a few exceptions, and with gaps differentiated by the overall unemployment levels. The gaps related to age, in particular, are very relevant and persistent. This is a phenomenon connected with youth participation in education (differing around the world also due to the different structures of the national education systems), and in particular to a different involvement in higher education.

In 2016, worldwide, youth (15-24 aged) unemployment rate was triple compared to that of the older population (12.7% versus 4.3%). The number of young people seeking job out of

active young people was extremely high in North Africa (30%) and West Asia (22%), while the problem was less extreme in South-eastern Asia, South Asia and Oceania.

Figure 8.5 - Unemployment rate by country and age. Year 2018



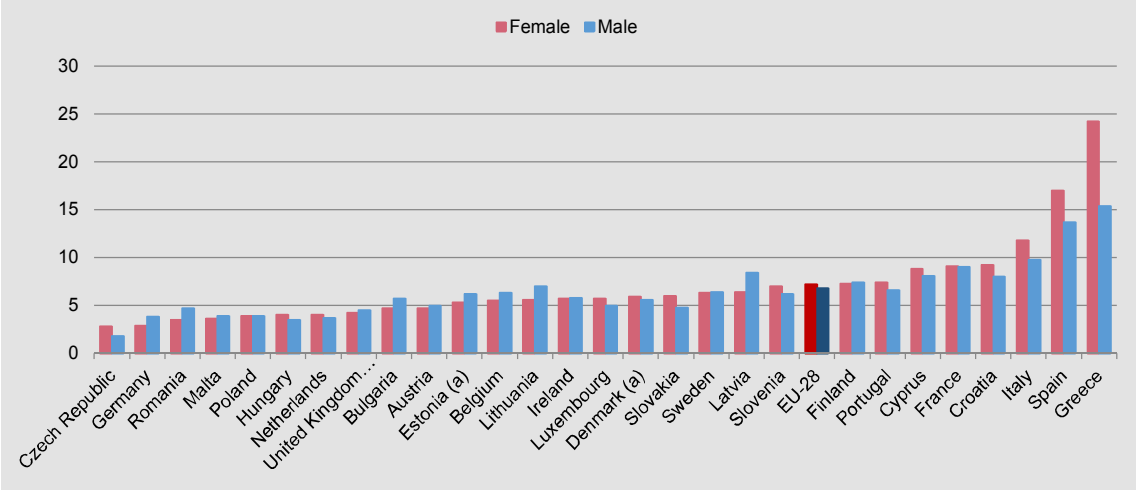
Source: http://ec.europa.eu/eurostat; Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)
(a) Data refer to 2017.

In Europe as well, young people experience an unemployment risk much higher than the older age range: on average for the European Union in 2018, the unemployment rate was 15.6% for the former and 6.1% for the latter (Figure 8.5). The situation for young people was especially worrisome in Greece (40%) and Spain (34%). In Italy the difficult youth situation on the labor market has been exacerbated by the crisis: unlike in many other EU countries, young people suffered more than the older population the decline in labour demand during the crisis, and conversely enjoyed less of the recovery after the crisis. In 2018, our country registered one of the highest youth unemployment rates in the EU 28, equal to 32.2%, with a difference of +23 percentage points than in the elderly population (compared to an average European difference of + 9.5).

The SDGs indicator, figured for a very young age range (15-24 years old), has some limits in depicting the position of young people on the labour market in many European countries and in Italy, where the growing level of education entailed prolonged inactivity for scholastic reasons. On the other hand, the difficulties for young people in accessing employment are witnessed by the high levels of NEETs ('not in education, employment or training'; SDG indicator 8.6.1). The share of NEETs out of the total population, although falling in the last four years, increased in Italy from 2004 to 2018, both for the 20-24 year-olds (from 21.5% to 27.1%) and for the 25-29 year-olds (from 23.8% to 30.9%). In 2017, Italy still had the highest incidence of NEETs among the EU countries for 15-29 year-olds (24.1%), more than 10 percentage points above the European average (13.4%). In assessing the overall youth condition in the labour market, the impact of an increasingly fragmented and unstable occupation must also be considered, as well as the presence of extensive phenomena of over-education, which in Italy massively affect the new recruits in the labor market.

Worldwide, in 2016, the share of individuals seeking for work out of the active population amounted to 5.2% for men and 6.0% for women (Figure 8.1). The areas with the widest gender differentials, were North Africa - with a female unemployment rate double that for men - West Asia and South Asia. On the other hand, the female unemployment rates were

Figure 8.6 - Unemployment rate by country and sex. Year 2018



Source: http://ec.europa.eu/eurostat; Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)
(a) Data refer to 2017.

lower than that of males in East and Southeast Asia. In 2018, among the EU countries, female unemployment reached very high levels in Greece, where almost one active woman out of four was looking for work, and in Spain (17 out of 100) (Figure 8.6). There are countries where the unemployment rate was lower for women than for men, with relative higher differentials in Romania, Latvia, Germany and Lithuania. In Italy, the gender gap has been gradually shrinking over time: in 2004, in fact, Italian unemployment rate was 6.3% for men and 10.5% for women (more than +4 points for women); in 2018, the difference dropped to 2 points, (9.8 vs. 11.8).

Other indicators

SDG 8.1.1 - Annual growth rate of real GDP per capita

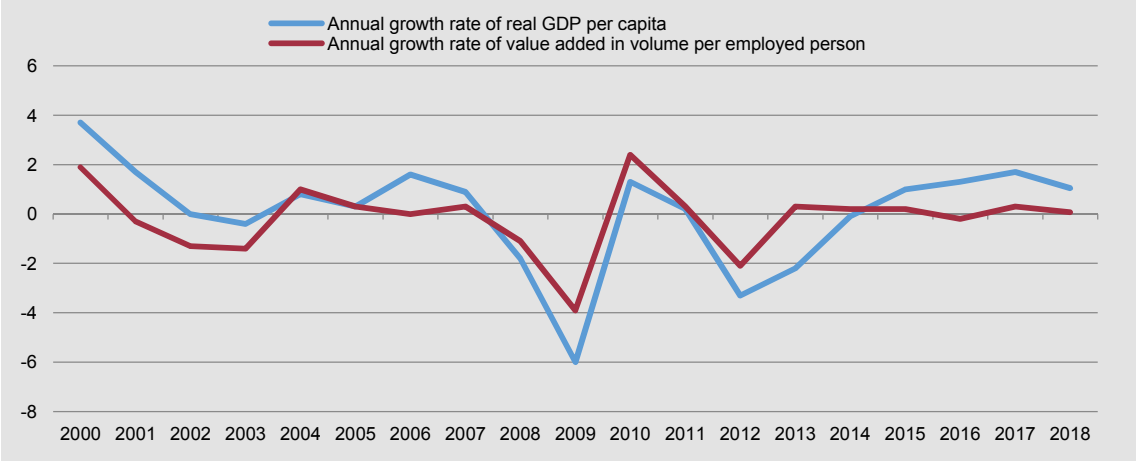
SDG 8.2.1 - Annual growth rate of real GDP per employed person

Within the SDGs framework, the monitoring of the annual real (at market prices) GDP trend responds to several purposes. In line with the Goal of sustaining economic growth, the annual growth rate of real GDP per resident provides a measurement of a country's economic performance, as well as information on the creation of primary incomes. The rate of growth of GDP per resident is only a partial indicator of sustainable development, as it does not consider the social and environmental costs of production. Moreover, as an average measure linked to the production of value added, it does not highlight themes such as household purchasing power, the distribution of income and its degree of inequality (for more details on this subject, please see the sections on Goals 1 and 10). Nonetheless, its relevance is due to the capacity to gather information on the potential ability of an economy to meet the needs of the population, ensuring resources for socio-economic development.

In addition to the annual growth rate of real GDP per employed person, an indicator proposed by the United Nations, Istat adopted the annual growth rate of value added in volume per

employed person[2], as a measure offering information on a country's ability to advance its economy through efficiency in the use of factors, especially labour. As an indicator of labour productivity, it assumes a role in relation to the need to monitor corporate strategies and industrial and labour policies, providing indications on the potential impacts on the standard of living.

Figure 8.7 - Annual growth rate of real GDP per capita and annual growth rate of value added in volume per employed person. Years 1996-2018 (chain linked values)



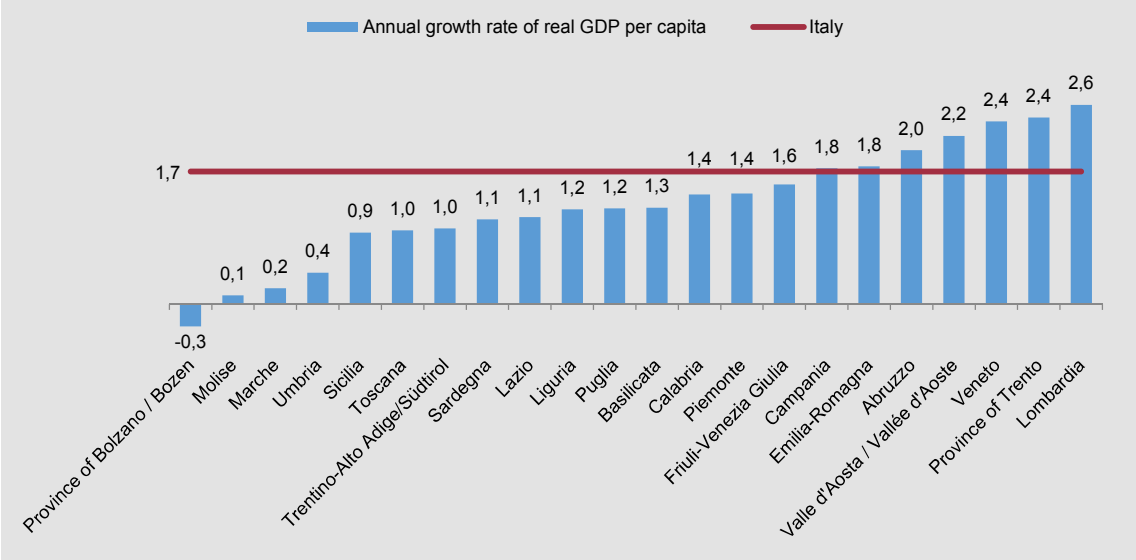
Source: Istat, Conti economici regionali (PSN: IST-00684)

In the period between 2000 and 2009, real GDP per capita and value added in volume per employee showed a decreasing trend, sharpened in the difficult years of the economic-financial crisis (Figure 8.7). In particular, the 2009 downturn marked a significant decrease in both GDP per capita (-6% compared to the previous year) and value added per employee (-3.9%), in correspondence with large falls of GDP and employment, although with different intensity. After a short period of recovery, the change returned to negative in 2012: -3.3% for GDP per capita and -2.1% for value added per employed person. From 2013, there was a substantial stabilization of labour productivity, with a slight decline in 2016 (-0.2%) followed by a recovery of a comparable order in the following year (+0.4%) and a very small new decrease in 2018 (-0.1%). On the other hand, the annual growth rate per capita turned positive again only in 2015, but showed a more solid recovery, recording significant increases in the last years: +1.0% in 2015, +1.3% in 2016, +1.7% in 2017 and +1.0% in the last year.

At territorial level, in 2017 – the last available year – the growth rate of GDP per capita showed a more consistent improvement in the North-west (+2.2%) and North-east (+1.9%), followed by the South (+1.4%). The most significant increases for this indicator were registered in Lombardia (+2.6%), the Province of Trento and Veneto (+2.4% for both; Figure 8.8). In the South, Abruzzo and Campania registered variations higher than the average of the area (2.0% and 1.8%). Bolzano Province (-0.3%) was the only region featuring a negative change in GDP per resident.

2 The value added in volume is the output measure usually used by Istat to estimate labor productivity, capital productivity and total factors productivity (https://www.istat.it/it/archivio/223194).

Figure 8.8 - Annual growth rate of real GDP per capita, by region. Year 2017 (chain linked values)



Source: Istat, Conti economici regionali (PSN: IST-00684)

In 2017, value added in volume per employed person showed a negative change in the Centre of Italy (-0.5%), while it grew above average in the North-western area (+0.7%). Declines were recorded in Campania, the Provinces of Trento and Bolzano, Piemonte, Molise, Toscana (between -0.1 and -0.5%) and, to a greater extent, in Lazio (-0.8) and Calabria (-1.0). The other regions were characterized by positive variations, more consistent in Basilicata (+3.4%), Liguria (+2.6), Valle d'Aosta (+1.8), Sardegna (+1.3), Lombardia, Puglia and Emilia-Romagna (+0.7).

The overall performance of the regions is influenced by their different productive structure, with different dynamics of labor productivity depending on the sectors of economic activity. At sectoral level, in 2018 Construction was the macro-sector of activity that experienced the most substantial growth in value added in volume per employed (+2.1%), while the Tertiary sector recorded a slight contraction (-0.2%). In the area of Services, labour productivity grew by 2.9% in Wholesale and retail trade, repair of motor vehicles and motorcycles. On the other hand, there was a decline in Professional, scientific and technical activities, administration and support services (-2.5%), but above all in Information and communication services (-5.1%).

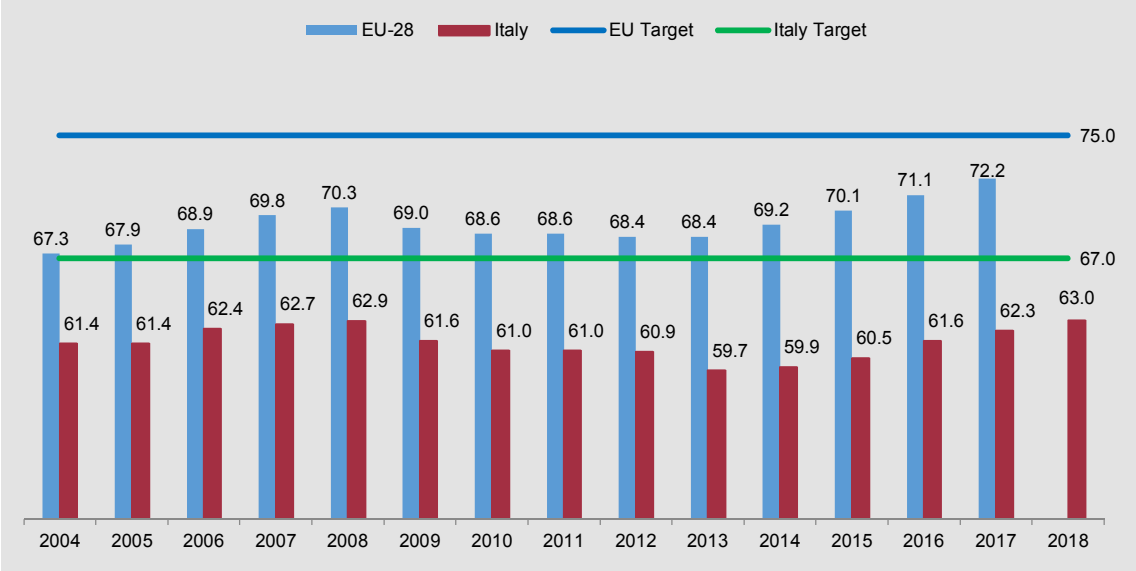
SDG 8.5.2 - Unemployment rate, by sex, age and persons with disabilities (National context indicators)

Further indicators of national relevance help to complete the scenario for the labour market in Italy. Quantifying labour participation, the employment rate[3] is an indicator of national context that measures which part of the population of working age helps to produce revenues. The 20-64 years age range, in addition to being more suitable for describing the Italian situation, considering the high participation by 15-19 year-olds in the education system, is the reference age class for the employment Target of the Europe 2020 Strategy[4].

3 Percentage of employed people in a given age range on the total population in that age range.

4 Raising the employment rate for 20-64 year-olds to 75% is one of the five headline Targets of the 2020 Strategy (COM(2010) 2020 final), which translates to a Target of 67% for Italy.

Figure 8.9 - Employment rate in EU and Italy. Years 2004 - 2018



Source: http://ec.europa.eu/eurostat; Istat, Rilevazione sulle forze di lavoro (Rfl) (PSN: IST-00925)

The economic recovery in the last few years had positive impact on employment, with a growth that led European Union and Italy to regain their pre-crisis levels, for EU since 2016, for our country only in 2018 (Figure 8.9). After the declining stage from 2009 to 2013, when the Italian employment rate lost more than 3 percentage points (almost -2 points for the EU-28), the indicator began growing again and reached, in 2017, 62.3% for Italy and 72.2% for EU. In the last year, the gap between the Italian and the European average employment rate was 10 percentage points at a disadvantage of our country, a difference considerably higher for females (14%) and smaller for males (6%). Italy is in the second-last place in European ranking, followed by Greece.

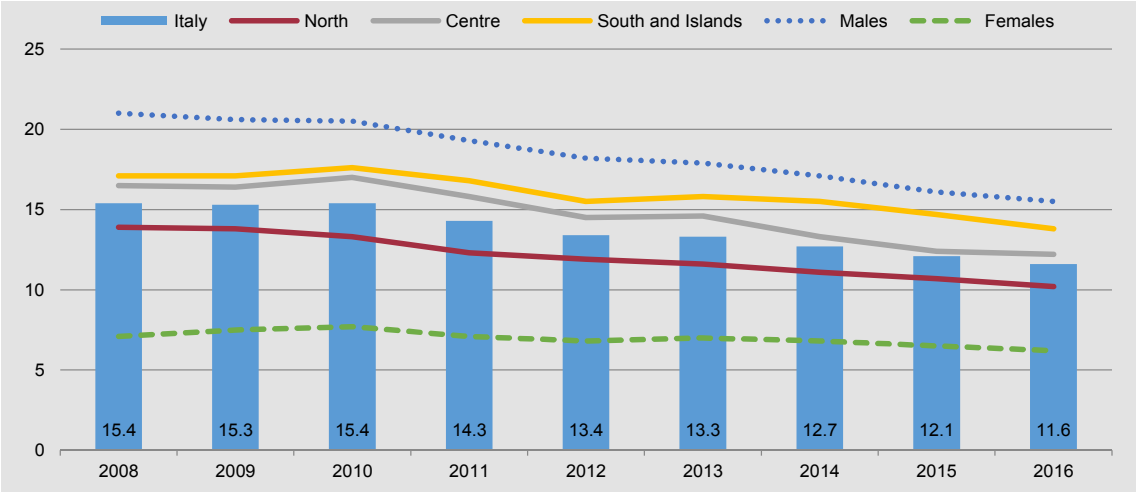
The Italian employment rate continued to grow also in 2018 (+0.7), reaching 63 employees out of 100 20-64 year-olds, a record value compared to the entire time span considered, but still 4 percentage points lower than the 2020 Target.

Despite the recovery in recent years, the structural asymmetries in the Italian labour market, in certain cases strengthened during the negative economy phase, are reflected in the employment trends by gender, age and geographical area. The employment gender gap has been slightly narrowing over time, but in 2018 the distance between the number of employed males (53.1%) and females (72.9%) was still 20 percentage points. The generational and regional differences, on the contrary, have increased over time, making the discrepancy from the average employment rate higher for the youth and the Southern area. In 2018, the South and the Islands registered an employment rate below 50%, whereas the Northeast (73%) reached the European average. The regions that suffered the worst were Sicilia (44%), Campania (45%), Calabria (46%), and Puglia (49%); the employment rate reached 80% in Bolzano Province and was quite high in Emilia-Romagna and in Trento Province (74%).

SDG 8.8.1 - Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status

The incidence rate of fatal occupational injuries or injuries leading to permanent disability is an indicator relevant for protecting workers' rights and, in particular, for promoting safety in the workplace, to monitor measures and programs for the identified areas of risk, as well as to formulate and adopt new preventive measures.

Figure 8.10 - Incidence rate of fatal occupational injuries or injuries leading to permanent disability. Years 2008-2016
(per 10,000 employed)



Source: Inail

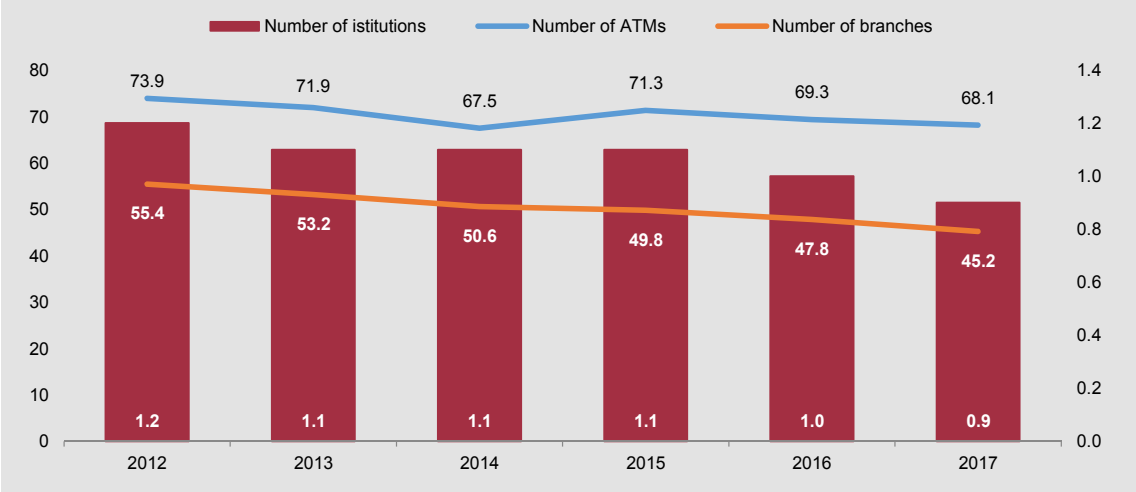
In Italy, the number of fatal injuries or injuries leading to permanent disability per 10,000 employed persons has been decreasing over time, moving from 15.4 in 2008 to 11.6 in 2016, with a percentage change equal to 25% (Figure 8.10). The relative decrease in the indicator was higher for the northern and central areas, which recorded variations of -26.6% and -26.1%, than for the southern area (-19.3%). In 2016, the injury rate was higher in the South (13.8 fatal injuries and permanent disabilities per 10,000 persons employed), higher than the average in the Centre (12.2), and lower in the North (10.2). At regional level, the most critical situations were in Basilicata (24) and Calabria (19), while Lombardia, Lazio and Piemonte were the safest regions in Italy. The effect of different production specialisations in the Italian regions must be considered in evaluating the data. The high gender differences have been decreasing over time, nevertheless still in 2016 the value recorded by men was more than double compared to the female one (15.5 vs. 6.2). The gap also depends on the riskier working conditions in sectors where the male component prevails over women, such as, for example, Construction or Agriculture.

SDG 8.10.1 - Number of commercial bank branches per 100,000 adults and (b) number of automated teller machines (ATMs) per 100,000 adults

The 8.10 Target of 2030 Agenda aims to 'strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all'. The spread of formal financial services in the territory is essential to allow the population to access services such as savings, insurance, payments, credit, remittances, with benefits

on the quality of life and well-being. The banks remain one of the key institutions for access to formal financial services: indicators relating to the availability, with respect to potential users, of branches and other access points, such as automated teller machines (ATMs), are therefore relevant in view of monitoring the Target.

Figure 8.11 - Number of istitutions, branches and ATMs. Years 2012-2017 (per 100,000 inhabitants)



Source: Istat processing of Bank of Italy data

In 2017, 538 banks (covering 5,526 municipalities), 27,358 operational branches and 41,284 ATMs operated in Italy. In recent years, the network of banking services has suffered a sharp and sudden contraction (Figure 8.11). Between 2012 and 2017, the number of banks decreased from 1.2 to 0.9 per 100,000 inhabitants, with a loss of 25%. The branches fell from 55.4 to 45.2 (-18.4%), the ATMs from 73.9 to 68.1 (-7.1%). It was the effect of multiple factors, partly connected to the consequences of the global financial crisis on the national banking system: the exponential increase in problematic credit due to the closure of companies and the difficulties of families in paying mortgages and loans; the merger and incorporation of small banks out of Basel's parameters in large companies; the rising utilization by users of online procedures for managing banking operations. The territorial differences were marked: in 2017 the number of branches and ATMs for 100,000 inhabitants was particularly low in the South and Islands area (respectively 28.4 and 44.5), where the indicators reached values equal to half of those recorded in the north-eastern area (61.6 and 86.1) In the regional comparison, the conditions of Calabria, Campania and Sicilia are more difficult, and those of Trentino-Alto Adige are more favorable, especially for the Province of Trento, Valle d'Aosta and Friuli-Venezia Giulia.

In brief

In 2018 signs of recovery in GDP per capita, while labour productivity still remained.

The annual growth rate of real GDP per capita showed improvement in the last three years (+1.0%). The value added per employed person was substantially stationary.

Material consumption in sharp decline compared to fifteen years ago.

The domestic material consumption per capita, as well as per unit of GDP, has almost halved over the last fifteen years, settling in 2017, on 8.16 tons per inhabitant and 0.31 tons per thousand euros.

Employment growth continues, but with gender and age differentials.

The employment rate continued to grow also in 2018 (63%; +0.7 compared to 2017), for the first year recovering the pre-crisis levels. However, the gender and age differences with respect to the EU average are still relevant.

The unemployment rate continues to fall, but in 2018 it was still higher than the pre-crisis levels.

In 2018, the unemployment rate reached 10.6% (-0.6 points compared to 2017; +3.9 compared to 2008). However, the gap between the Italian and European unemployment rate is equal to +3.6 percentage points and Italy ranks third in the European ranking by level of unemployment rate.

In Italy, non-participation rate is almost double compared to EU, with higher differentials than the unemployment rate.

The percentage of NEETs increased compared to 2004.

Although falling from 2015, in Italy, in 2018, the share of NEETs between 25-29 years of age reached the highest value in the EU (30.9%).

In the last year, total government spending in employment programs and social protection from unemployment declined.

Despite the growth compared to 2010, in 2017, the share of public spending for employment measures and for the social protection of the unemployed decreased, both with respect to public spending and to GDP.

SDG Ref.	INDICATORS	VARIATION							
		long term		medium term			short term		
		2007-2017		2007-2012		2012-2017		2016-2017	
8.4.2									
	Domestic material consumption per capita								
	Domestic material consumption per GDP								
8.5.2									
	Unemployment rate		a		b		c		d
	Non-participation rate		a		b		c		d
	Employment rate (aged 20-64)		a		b		c		d
8.6.1									
	People not in education, employment, or training (NEET) (aged 15-29)		a		b		c		d
8.8.1									
	Incidence rate of fatal occupational injuries or injuries leading to permanent disability						e		f
8.10.1									
	Number of branches per 100,000 inhabitants								
8.b.1									
	Total government spending in employment programmes and social protection from unemployment as a proportion of the national budgets								

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2008-2018
(b) 2008-2013
(c) 2013-2018
(d) 2017-2018
(e) 2011-2016
(f) 2015-2016

GOAL 9

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION[1]

Goal 9 focuses on infrastructure, innovation and industrialisation, the essential drivers of sustainable development. It is a cross-sectional Goal of the 2030 Agenda and preparatory to reaching other Goals. Strengthening and modernising infrastructure is necessary to support over time the services – such as health, education, energy and water supplies, safety and justice, transportation, waste management, etc. - that encourage economic competitiveness and social well-being. The development of 'quality, reliable, sustainable and resilient' infrastructure must ensure equal access opportunity to all potential users. The promotion of industrialisation and, more generally, of productive activity - primary sources of employment and income and support for living standards - must be associated with inclusion and sustainability Targets. In particular, inclusive and sustainable industrialisation is encouraged by investments in modernising infrastructure, as well as by technological, innovative and research capabilities of the production system. Target 9.5 is specifically dedicated to strengthening Research and Development (R&D), as scientific and technological progress is an important factor in economic and productivity growth, social development and environmental protection. Targets promoting research, innovation, infrastructure and technology, especially ICT (Information and Communications Technology), are addressed to developing countries, via economic and technological support from the more developed countries.

1 This section was edited by Paola Ungaro with contributions from Gaetano Proto, Chiara Rossi, Giampiero Siesto and Valeria Mastrostefano.

Targets

Goal 9 is broken down into eight Targets; three refer to means of implementation.

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.

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.

Indicators released by Istat

Fourteen statistical measures are released by Istat for Goal 9, referring to six of the eight Targets.

Table 9.1 - List of SDGs indicators and indicators released by Istat

Indicators	Comparison to the SDG indicator	Last available value
SDG 9.1.2 - Passenger and freight volumes, by mode of transport		
Passenger volumes, by mode of transport (Istat, 2017, thousands)	Proxy	*
Freight volumes, by mode of transport (Istat, 2017, thousands)	Proxy	1,456,003
SDG 9.2.1 - Manufacturing value added as a proportion of GDP and per capita		
Manufacturing value added as a proportion of total value added (Istat, 2017, %)	Proxy	16.7
Manufacturing value added per capita (Istat, 2018, euro)	Proxy	4,357.3
SDG 9.2.2 - Manufacturing employment as a proportion of total employment		
Manufacturing employment as a proportion of total employment (Istat, 2018, %)	Identical	15.6
SDG 9.4.1 - CO_2 emission per unit of value added		
CO_2 emission per unit of value added (Istat, 2017, tonn/mil of euro)	Identical	178.3
SDG 9.5.1 - Research and development expenditure as a proportion of GDP		
R&D intensity (Istat, 2016, %)	Identical	1.4
Product and/or process innovative enterprises (per 100 enterprises) (Istat, 2014/2016, %)	National context	38.1
SDG 9.5.2 - Researchers (in full-time equivalent) per million inhabitants		
Researchers (in full time equivalent) (Istat, 2016, per 10,000 inhabitants)	Identical	22.0
Impact of knowledge workers on employment (Istat, 2018, %)	National context	17.3
SDG 9.b.1 - Proportion of medium and high-tech industry value added in total value added		
Proportion of medium and high-tech industry value added in total value added (Istat, 2016, %)	Identical	32.2
SDG 9.c.1 - Proportion of population covered by a mobile network, by technology		
Households with fixed and/or mobile broadband connection (Istat, 2018, %)	Proxy	73.7
Enterprises with at least 10 persons employed with connection to the Internet via fixed and/or mobile broadband (%) (Istat, 2018, %)	Proxy	94.2
Enterprises with at least 10 persons employed with web site or a homepage (%) (Istat, 2018, %)	Proxy	71.4

* Please see the data table.

Five indicators correspond exactly to the ones in the SDGs: Manufacturing employment as a proportion of total employment (9.2.2), CO2 emission per unit of value added (9.4.1), R&D intensity (9.5.1), Researchers (in full time equivalent) per 10,000 inhabitants (9.5.2), and the proportion of MHT industry value added in total value added (9.b.1). The remaining indicators are proxies or in the national context. In this edition, two new indicators have been included for the SDG 9.c.1: Percentage of enterprises with at least 10 persons employed with connection to the Internet via fixed and/or mobile broadband and Percentage of enterprises with at least 10 persons employed with web site or a homepage.

Focus

SDG 9.5.1 - Research and development expenditure as a proportion of GDP
SDG 9.5.2 - Researchers (in full-time equivalent) per million inhabitants

The SDGs indicators adopted for monitoring Target 9.5 – addressed to the promotion of scientific research, technological capabilities and innovation – refer to the inputs of R&D sector[2], in terms of both financial resources (R&D intensity) and human resources (number of researchers per inhabitant). R&D intensity, in particular, is calculated as the percentage ratio of spending on research and development to GDP. Both indicators refer to activities performed in enterprises, public institutions, universities and private non-profit institutions.

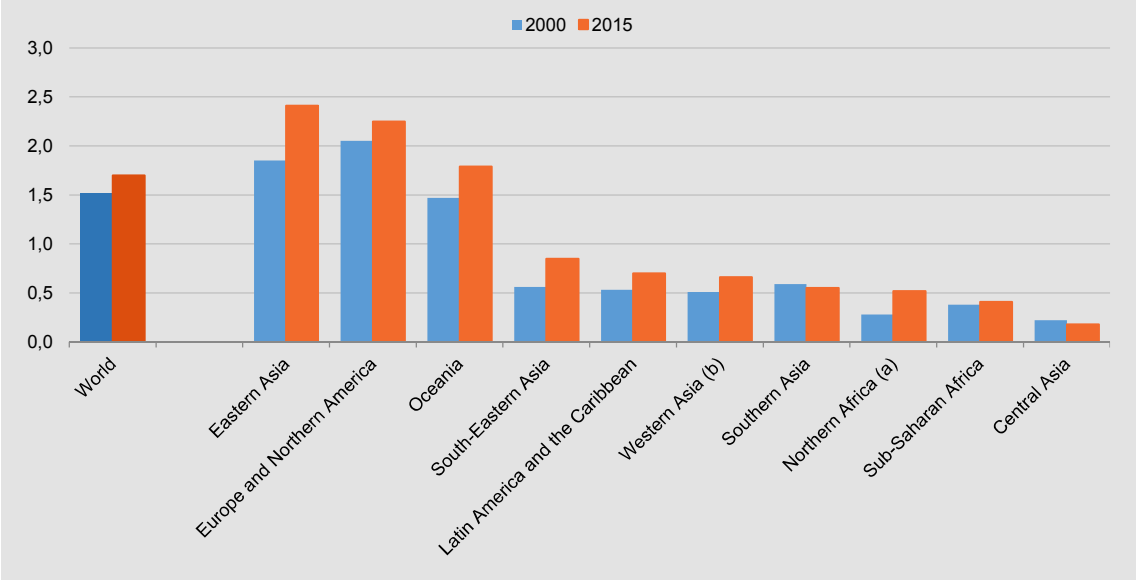
In 2015, the expenditure on research and development amounted to 1.7% of world GDP; the number of FTE researchers was 11.5 units per 10,000 inhabitants. Compared to 2000, R&D intensity increased worldwide by 0.2 percentage points while the number of researchers per 10,000 inhabitants increased by about 40%. The temporal dynamics have only marginally reduced a strong polarization between a small number of geographic areas where high-research-intensity economies prevail, and the rest of the world characterized by a marginality of the R&D function. In fact, changes over time led to gains in the areas traditionally richer in resources and to the strengthening of emerging areas, while the more disadvantaged areas made limited progress. Among the latter Central Asia, which devoted only 0.2% of GDP to research, Sub-Saharan Africa (0.4%) and Northern Africa (0.5%) (Figure 9.1). The position of the macro regions varies only slightly when considering the number of researchers per 10,000 residents (Figure 9.2), but the distances are even more pronounced.

South Asia (0.6%) Latin America and Western Asia[3] (both 0.7) and Southeastern Asia (0.9) are at higher levels but quite far from the average. Indeed, the global R&D research intensity level is on the rise due to Eastern Asia, which registered 2.5%, thanks to the significant contribution of the Republic of Korea and Japan (respectively 4.2 e 3.3%), by Europe and North America (2.3% in total; 2.8% for the United States) and Oceania (1.8).

2 The guidelines and definitions adopted for R&D measurement, by the United Nations, Eurostat and Istat, are drawn from the OECD's Frascati Manual (1963), the seventh and final edition of which has been published in 2015. Expenditure for R&D refers to intramural activity (performed by each institution/enterprise with its own personnel and equipment); researchers are expressed in FTE (full-time equivalent), in relation to the average time actually spent each year on R&D activity.

3 In particular, the high performance of the whole Western Asia is influenced by Israel, the State with the higher R&D intensity in the world (4.3%).

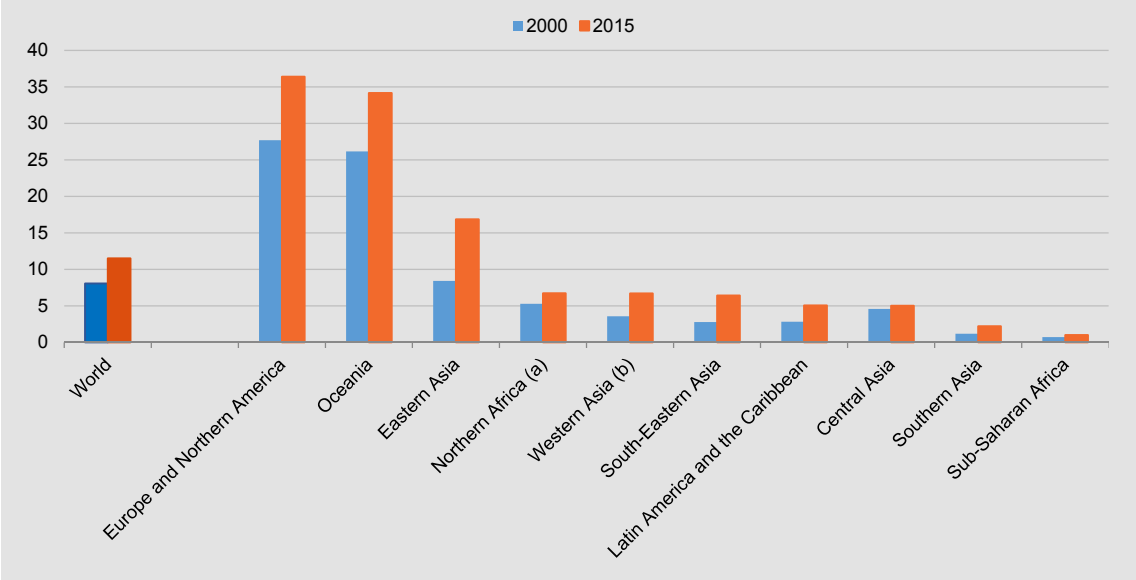
Figure 9.1 - R&D intensity by geografic area. Years 2000 e 2015 (%)



Source: https://unstats.un.org/sdgs/indicators/database/
(a) Including Sudan.
(b) Excluding Armenia, Azerbaijan, Cyprus, Israel and Georgia.

Even if at modest levels compared to the world average, the incidence of researchers in the population is rising in Latin-American and the Caribbean and Central Asia (5), Southeastern Asia (6.4), Northern Africa and Western Asia (both about 7). South-East Asia stands out as the macro-region characterized by the highest increase in research personnel, which doubled, compared to 2000. The European and North American areas, with 36 researchers per 10,000 inhabitants, and Oceania (34) stand out in the ranking; in a more distant, but still privileged, position is Eastern Asia, thanks to the strong growth recorded compared to 2000 (from 8.4 to 16.9 researchers per 10,000 inhabitants).

Figure 9.2 - Researchers (FTE) by geografic area. Years 2000, 2015 (per 10,000 inhabitants)

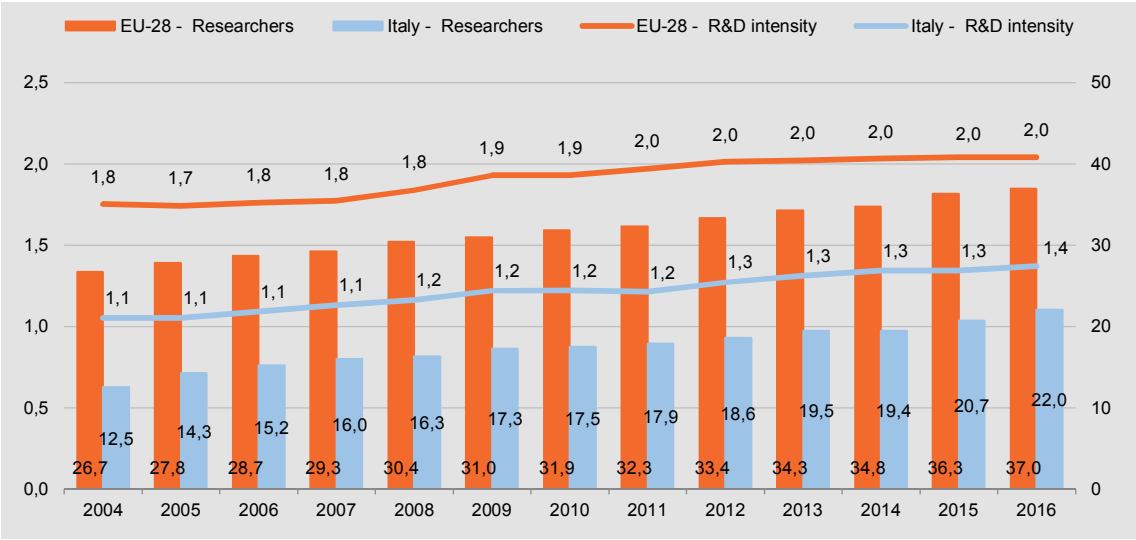


Source: https://unstats.un.org/sdgs/indicators/database/
(a) Including Sudan.
(b) Excluding Armenia, Azerbaijan, Cyprus, Israel and Georgia.

In terms of European policy, an important step towards strengthening R&D is provided by the 2020 Strategy and, in particular, by Flagship Initiative Innovation Union (COM(2010) 546 final). The initiative places innovation at the centre of European development policies, not only as a key element of competitiveness and fight of the Union's economic and employment crisis, but also as a means for tackling problems related to climate change, shortages of energy and resources, health and aging[4]. Horizon 2020, the EU framework program for research and innovation for the period 2014-2020, has provided for important financings, as well as Horizon Europe that will succeed it.

Despite the strong impulse of European policies to strengthen R&D, the share of investments compared to GDP shows, over time, a growth limited and far from the trajectory that would have been necessary to reach the 2020 Targets set, at EU and national level, by the Strategy itself (Figure 9.3). In fact, the average EU research intensity grew from 1.75 in 2004 to 2.04 in 2015 (+0.3 percentage points), marking zero growth for 2016 and placing itself in a position very far from the close Target of 3% for 2020. In the same period, the number of researchers increased from 27 to 37 units per 10,000 inhabitants, with a percentage growth of almost 40%.

Figure 9.3 - R&D intensity (%) **and researchers** (in full time equivalent per 10,000 inhabitants) **in the EU and Italy. Years 2004-2016**



Source: http://ec.europa.eu/eurostat and Istat processing on Eurostat data

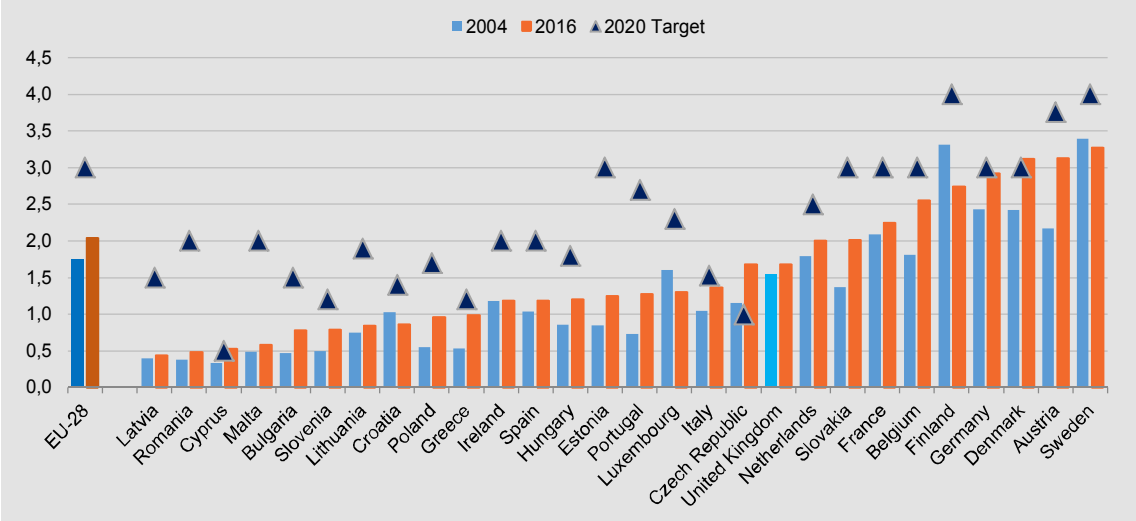
Following a trend and an increase in line with the European average, the incidence of spending on R&D on GDP grew in Italy from 1.1% to 1.4% (+0.3 compared to 2004 and + 0.03 compared to 2015). A more intense dynamic characterizes the growth of the incidence of researchers, from 13 to 22 per 10,000 inhabitants, with a percentage increase of almost 80%. R&D intensity grew especially in Austria, which gained almost one percentage point, in Belgium Denmark, Portugal and Slovenia. In terms of personnel, the largest percentage

4 The strategy identifies the following as tools for promoting technical-scientific development and innovation: protection/ increases in investments in education, R&D, innovation and ICT, improvements to educational systems at all levels (especially academic), financial support of the private sector and specifically of SMEs, strengthening of cooperation between the scientific world and the business world. The guidelines are directed at overcoming the fragmentation that characterises national research and innovation systems, at establishing a European research and innovation space to allow free circulation of ideas and skills, and at establishing European partnerships related to specific subjects.

increase was recorded in Czech Republic, Portugal and Slovenia, which doubled their number of researchers per 10,000 residents. Luxembourg and Finland have suffered a contraction in both spending and in personnel, Croatia in research intensity and Romania in personnel.

The relatively slow dynamics that characterises many European countries does not help the EU in comparison to competitors such as South Korean, Japan and the United States, whose performances are only approached by a few Member States. These are Denmark, Finland and Sweden, which are at the top of the European ranking for both indicators analysed, with a number of researchers almost double than average (79 out of 10,000 inhabitants in Denmark, 72 in Sweden and 66 in Finland) and a research intensity of about 3% of GDP (Figure 9.4 and 9.5). The R&D resources are also high in Austria (second in the ranking of research intensity and fourth in the number of researchers on the population), and Germany (respectively fourth and fifth place).

Figure 9.4 - R&D intensity by country. Years 2004, 2016 (%)

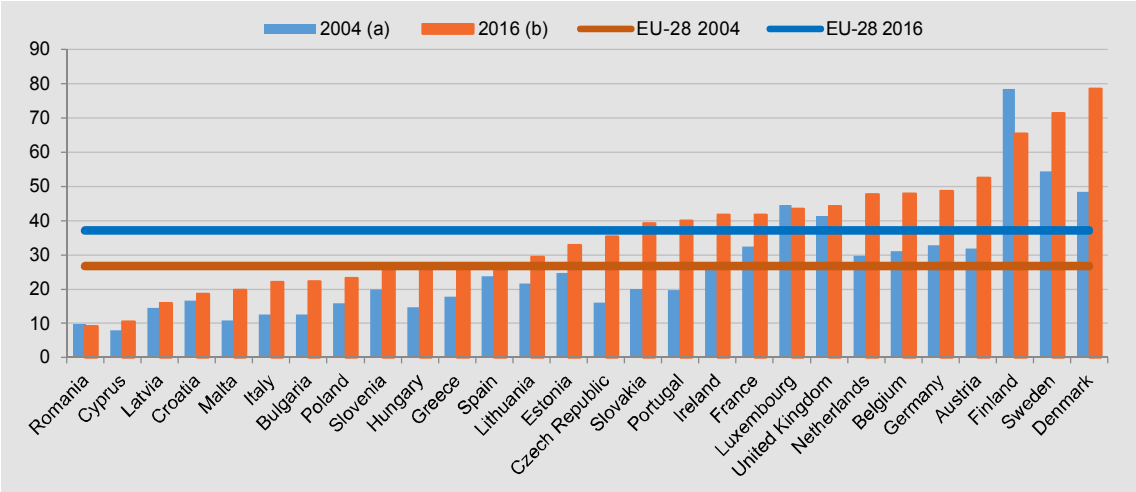


Source: http://ec.europa.eu/eurostat

The intensity of research places our country in a median position, but in terms of personnel, Italy is at the bottom of the ranking, with an incidence of researchers on the population much lower than that of other large European countries, such as France and Germany, and just a little over a quarter of that of Denmark, Sweden and Finland. The gap in terms of human resources points out a structural delay in the Italian R&D system, which has not yet been filled, despite the strong growth of researchers recorded from 2004 to the present. Nevertheless, in terms of distance between R&D intensity in 2016 and the 2020 Target, with a gap of -0.2 percentage points compared to the Target of 1.5%, Italy, along with Cyprus, Germany, Denmark and Greece[5], is in the group of countries nearly reaching the full national Target. The situation in Estonia, Romania, Portugal, Malta and Finland is very different. The latter country, in particular, despite the wealth of means, from 2011 was affected by a contraction in financial resources, which led it to lose a percentage point of research intensity between 2010 (3.7) and 2016 (2.7).

5 The Czech Republic can be added to these countries, as it exceeded the 1% Target, in reference to the public sector only.

Figure 9.5 - Researchers (FTE) by country. Years 2004,2016 (per 10,000 inhabitants)



Source: http://ec.europa.eu/eurostat
(a) For Greece and United Kingdom data refer to 2005.
(b) For France data refer to 2015.

The variety in the stage of development in European R&D systems also reflects the countries' differentiated distribution of resources in different sectors (enterprises, private non-profits, public and academic) and in relation to different financing sources (private, public, university and foreign). Another determining factor, in enterprises R&D activity, is the weight taken on by the highest research intensity sectors, as well as the sizes of the enterprises, being the investment capacity in R&D higher in large companies. In 2016 in Italy, the enterprises sector conducted the majority of R&D activity, with a share of investments of more than 60% of the total (0.83% of GDP), followed by the academic sector (24%) and public institutions (13%), where the private non-profit sector gets marginal financing (2.5%). The limited Italian growth in the last decade was affected by the drop in public allocations for research that led to a contraction in public sector spending (-0.02 percentage points of GDP between 2000 and 2016), and a rather modest increase by academic allocations (+0.02). The business sector, with a growth in research intensity of 0.25 percentage points, significantly contributed to the overall capacity of the Italian R&D system, including during the crisis years.

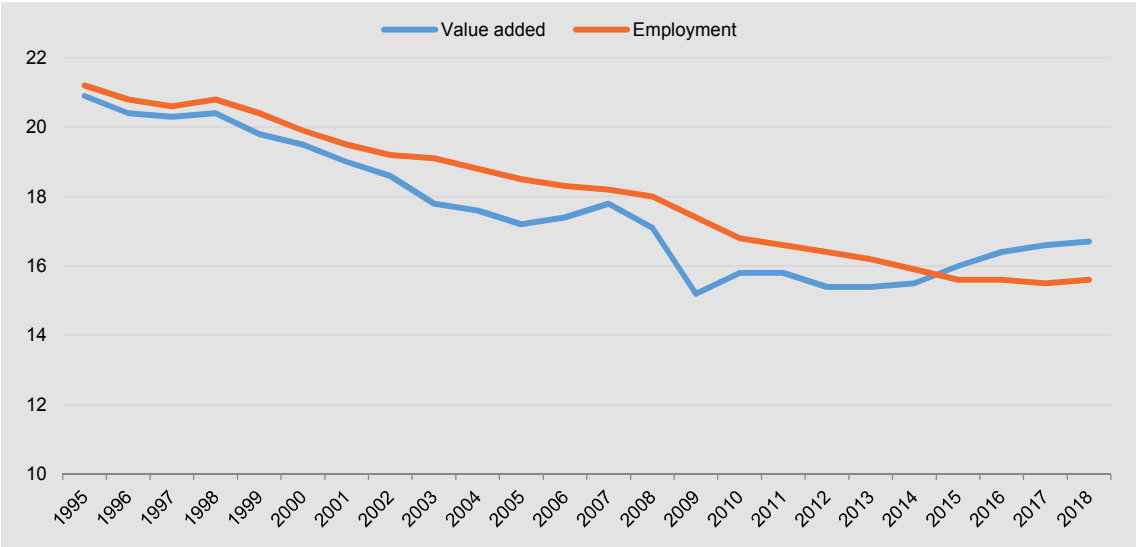
Other indicators

SDG 9.2.1 - Manufacturing value added as a proportion of GDP and per capita
SDG 9.2.2 - Manufacturing employment as a proportion of total employment

Target 9.2 aims to promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, doubling it in least developed countries. One of the indicators adopted by Istat for monitoring the Target is proxy (9.2.1 - Manufacturing value added as a proportion of total value added[6]), while the other two are identical (9.2.1 - Manufacturing value added per capita and 9.2.2 - Manufacturing employment as a proportion of total employment).

In the 1995-2018 period in Italy the trend in manufacturing industry was in line with the transformations that have affected advanced economies over the past decades, showing a growing tertiarization. The share of manufacturing in total employment has been decreasing, in fact, almost linearly since 1998, when employment in manufacturing represented 20.8% of the total, to 15.6% in 2015 (Figure 9.6). The most relevant downturn took place in the early years of the economic and financial crisis started in 2008 (-0.6 percentage points both in 2009 and 2010). The last four years, characterized by economic recovery, showed a substantial stationarity of the indicator, which stood at 15.5 employed in the manufacturing sector out of 100 in the total economy.

Figure 9.6 - Manufacturing value added and employment. Years 1995-2018 (% of total economy)



Source: Istat, Input di lavoro (PSN: IST-00679), Produzione e valore aggiunto della trasformazione industriale (PSN: IST-00570), Produzione e valore aggiunto del settore energetico (PSN: IST-00571)

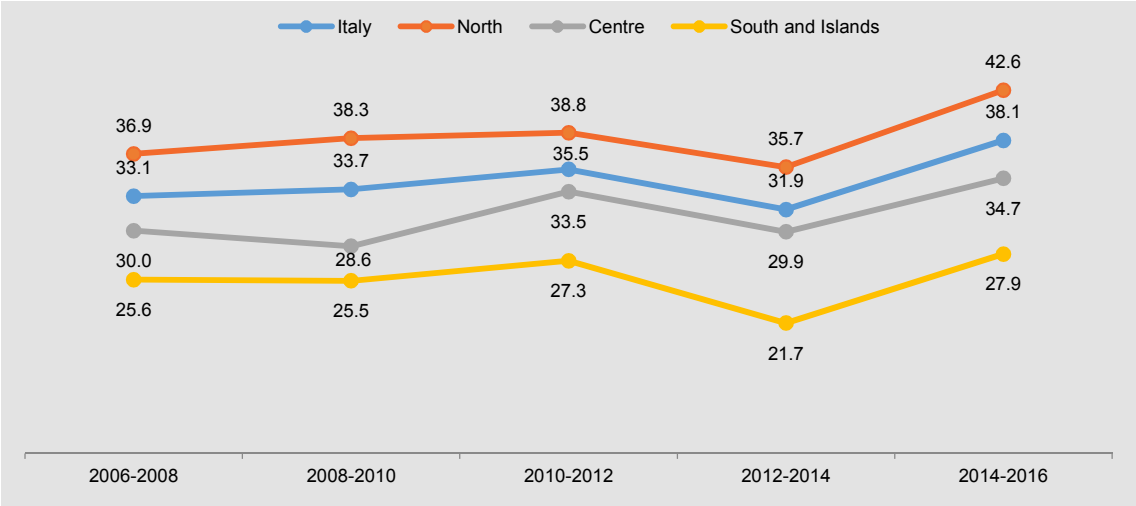
6 The indicator calculated by Istat differs from the SDG because it compares the value added of manufacturing to total value added, rather than to GDP as envisaged by the UN. The reason of using value added rather than GDP is to eliminate possible distortions deriving from different regional distributions in product taxes and contributions to products due to administrative factors.

Over the period considered, the decrease of the manufacturing share of value added was lower than that of employment: -4.2 against -5.6 percentage points. The trend in the manufacturing share of value added was in fact more discontinuous, marked by more intense downturns in 2003 (-0.8 percentage points) and especially in 2009 (-1.9), and by a recovery, started in 2014, which has brought the level of the share to 16.7% in 2018. This is partly due to the greater reactivity to the economic cycle of value added compared with employment and to the dragging effect due to foreign demand. Nonetheless, the recovery in value added over the last three years is also attributable to a relative productivity recovery by the manufacturing industry, after years of stagnation.

SDG 9.5.1 - Research and development expenditure as a proportion of GDP (National context indicators)

In Italy, the enterprises sector is an important driver for the overall R&D system, due to the significant contribution to investment and to the continuing trend towards growth. The most active enterprises in R&D are the largest ones, often multinational companies, operating in the more advanced sectors. The percentage of enterprises (with at least 10 persons employed) that have introduced product and/or process innovation in a three-year period on total enterprises (with at least 10 persons employed) is a useful indicator for describing the Italian context, which is characterised by a productive structure where small and medium enterprises predominate.

Figure 9.7 - Enterprises that have introduced product and/or process innovation (a) by NUTS 1. Years 2006/2008-2014/2016 (%)



Source: Istat, Rilevazione statistica sull'innovazione nelle imprese (PSN: IST-00066)
(a) Including enterprises with product/process innovation activities that have not ended within the three-year period of reference, because they have been abandoned or suspended or still in progress.

The incidence of enterprises that have introduced product and/or process innovation (Figure 9.7) grew during the period from 2006/2008 to 2010/2012, from 33.1% to 35.5%, then suffering a decrease in 2012-2014 (31.9%). The last three-year period (2014-2016) was marked by a strong growth (+6.2 percentage points) which brought up to the level of 38.1 enterprises per 100. The companies in the industrial sector benefited from the growth in particular (from 40.4% in 2012/2014 to 49.5% in 2014/2016), as well as the companies

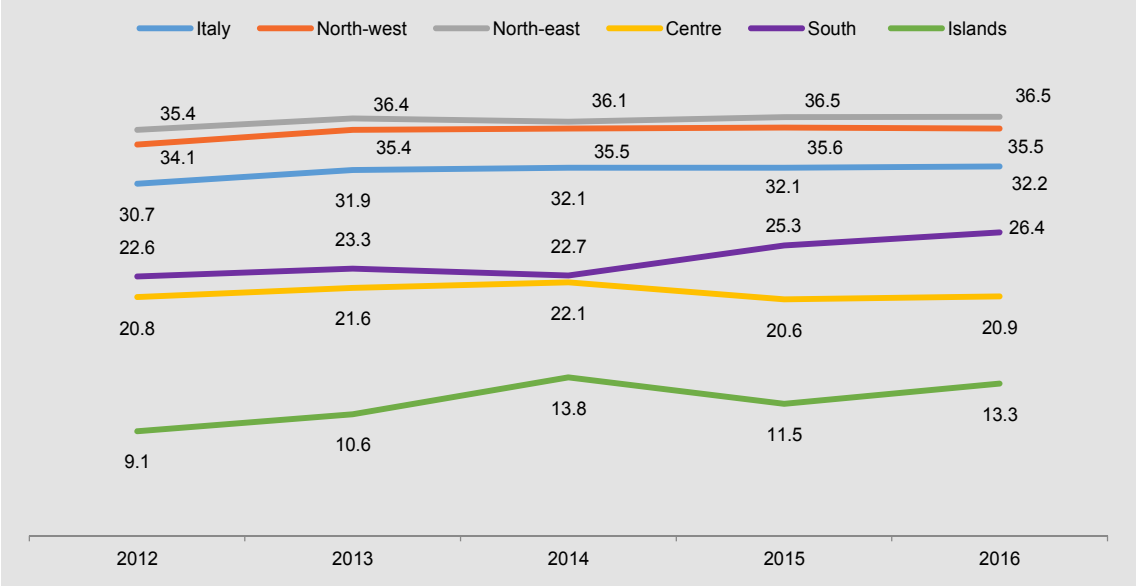
with a number of employees between 10 and 49 (from 28.7% to 35%). It is also due to effects of sector composition of the productive system that the propensity for innovation is higher in the North (with the exception of Valle d'Aosta), with 43 innovative enterprises out of 100, and lower in the Centre (35) and South (28).

SDG 9.b.1 - Proportion of medium and high-tech industry value added in total value added

The proportion of medium and high-tech (MHT) industry value added in total manufacturing value added is an indicator of the technological progress level of industrial development, selected within the SDGs framework to monitoring of the 9.b.1 Target (one of the means of implementation of 2030 Agenda aiming at supporting the developing countries). The indicator provides information about the state of progress of industrial countries with respect to the structural transition of economic systems from activities based on low-tech resources to MHT activities. A modern and technologically advanced production structure offers better opportunities for sustainable development, considering also the higher technological intensity and labour productivity of MHT activities.

The percentage of Italian MHT industry value added in the total manufacturing value added increased, from 2012 to 2016, from 30.7% to 32.2%, with a growth of 1.5 percentage points (Figure 9.8). The Southern areas recorded a higher than the Italian average growth, equal to +3.8 percentage points for the South and +4.2 for the Islands. This growth has not offset the gap with the northern geographical area. In fact, North is the area with the highest technological intensity, with an incidence of value added in the MHT sector (36.5 for the North-East and 35.5 for the North-West) almost triple compared to the Islands (13.3%) and much higher than the one in the South (26.4) and the Centre (20.9%). Despite the effect of a different sectorial composition by region of productive system, the trend in the share of the MHT sectors by territory also reflects the impact of innovation, which is concentrated mostly in the North.

Figure 9.8 - Proportion of medium and high-tech industry value added in total value added by NUTS 1. Years 2012-2016



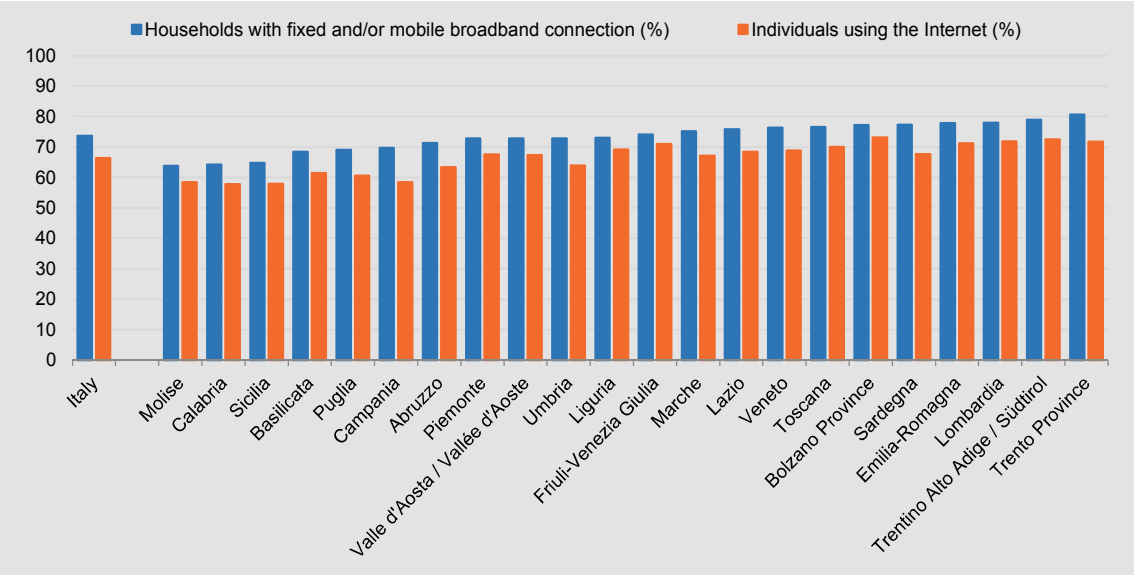
Source: Istat processing on Frame SBS and Frame Territoriale

SDG 9.c.1 - Percentage of the population covered by a cellular network, by technology

Access to information and communications technology, and especially Internet access (as indicated by Target 9.b.1) is an important means of social inclusion, thanks to the many resources made available to its users, in terms of acquiring knowledge, using services, professional opportunities and, in general chances for enrichment in all spheres of social activity. Digital transformation is a key factor in the transition to innovative and modern economic systems, and an indispensable means for growth in the productive sector.

The definition of the Digital Agenda for Europe[7] and of a Digital Single Market Strategy for Europe[8], aimed at strengthening the EU's position as a leader in the digital economy, clearly demonstrate the investment of policies in the development of digital solutions. In line with European guidelines, in 2012 Italy defined a national Digital Agenda (LD no. 5/2012)[9], aimed at strengthening ICT technologies and overcoming our country's delay in terms of investments, infrastructure and technology penetration into the population and the production system, in order to encourage innovation, employment, social progress and economic growth. Moreover, the National Industry 4.0 Plan, launched in 2016 by the Minister of Economic Development and the Presidency of the Council of Ministers, embodies a new industrial policy strategy aimed at promoting digitalization in the Italian productive system.

Figure 9.9 - Households with fixed and/or mobile broadband connection and individuals using the Internet (a)**, by NUTS 2. Year 2018** (%)



Source: Istat
(a) Percentage of individuals aged 6 years and over using the Internet in the last 3 months.

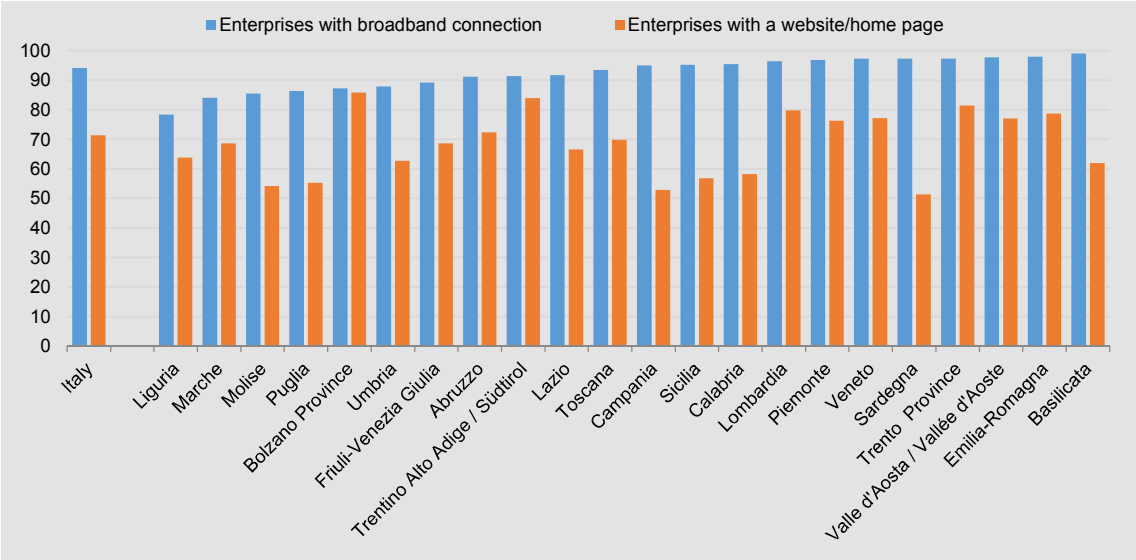
7 This is one of the seven flagship initiatives of the 2020 Strategy (COM(2010)245 final).

8 'A Digital Single Market is one in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, and a high level of consumer and personal data protection, irrespective of their nationality or place of residence.' (COM(2015) 192 final). See also 'Mid-Term Review on the implementation of the Digital Single Market Strategy' (COM(2017) 228 final).

9 See also the Strategy for digital growth 2014-2020 by the Presidency of the Council of Ministers (2015).

The percentage of households with fixed and/or mobile broadband connection grew very quickly during the last years, from 43.4% in 2010 to 73.7% in 2018. An expansion of the number of individuals using the Internet (SDG indicator 17.8.1) is associated with the growing spread of ICT infrastructure to use the Internet: this increased, in fact, from 46.8% in 2010 to 66.4% in 2018. The expansion of ICT in the productive world anticipated the one that has invested the population. In 2018, the number of enterprises with connection to the Internet via fixed and/or mobile broadband was equal to 94.2 out of 100, while the enterprises with a website/home page (or at least one Internet page) were 71.4 out of 100.

Figure 9.10 - Enterprises (a) **with broadband connection and with a website/home page (or at least one Internet page) Year 2018** (%)



Source: Istat
(a) Enterprises with at least 10 persons employed in Industry and Services sectors.

In 2018, the regional differences were still substantial, in terms of both infrastructure and use of new technologies, with the southern geographical area marked a delay in comparison to the central area and especially to the northern area (Figures 9.9 and 9.10).

In brief

Manufacturing industry down over the last fifteen years.

In line with the growing tertiarization of advanced economies, between 1995 and 2018, Italy marked a downsizing of manufacturing sector in terms of share of both employment and value added on the total.

Decreasing CO_2 emissions.

The intensity of CO_2 emission on value added decreased in the last ten years, reaching the minimum in 2017. Italy is one of the European countries with the lowest intensity of carbon dioxide emissions.

The Italian R&D system shows a structural delay compared to EU.

Despite the increase recorded by R&D personnel, the gap is particularly marked in terms of human resources, with an incidence of researchers on population of just over a quarter compared to that of Denmark, Sweden and Finland.

The incidence of enterprises that introduced technological innovation strongly grew in the last three-year period.

Thanks to the wider contribution of industrial enterprises and those with a number of employees between 10 and 49, the number of innovative enterprises grew in 2014-2016 by 6.2 percentage points, reaching 38.1 companies out of 100.

Growth of the percentage of Italian MHT industry value added in the total manufacturing value added between 2012 and 2016.

Despite an increase above the average profile by the southern geographical area, the North has a higher technological intensity than the Centre and, even more, than the South and the Islands.

Expansion of ICT, but still with large territorial differences.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
9.4.1					
	CO_2 emission per unit of value added				
9.5.1					
	R&D intensity	a	b	c	d
	Product and/or process innovative enterprises (per 100 enterprises)			e	f
9.5.2					
	Researchers (in full time equivalent)			c	d
	Impact of knowledge workers on employment	g	h	i	j
9.c.1					
	Households with fixed and/or mobile broadband connection (%)			i	j
	Enterprises with at least 10 persons employed with connection to the Internet via fixed and/or mobile broadband (%)	g	h	i	j
	Enterprises with at least 10 persons employed with web site or a homepage (%)	g	h	i	j

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2006-2016
(b) 2006-2011
(c) 2011-2016
(d) 2015-2016
(e) 2010/12-2014/16
(f) 2012/14-2014/16
(g) 2008-2018
(h) 2008-2013
(i) 2013-2018
(j) 2017-2018

GOAL 10

REDUCE INEQUALITY
WITHIN AND AMONG COUNTRIES[1]

Goal 10 involves modification of policies and legislation to reduce disparities based on income, gender, age, disability, race, class, ethnicity, religion and opportunity and to increase the income of the poorest 40% of the population. It is also aimed at improving the regulation and monitoring of financial markets and institutions. Goal 10 addresses inequalities between countries by encouraging aid for development and direct investments in the neediest nations, promoting different treatment of businesses and enhancing the representation of developing countries in the decision-making process of global economic and financial institutions. Goal 10 promotes social inclusion globally with a special focus on migration and migrant remittances,

The international community and the most vulnerable nations have made significant progress in removing people from poverty, but highly unequal situations do persist, as do large disparities in access to health care, education and other services. Consensus is increasing on the fact that economic growth is not sufficient to reduce poverty if it is not inclusive growth and if it does not involve all three dimensions of sustainable development - economic, social and environmental. In particular, marked income disparities threaten social cohesion, affect economic growth and progress in reducing poverty and improving health and well-being conditions.

1 This section was edited by Barbara Baldazzi and Cinzia Conti with the contribution from: Eugenia Bellini, Francesca Lariccia and Federico Polidoro.

Targets

Goal 10 is articulated into ten Targets, the last three Targets regarding the means of implementation[2].

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 countries 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 mobility 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.

2 The Targets referring to the means of implementation are distinguished by a letter and not by a number.

Indicators released by Istat

Istat releases 14 statistical measures related to five Targets.

Table 10.1 - SDGs indicators and indicators released by Istat

Indicators released by Istat	Relation with SDG indicator	Last available value
SDG 10.1.1 - Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population		
Growth rates of household income per capita among the bottom 40 per cent of the population (Istat, 2016, %)	Identical	4.77
Growth rates of household income per capita among the total population (Istat, 2016, %)	Identical	2.69
Disposable income inequality (Istat, 2016, ratio of income shares)	Proxy	5.9
Adjusted disposable income per capita (Istat, 2018, euro)	National context	22,698
Per capita disposable income (Istat, 2017, euro)	National context	18,505
Purchasing power of households (Istat, 2018, Millions of euros)	National context	1,038,518
SDG 10.2.1 - Proportion of people living below 50 per cent of median income, by sex, age and persons with disabilities		
People at risk of poverty (Istat, 2017, %)	Identical	20.3
SDG 10.4.1 - Labour share of GDP, comprising wages and social protection transfers		
Labour share of GDP, comprising wages and social protection transfers (Istat, 2018, %)	Identical	52.88
SDG 10.7.2 - Number of countries with migration policies that facilitate orderly, safe, regular and responsible migration and mobility of people		
Non EU citizens holding a long-term residence permit (Istat, 2018, n.)	National context	3,714,934
Percentage of Non EU citizens holding a long-term residence permit (Istat, 2018, %)	National context	61.7
New permits (Istat, 2017, n.)	National context	262,770
Number of acquisitions of citizenship (Istat, 2017, n.)	National context	146,605
Percentage of new permits issued for asylum and other humanitarian reasons (Istat, 2017, %)	National context	38.5
SDG 10.b.1 - Total resource flows for development, by recipient and donor countries and type of flow (e.g. official development assistance, foreign direct investment and other flows)		
Total net official development assistance (ODA) to Africa, LDCs, SIDS and Landlocked (Ministero degli Affari Esteri e della Cooperazione Internazionale, 2016, millions of euro)	Identical	(*)

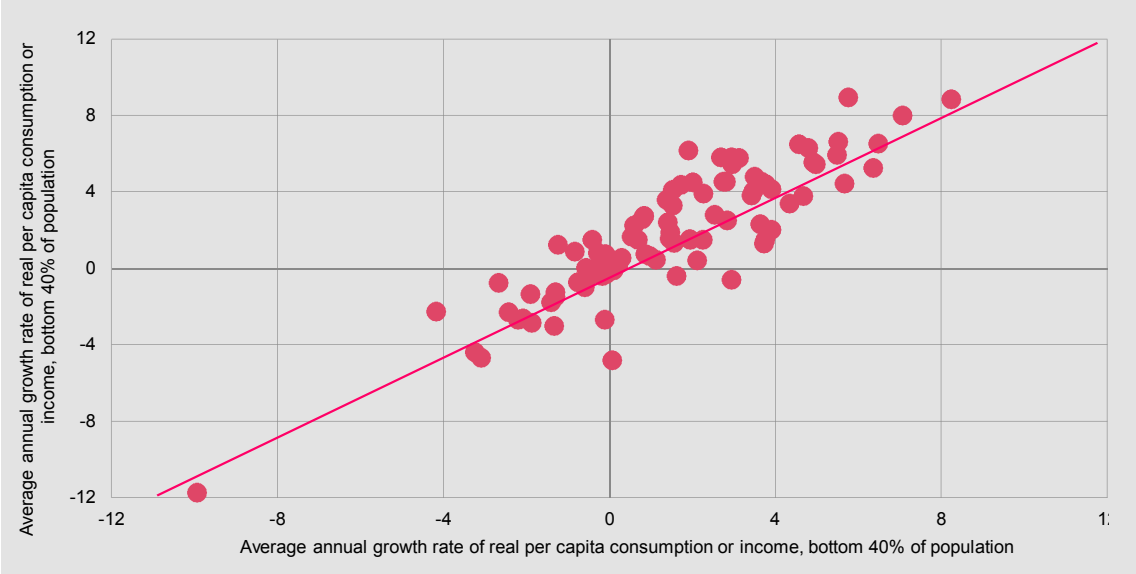
(*) Please see the data table.

Focus

SDG 10.1.1 - Growth rates of household expenditure or income per capita among the bottom 40 per cent of the population and the total population

A first major issue addressed by Goal 10 is income inequality within each country. The growth rate of per capita income3 for the poorest population in a country must be encouraged to grow more rapidly than that of the population as a whole. The graphic that compares the two indicators calculated for the 94 countries in the world for which the UN-SDG database provides data shows that, between 2010 and 2016, the income and/or consumption of the bottom 40 per cent of the population[3] grew faster than the national average in 60 countries. In many countries whose per capita income/consumption grew during this period, growth was faster for the bottom 40 per cent of the population.

Figure 10.1 - Countries by annual change in income for the poorest 40% of the population, and for the entire population. Years 2010-2016 (most recent value)



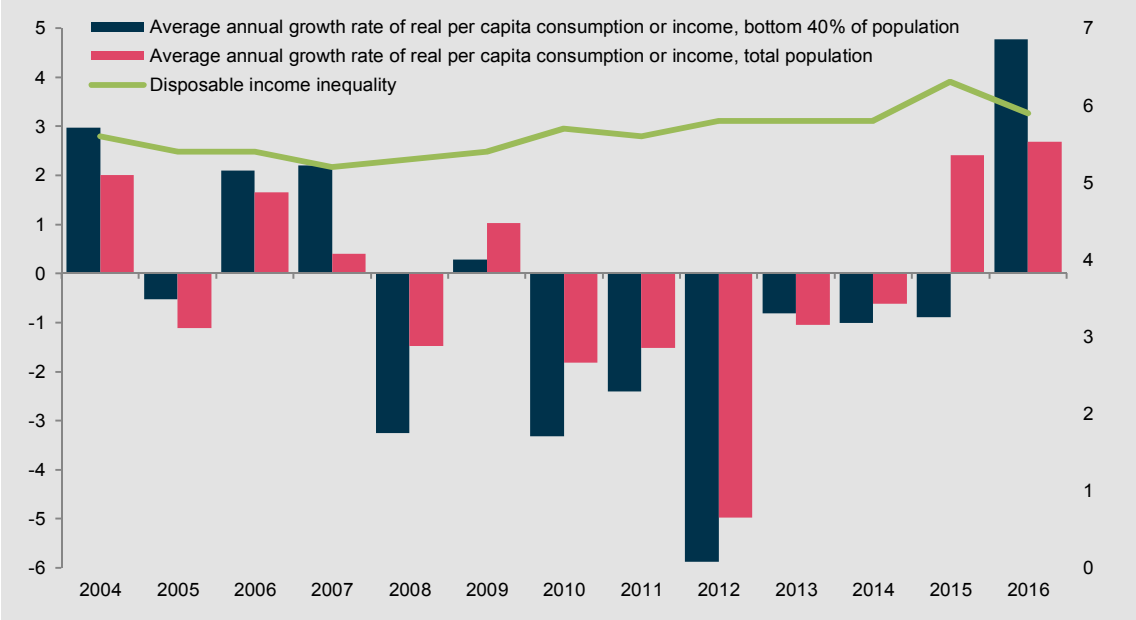
Source: World Bank

In Italy, between 2004 and 2007, the income growth of the relatively low-income population was higher than the growth of overall income. With the beginning of the economic crisis the negative changes were relatively more difficult for the lowest incomes (with a maximum negative for incomes in 2012, when there was a -5% change for the entire population and -5.9% for the lowest-income 40% of the population). This effect came to an end in 2016, the income growth of the relatively low-income population (+4.8) was higher than the growth of overall income (+2.7). At the same time, the inequality in available income[4] followed the same trend, reaching a minimum in 2007 with a value of 5.2, and a maximum in 2015 with a value of 6.3, and descending again to 5.9 in 2016.

3 The indicators were calculated using either income measurements or consumer spending, according to each country's statistical methodology.

4 Inequality in available income is calculated as the ratio of total income equivalent received by 20% of the population with the highest income and that received by 20% of the population with the lowest income.

Figure 10.2 - Annual rate of change of income for the poorest 40% of the population and for the entire population, and index of available income inequality in Italy. Years 2004-2016



Source: Istat, Eu-Silc

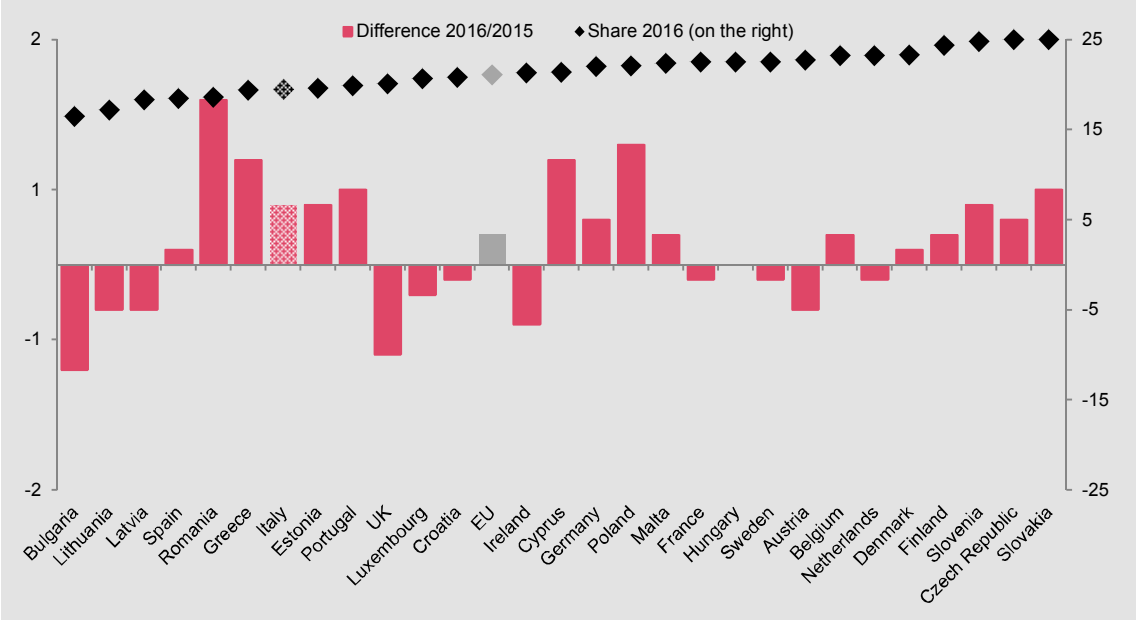
When the regional details are examined, the inequalities are even wider. In 2016, the growth rate in income for the poorest 40% of the population exceeded the growth rate for overall income in 7 regions: Lazio, Molise, Veneto, Abruzzo, Emilia-Romagna, Sardegna and Basilicata. Also, while all the Italian regions saw income growth for the total population in 2016 (except in Emilia Romagna and Basilicata), the change rate in income for the poorest 40% was negative in Valle d'Aosta, Toscana, Calabria and the Province of Bolzano.

Figure 10.3 - Regions by annual rate of change in income for the poorest 40% of the population, and for the entire population. Year 2016

Source: Istat, Eu_Silc

To frame Italy's position on the European playing field, it is helpful to consider another measurement of income inequality, represented by the percentage of available income for the poorest 40% of the population, an indicator used by Eurostat to compare inequality levels among the EU countries. The share of income perceived on average by the poorest 40% of the European population increased slightly in the last year (from 20.5% in 2015 to 21.1% in 2016 for the EU). Nationally, the poorest 40% of the population's share of income varied from 25% in the Czech Republic to 16.5% in Bulgaria in 2016. Italy, with 19.5% of the available income for the poorest 40% of the population, stood below the European average, only above Greece, Latvia, Spain, Romania, Lithuania and Bulgaria. On the opposite, Finland, Slovenia, Slovakia and Czech Republic recorded values above 24%.

Figure 10.4 - Percentage of available income for the poorest 40% of the population in some European countries. Year 2016 and 2015/2016 variation



Source: Eurostat, Eu_Silc

Other indicators

SDG 10.7.2 - Number of countries with migration policies that facilitate orderly, safe, regular and responsible migration and mobility of people

A further important issue addressed by Goal 10 concerns the mobility and migration of people: organized, safe, regular and responsible migration through the implementation of planned and well-managed migration policies.

For Italy, migrations have rapidly changed in recent years. Factors such as the permanent economic crisis, on the one hand, and the conflicts and catastrophes that have affected some areas of the world, on the other hand, have led to a substantial contraction of labor flows and an increase in the immigration of people seeking asylum and protection international. The management of irregular migration flows has become even more complex. On the one hand, the country must face the problems linked to the emergence of unplanned arrivals of people seeking protection; on the other, it must respond to the individual and family needs of immigrants who have long been resident in Italy.

2017 was a particular year for the migratory dynamics involving our country due to two phenomena, which contrast with previous trends: an increase in incoming flows and a simultaneous decrease in acquisitions of citizenship. In the same year, there was an increase in the number of residence permits issued: 262,770, 16% more than in 2016. Only 4.6% of new permits were granted for work reasons, while permits for reasons of asylum and humanitarian protection exceeded 101 thousand new releases (38.5% of the total of new permits). In 2017, the request for asylum and international protection was the first reason for entry for men (54.3%). Persons seeking asylum and international protection were mainly Nigerian, Pakistani and Bengali citizens, (together 41% of incoming flows for asylum seeking and international protection). The largest increases were recorded among the citizens of Bangladesh (+ 96.3%), Guinea (+ 66.0%) and Ivory Coast (+ 40.8%).

Table 10.2 - Non-EU citizens entered Italy in 2017, first ten citizenships and reason for the permit

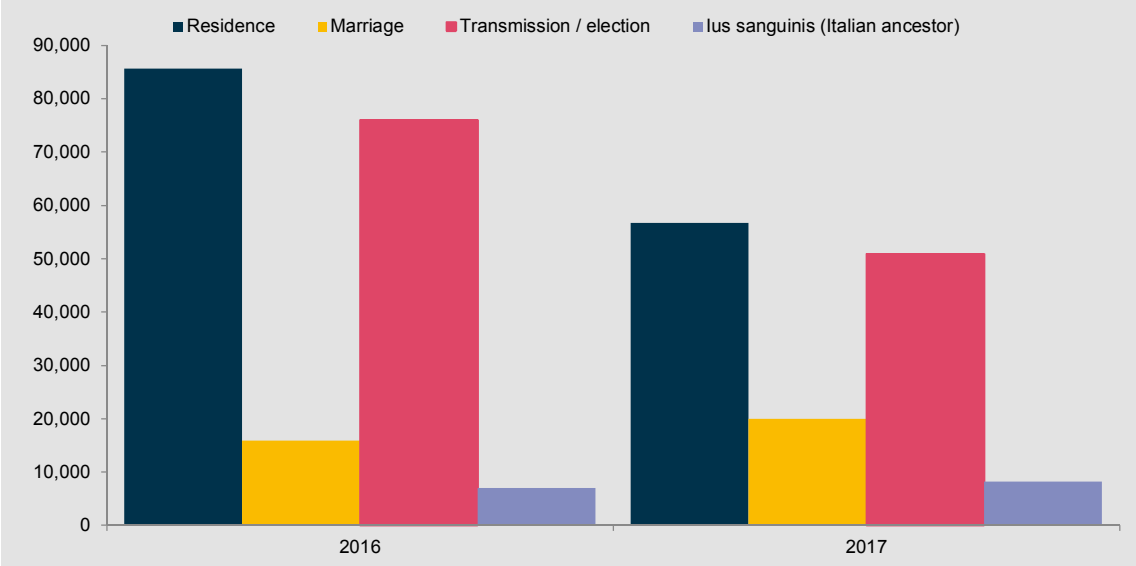
Countries of citizenship	Total	Reason for Permit				
		Work	Family	Study	Asylum / Humanitarian	Other reasons
Nigeria	26.843	0,2	10,7	0,5	85,6	3,1
Albania	20.013	6,3	69,8	1,7	1,7	20,5
Morocco	18.609	4,0	86,7	0,9	5,3	3,2
Pakistan	15.082	1,4	33,7	1,7	61,4	1,8
Bangladesh	14.235	0,9	29,8	0,3	64,9	4,1
Chinese, People's Republic	12.030	4,3	53,3	35,7	3,7	3,0
Senegal	11.239	1,3	26,9	0,2	67,6	4,0
India	8.658	18,7	56,0	15,1	4,1	6,1
United States of America	8.234	34,0	37,6	21,8	0,0	6,6
Gambia	8.162	0,1	1,1	0,2	92,6	6,1
Other countries	*119.665*	*3,9*	*45,0*	*8,3*	*35,4*	*7,4*
Total	**262.770**	**4,6**	**43,2**	**7,0**	**38,5**	**6,7**

Source: Istat elaborations on data from the Ministry of the Internal Affairs

After ten years of growth, the acquisitions of Italian citizenship, in 2017, decreased by 26.4% compared to the previous year, falling to 135,814 (they were almost 185 thousand in 2016). The decrease concerned the acquisitions by residence (-28 thousand) and by transmission by parents (-25 thousand). On the other hand, in absolute and relative terms, marriage acquisitions increased (+4% thousand and + 6.1%). The acquisitions for "ius sanguinis", by descent from Italian ancestors, which particularly concern citizens of Brazilian origin, increased as well.

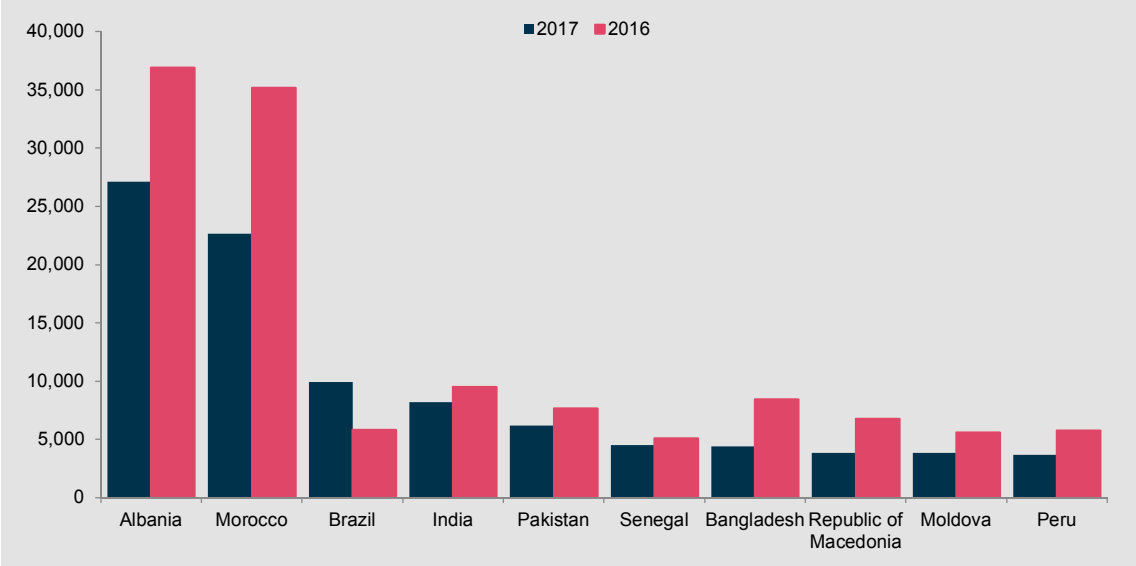
Most of the 2017 citizenship grants involved Albanians (27,112) and Moroccans (22,645). With the exception of Brazilians, for whom 2017 was a year of growth, among all the other major communities a decline was registered.

Figure 10.5 - Acquisitions of citizenship of non-EU citizens, by reason. Years 2011-2016



Source: Istat elaborations on data from the Ministry of the Internal Affairs

Figure 10.6 - Acquisitions of citizenship of non-EU citizens, by citizenship of origin. Years 2016, 2017



Source: Istat elaborations on data from the Ministry of the Internal Affairs

The long-term permits, which in 2017 were 2,255,481, in 2018 were 2,293,159, approximately 62% of the regular presence. For four communities (citizens of Moldova, Ukraine, Albania and Morocco), the share of long-term residents exceeded 70%. For the Ukrainians and the citizens of Moldova, long-term permits increased. For the citizens of Moldova, in the 2017-2018 period, the incidence of long-term residents has increased by more than 4 percentage points. In this way, the Moldovans have become the community with the largest share of long-term stays. Chinese citizens recorded the highest increase in the two-year period 2017-2018, by almost 5 percentage points, but their percentage of long-term residents still remains below the general average.

In brief

In Italy, between 2004 and 2007, the income growth of the relatively low-income population was higher than the growth of overall income. With the start of the economic crisis the negative changes turned to be relatively more difficult for the lowest incomes. **This effect ended in 2016, the income growth of the relatively low-income population (+4.8) was higher than the growth of overall income (+2.7).**

At the same time, the inequality in available income followed the same trend, reaching a minimum in 2007 with a value of 5.2, and a maximum in 2015 with a value of 6.3, and descending again to 5.9 in 2016.

Italy is experiencing a profound change in the migratory phenomena. The last few years have been characterized by an increasing relevance of incoming flows of asylum seekers and international protection. On the one hand, therefore, the country is governed the emergence of non-programmable arrivals, on the other hand it must manage the phenomena of inclusion of persons of foreign origin, now stable in the country. The growth of people with a long-term permit continues. **In 2017, instead, for the first time, after a decade of constant growth, there was a decrease in the number of citizenship acquisitions (-26.4%)**.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
10.1.1					
	Disposable income inequality	a	b	c	d
	Adjusted disposable income per capita	e	f	g	h
	Purchasing power of households	e	f	g	h
10.2.1					
	People at risk of poverty				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2006-2016
(b) 2006-2011
(c) 2011-2016
(d) 2015-2016
(e) 2008-2018
(f) 2008-2013
(g) 2013-2018
(h) 2017-2018

GOAL 11

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE[1]

Goal 11 deals with urban sustainability. Cities play an essential role in achieving the Sustainable Development Goals: half of the world's population and three quarters of Europe's population live in urban areas[2]. In all countries, and to a greater extent in developing countries, there is a growing concentration of the population in urban areas. Cities are responsible for the largest share of energy consumption and carbon emissions, the increasing pressure on the environment and related public health issues and the related problems with public health. Governing urban space is, therefore, a crucial factor of development that poses challenges and opportunities. There are many dimensions that need to be considered in a systematic, inclusive and integrated way to ensure that cities can continue to thrive in a sustainable way. The population living, working or traveling in cities should, in fact, be ensured access to mobility, quality in dwellings and safety, both in terms of structural adequacy of buildings and public and private infrastructure, and in terms of protection from predatory crime, violence or harassment.

Regarding public health, reducing pollution and improving air quality is a central feature, along with waste management, the water cycle and wastewater.

The weakest and most vulnerable groups (people with disabilities, the elderly, children, the poorest part of the population) should be ensured an equal guarantee of access and use of services.

The presence of green areas and public spaces, the protection of cultural and natural heritage, the restoration of degraded areas, and relations with peri-urban and rural areas are essential for the whole community.

On the issue of management and safety of the territory, further elements to be incorporated are: land use, adaptation to climate change and mitigation of its effects, resilience to disasters, hydrogeological risk management (the impact of heavy rains and high temperatures). Therefore, the extent and complexity of the issue of urban sustainability are evident, as well as the relevance of measures to strengthen planning abilities and participatory, integrated management.

1 This section was edited by Giovanna Tagliacozzo, with contributions from Domenico Adamo and Antonino Laganà.

2 Sustainable Development in the European Union. Monitoring report on progress towards the SDGs in an EU context. 2018 edition. Statistical books. Eurostat. https://ec.europa.eu/eurostat/documents/3217494/9237449/KS-01-18-656-EN-N.pdf/2b2a096b-3bd6-4939-8ef3-11cfc14b9329.

Targets

Goal 11 is broken down into ten Targets, the last three refer to means of implementation:

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.

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.

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.

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.

11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels.

11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials.

The Targets defined for monitoring Goal 11 cover multiple dimensions typical of cities. Further Targets relevant to the theme of urban sustainability are also present in other Goals; for example, Target 12.5 on the reduction of waste production through prevention, reduction, recycling and reuse and Target 16.1 on the reduction of all forms of violence.

Target 11.b must be met by 2020.

Indicators released by Istat

Istat releases thirty statistical measures for Goal 11, referring to seven of the ten Targets.

Table 11.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 11.1.1 - Proportion of urban population living in slums, informal settlements or inadequate housing		
Share of total population living in a dwelling with structural or humidity problems (Istat, 2017, %)	Proxy	16.1
Share of total population living in overcrowding dwellings (Istat, 2017, %)	Proxy	27.1
Share of total population living in a dwelling with noise from neighbours or from street (Istat, 2017, %)	Proxy	12.5
SDG 11.2.1 - Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities		
Households with difficulties of links with public transports (Istat, 2018, %)	National context	32.4
SDG 11.3.1 - Ratio of land consumption rate to population growth rate		
Ratio of land consumption rate to population growth rate (Istat, 2011, m^2/inhabitant)	Proxy	364
Soil sealing from artificial land cover per capita (Ispra, 2017, m^2/inhabitant)	Proxy	381
Illegal building rate (Cresme, 2017, %)	National context	19.8
SDG 11.4.1 - Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)		
Public expenditure per capita spent on the preservation of the cultural and natural heritage (Istat, 2017, euro per capita)	Proxy	44.7
SDG 11.5.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population		
Deaths and missing persons for landslides (Ispra, 2018, number)	Partial	12
Injured persons for landslides (Ispra, 2018, number)	Partial	29
Deaths and missing persons for floods (Ispra, 2017, number)	Partial	9
Number of injured persons for floods (Ispra, 2017, number)	Partial	....
Population at risk of landslides in the municipalities (Ispra, 2017, %)	National context	2.2
Population at risk of flood in the municipalities (Ispra, 2017, %)	National context	10.4
SDG 11.6.1 - Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities		
Landfill of waste (Ispra, 2017, %)	Proxy	23.4
SDG 11.6.2 - Annual mean levels of fine particulate matter (e.g. $PM_{2.5}$ and PM_{10}) in cities (population weighted)		
Urban population exposure to air pollution by particulate matter <2.5µm (Eurostat, 2017, micro g/m^3)	Identical	19.4
Urban population exposure to air pollution by particulate matter <10µm (Eurostat, 2015, micro g/m^3)	Identical	29.2
Urban air quality - PM10 (Istat, 2017, % of fixed monitoring units with more than 35 days of exceedance of the daily limits)	Proxy	34
PM_{10} daily limit exceeds in the municipalities (Istat, 2017, N. of Municipalities with more than 35 days of exceedance of the daily limits)	Proxy	40
PM_{10} Annual average concentration in the municipalities (Istat, 2017, N. of Municipalities with maximum value exceeding 40 µg/m^3)	Proxy	6
$PM_{2.5}$ Annual average concentration in the municipalities (Istat, 2017, N. of Municipalities with maximum value exceeding 25 µg/m^3)	Proxy	16
Urban air quality - Nitrogen dioxide (Istat, 2017**, %** fixed monitoring units with annual limit o of exceedance**)**	National context	19.7
NO_2 Annual average concentration in the municipalities (Istat, 2017 N. of Municipalities with with maximum value exceeding 40 µg/m^3)	National context	28
O_3 daily Target exceeds in the municipalities (Istat, 2017, N. of Municipalities with more than 25 days of exceedance the long term Target)	National context	62
Temperature and precipitation indices of climatic extremes for Regional Capital Municipalities (Istat, 2016 Climatic Normal (CLINO) 1971-2000, Number of days and mm of precipitation)	National context	(*)
SDG 11.7.1 - Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities		
Incidence of urban green areas on urbanized area of the cities (Istat, 2017, m^2 per 100m^2)	Proxy	9.1
SDG 11.7.2 - Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months		
Persons aged 14-65 years old victims of at least one form of sexual harassment in the last 12 months (Istat, 2015/16, %)	Identical	5.1

(*) Please, refer to the data table www.istat.it
(...) The phenomenon exists, but the data are not known for any reason.

The indicators released cover most of the dimensions identified.

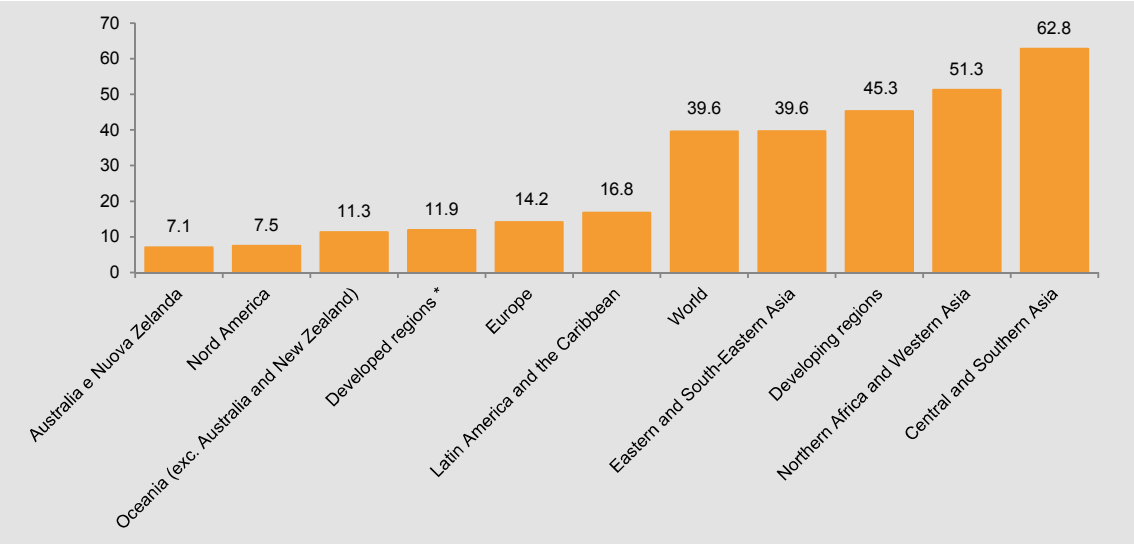
Focus

DG 11.6.2 - Annual mean levels of fine particulate matter(e.g. $PM_{2.5}$ and PM_{10}) in cities (population weighted)

The fixed monitoring system of air quality in the cities measures the concentration and frequency of exceedances, according to the limits fixed by law. Among the pollutants detected, the main ones are the particulates: particles with a diameter of less than 10 micrometres (PM_{10}) and, among these, finer particles with diameter less than 2.5 micrometres ($PM_{2.5}$). Inhalation of these pollutants has harmful effects on health; in particular $PM_{2,5}$ particles cause serious damage to the respiratory system.

Worldwide, in 2016, the concentration of $PM_{2,5}$ in urban areas was 39.6 micrograms per cubic metre (µg/m³). The highest levels were observed in Central and South Asia (62.8µg/m³) and in North Africa and West Asia (51.3 µg/m³). In general, the presence of this pollutant in the atmosphere was higher in developing countries (45.3 µg/m³) than in developed countries (11.9 µg/m³). Among the latter, the lowest levels of pollution were found in Australia and New Zealand (7.1 µg/m³) and North America (7.5 µg/m³), while in Europe the concentration was equal to 14.2µg/m³, remaining above the average of the developed countries (Figure 11.1).

Figure 11.1 - Annual mean levels of fine particulate matter $PM_{2.5}$ in cities (population weighted). Year 2016 (µg/m³)



Source: UN https://unstats.un.org/sdgs/indicators/database
* (Europe, Cyprus, Israel, Northern America, Japan, Australia & New Zealand)

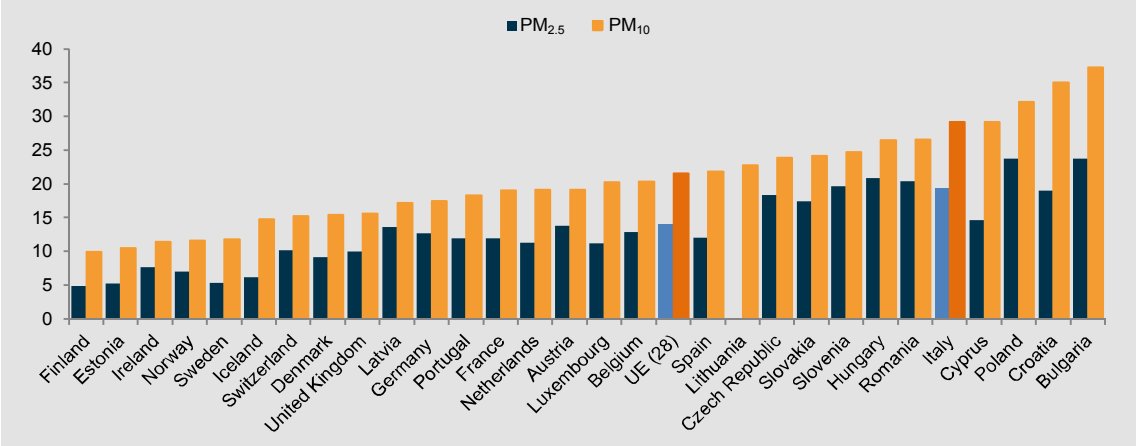
Differences among European countries are relevant. In many countries concentrations have significantly decreased since the 2000s[3], with a downward trend that still persists - for example, in Belgium, Germany, Finland, Sweden, the United Kingdom – even if with a gradual slowdown over the years. In other countries, on the other hand, the decline has

3 Since 2008, at European level, air quality monitoring has followed indications that have standardized and raised the quality of the data collected from monitoring units (Directive 2008/50/EC implemented by Legislative Decree no. 155 of 13 August 2010).

come to a standstill. This has occurred, for example, in Italy, Portugal, Romania, Slovenia and Slovakia. In the remaining EU countries, concentrations have not decreased significantly over the years in some countries, such as Bulgaria, Croatia and Poland.

In Italy, the concentration of PM_{10} was 48.7 µg/m³ in 2000, falling to 29.2 in 2017. $PM_{2.5}$ was 51 µg/ m³ in 2004, falling to 19.4 µg/ m³ in 2017. In both cases, there was an increase in 2017 compared to the previous year.

Figure 11.2 - Exposure to air pollution by particulate matter $PM_{2.5}$ and PM_{10}. Year 2017 (µg/m³)



Source: Eurostat (EEA)

In addition to the concentration levels, the days on which the legal limits were exceeded[4] must also be taken into account. This information is available in Italy for the 109 capital municipalities for PM_{10}, $PM_{2.5}$, nitrogen dioxide[5] (NO_2) and tropospheric ozone[6] (O_3). For particulate matter and nitrogen dioxide, the concentrations are correlated with the average temperatures and the cumulative precipitation regime in the autumn and winter months. For ozone, however, the correlation should be referred to the summer months. Considering only the capitals of metropolitan cities, Torino, Milano, Venezia have the negative record of exceedances in the year for PM_{10}, while for tropospheric ozone Genova, Venezia, Milano and Firenze[7] (Figure 11.3a).

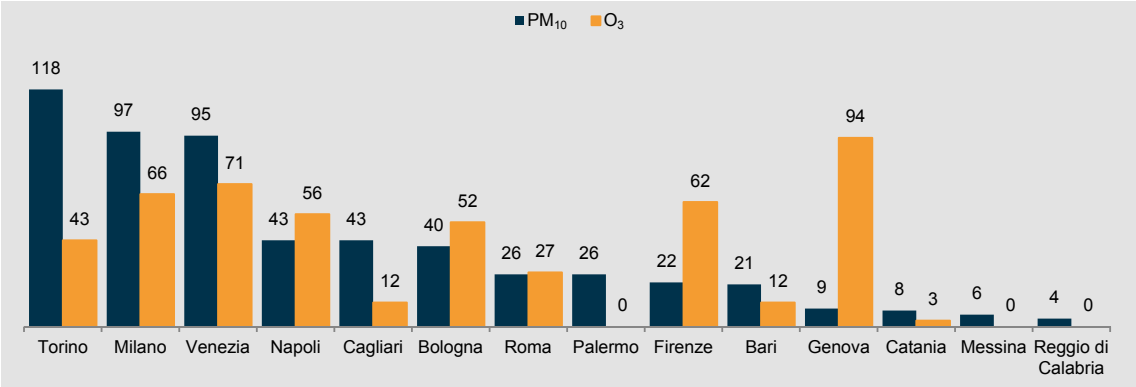
4 Air quality law in force since 30 September 2010 (Legislative Decree no. 155 of 13 August 2010) implementing the European directive (2008/50/EC).

5 NO_2: nitrogen dioxide is a pollutant with a predominantly secondary component, since it is the product of the oxidation of the nitrogen monoxide (NO) in the atmosphere, only to a lesser extent directly released into the atmosphere. The main source of nitrogen oxide emissions (NO_x=NO+NO_2) is vehicle traffic, followed by civil and industrial heating, energy production and many industrial processes. It has negative health effects and contributes to smog processes. photochemical, precursor for the formation of ozone and secondary particles.

6 O_3: Ground-level ozone is a secondary pollutant that is formed in the atmosphere through photochemical processes in the presence of primary pollutants such as nitrogen oxides (NO_x) and volatile organic compounds (COV). Photochemical pollution, as well as local pollution, is a cross-border phenomenon that takes place on a large spatial scale; it follows that the levels found in a certain area are not always exclusively attributable to emission sources located near the same area. The highest ozone concentrations occur in the hottest months and hours of maximum irradiation. In urban areas, ozone is formed and transformed very rapidly following complex dynamics unlike other pollutants. The main sources of ozone precursors (NO_x and COV) are road transport, civil heating and energy production. Ozone is a source of serious problems for human health, the ecosystem as a whole, agriculture and material goods.

7 The maximum number of exceedances of the long-term objective for the protection of human health is representative of the situation of maximum alert. PM_{10}: Exceeding the 24-hour limit for the protection of human health (50 µg/m³) for 35 days of exceedance per calendar year (Legislative Decree 155/2010). O_3: Long-term objective of 120 µg/m³ of the maximum daily average (8-hour mobile) for the protection of human health no later than 25 days per calendar year (Legislative Decree 155/2010).

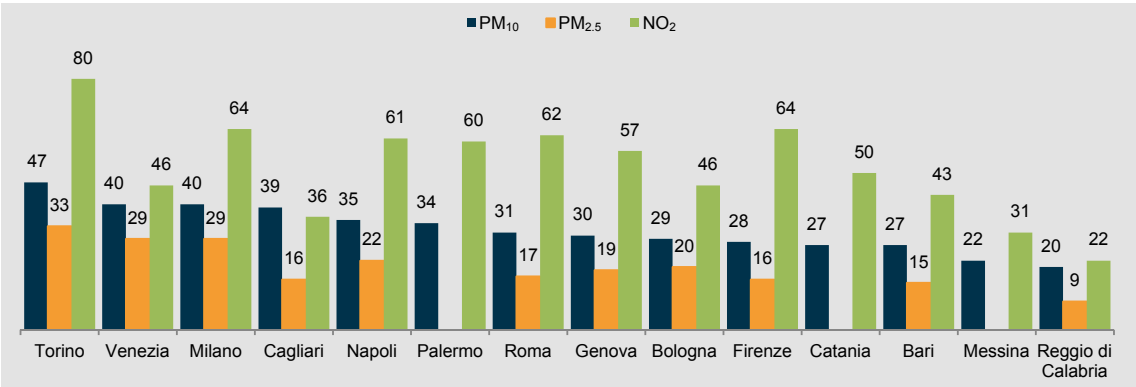
Figure 11.3a - Number of the limiting value of the daily average for human health protection exceeded for PM_{10} and O_3 in the capitals of metropolitan cities. Year 2017 (n. of days)



Source: Istat

The situation is complementary considering the concentrations: Torino, Venezia and Milano have the highest concentrations of fine particles, while nitrogen dioxide is also present in high concentrations in Roma and Palermo (Figure 11.3b).

Figure 11.3b - Annual average concentration of PM_{10}, $PM_{2.5}$, NO_2 capitals of metropolitan cities. Year 2017 (n. of days)



Source: Istat

As noted above, climatic conditions and precipitation regimes affect air pollution levels. The indices of climatic extremes[8] show the variations in time of temperature and precipitation data compared to the climate reference period[9], calculated on the average values for the years 1971-2000.

Limiting the analysis to a few metropolitan cities, a general increase in heat extremity indices and a decrease in cold extremity indices can be observed[10].

In all cities, for example, an increase is reported in: summer days, tropical nights, hot days, hot nights, and a decrease in cold days and cold nights[11] (Figure 11.4).

8 Climate Extreme Indices (ETCCDI) Expert Team on Climate Change Detection and Indices.

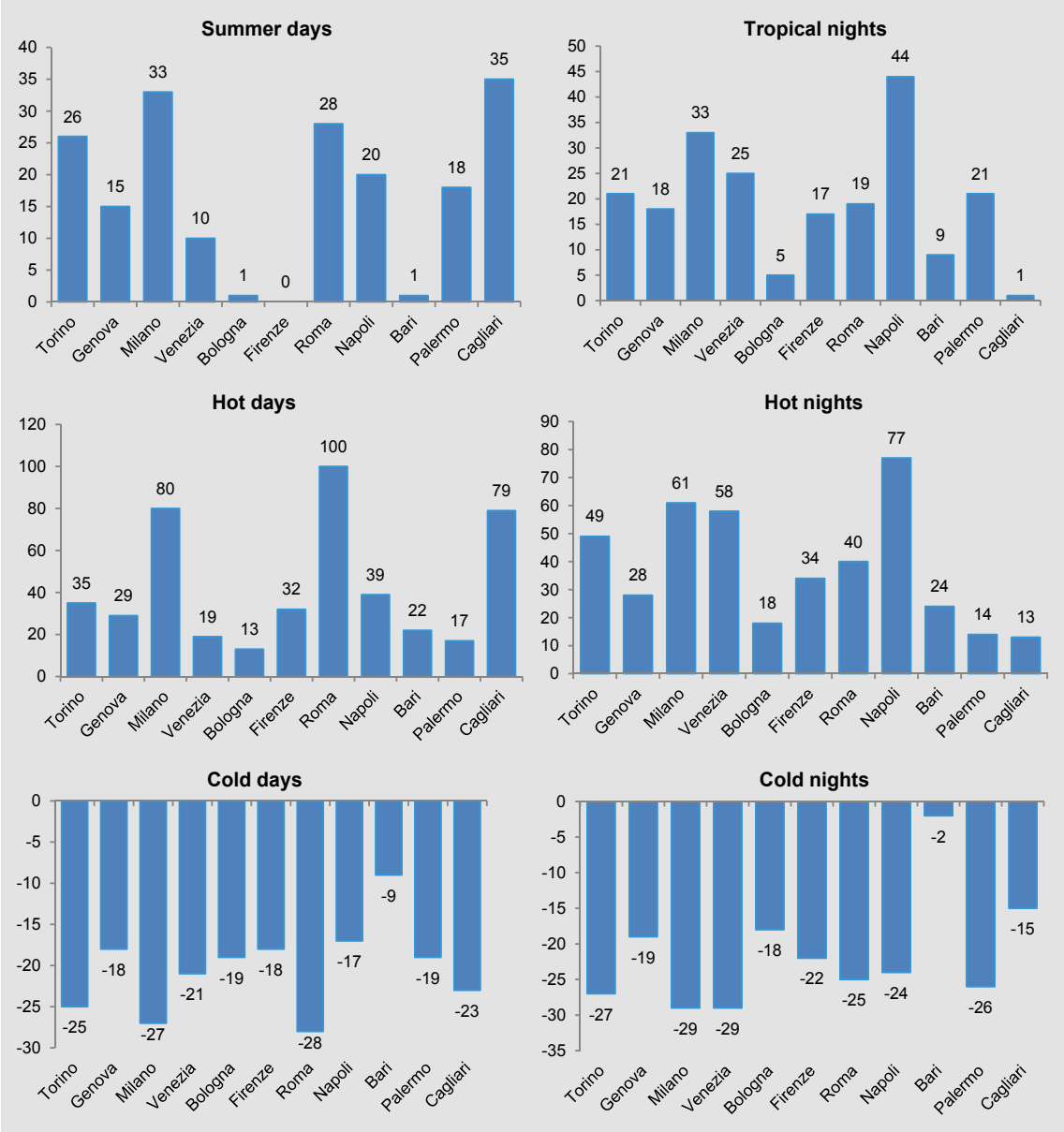
9 Climatic Normal: reference climatological averages are calculated over a 30-year period

10 Statistiche Report - Temperatura e precipitazione nelle principali città - Years 2002-2016. 20 June 2018. https://www.istat.it/it/archivio/217402.

11 *Summer days*: Annual count of days when daily maximum temperature > 25oC
Tropical nights: Annual count of days when daily minimum temperature > 20oC
Hot days: Percentage of days when daily maximum temperature > 90th percentile

With reference to precipitation regimes, there is a higher spatial-temporal variability, with an alternation of rainier and less rainy years. Some cities have been affected by higher levels of rainfall than in the past, for example: Catanzaro (1,096.9 mm) and Genova (1,064.5 mm), followed by Trento (987.7 mm) and Torino (938.1 mm)[12].

Figure 11.4 - Selection of Climate Extreme Indices. Anomalies between 2016 and Climatic Normal 1971-2000 (number of days)



Source: Istat

Hot nights: Percentage of days when daily minimum temperature > 90th percentile
Cold days: Percentage of days when daily maximum temperature < 10th percentile
Cold nights: Percentage of days when daily minimum temperature < 10th percentile.

12 Reference period 2012-2016.

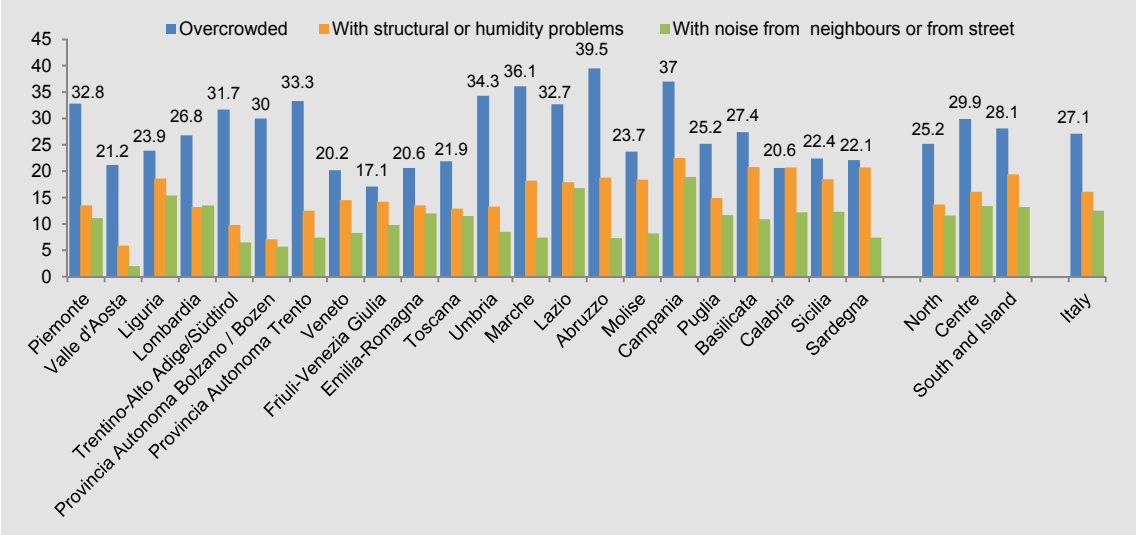
SDG 11.1.1 - Proportion of urban population living in slums, informal settlements or inadequate housing

Target 11.1 aims to ensure access to adequate and safe basic housing and services for all. In 2017, about a quarter of the resident population reported one or more factors of housing deprivation. Among the dimensions considered, the problem of overcrowding is the most critical, complained of by 27.1% of population. Compared to the previous year it has slightly decreased, but without returning to the levels of previous years (from 2004 to 2011) when it stood at about 24%.

16.1% of population reported living in dwellings with structural or humidity problems (Figure 11.5). This dimension has improved over time, as between 2004 and 2016 it had values between 20 and 24%.

The dimension of noise from neighbours or from the street is reported by 12.5%. Among the three dimensions, this is the one which has fallen sharply and steadily over the years, by up to 14 percentage points. In 2004 it was the most critical, reported by 26.8% of people.

Figure 11.5 - Share of total population living in overcrowded dwelling or with structural or humidity problems or with noise from neighbours or from street, by region. Year 2017 (%)



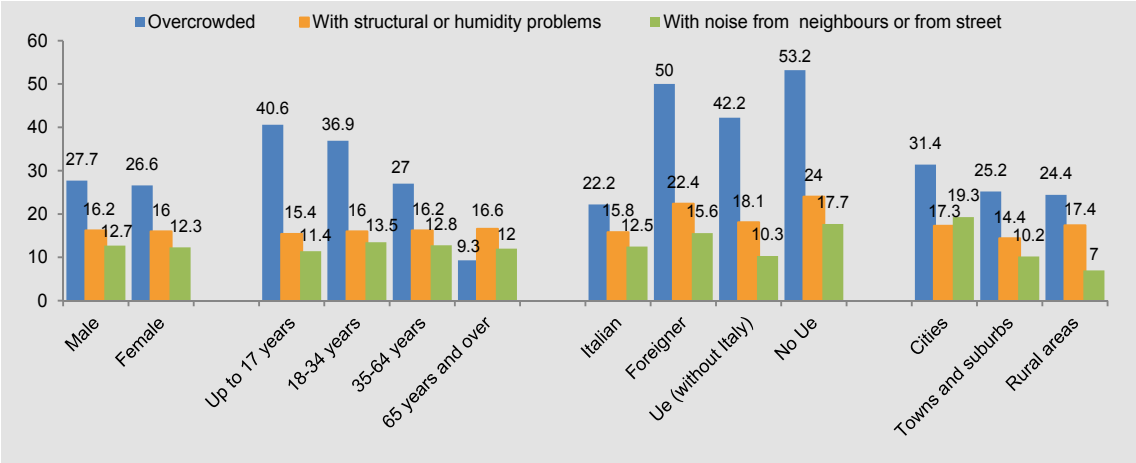
Source: Istat

Further breakdowns of the dimensions analysed highlight significant differences, especially for overcrowding. While gender differences are not significant, younger age groups are more disadvantaged. In particular for the case of children under the age of 17, for whom there is a peak of 40.6%. This value is exceeded when the disaggregation concerns citizenship: 53.2% for foreign citizens not belonging to the European Union and 42.2% for EU citizens (excluding Italy).

Disaggregation by degree of urbanisation[13] shows greater criticality in large cities and fewer difficulties in rural areas, with the exception of structural and humidity problems which are lower in medium-sized cities and urban belts (Figure 11.6).

13 Degree of Urbanisation (DEGURBA), Eurostat.

Figure 11.6 - Share of total population living in overcrowded dwelling or with structural or humidity problems or with noise from neighbours or from street, by gender, age, citizenship, degree of urbanisation. Year 2017 (%)



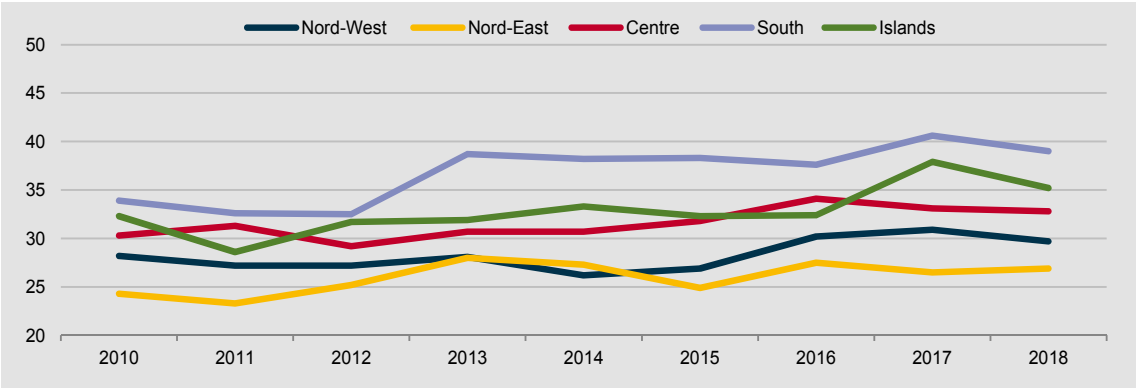
Source: Istat

SDG 11.2.1 - Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Over the years, the difficulty of connecting with public transport remains. About one third of households (32.4% in 2018) had a lot or enough difficulties in the area in which they lived. The share of unsatisfied households was slightly down on the previous year, but for almost all regions (with the exception of Friuli-Venezia Giulia, Umbria, Lazio) it was higher than in 2010.

The highest share of unsatisfied families was found in Southern Italy (39% in 2018 and 40.6% in the previous year) (Figure 11.7).

Figure 11.7 - Households with difficulties of links with public transport means. Years 2010-2018 (%)

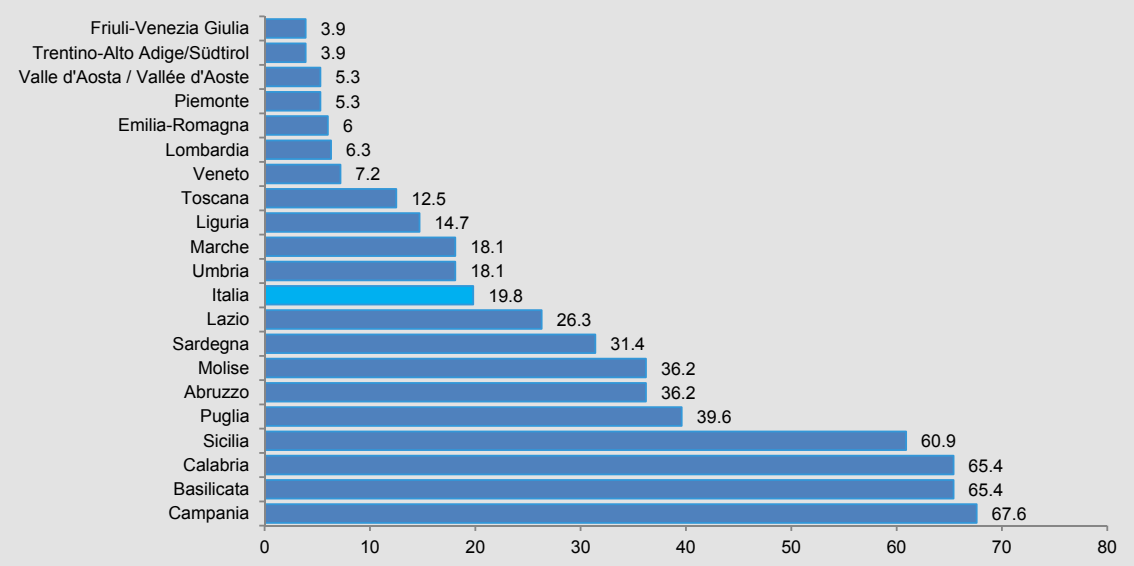


Source: Istat

SDG 11.3.1 - Ratio of land consumption rate to population growth rate

In Italy, in 2017, the artificial land cover per capita amounted to 381 m^2 per inhabitant. The illegal buildings index has increased by about ten percentage points compared to 2006, going from 9.9 to just under 20 every 100 authorized, in the last three years (19.8 in 2017).

Figure 11.8 - Illegal Building Rate. Year 2017 (%)

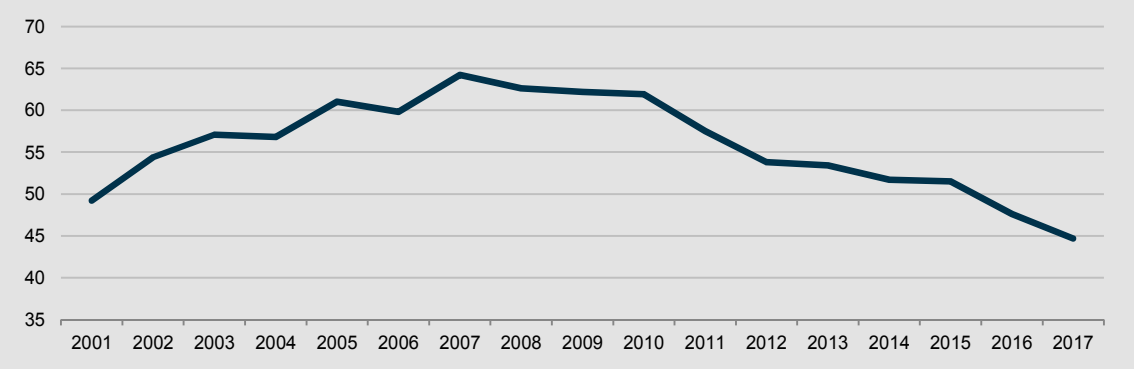


Source: Cresme

SDG 11.4.1 - Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/ investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)

Public expenditure on the preservation of the cultural and natural heritage has fallen by around ten euros per capita compared to ten years ago. From 2006 to 2010, it had recorded growing values, which decreased in the post-crisis period to 44.7 euros per capita in 2017 (Figure 11.9).

Figure 11.9 - Public expenditure per capita spent on the preservation of the cultural and natural heritage. Years 2001-2017 (euro per capita)

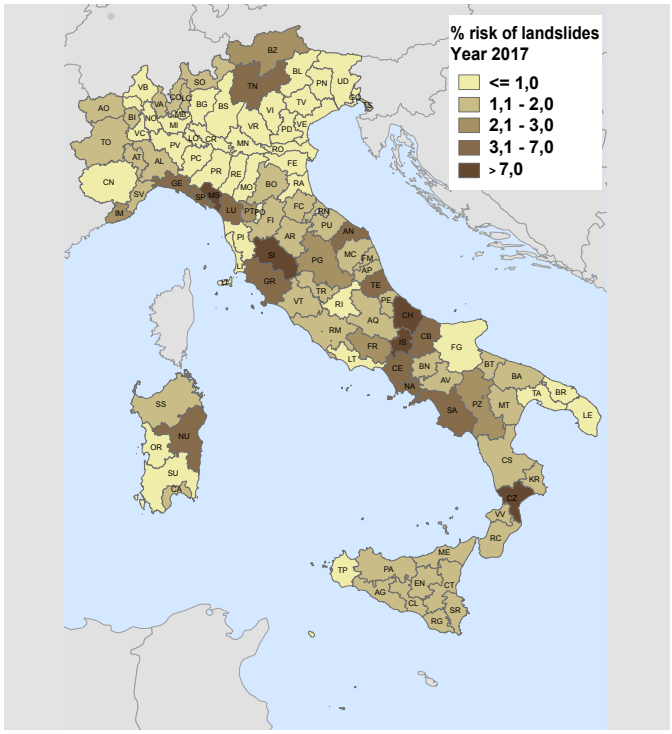


Source: Istat

SDG 11.5.1 - Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

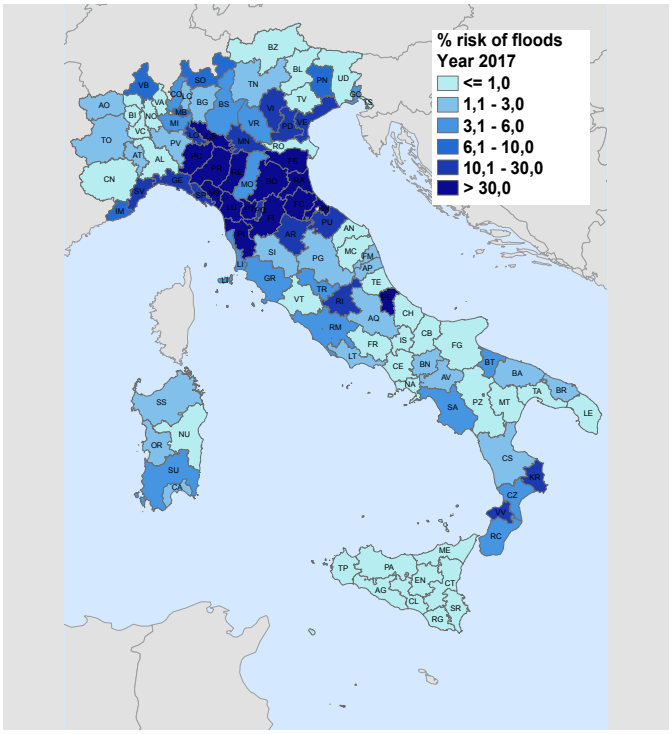
Target 11.5 includes the indicators of the Sendai Framework for Disaster Risk Reduction[14]. The issue of risk management is particularly relevant in the context of cities where it assumes specific characteristics of fragility and vulnerability. In 2017, 2.2% of the population was exposed to landslide risk[15] and 10.4% to flood risk[16] (Figures 11.10a and 11.10b).

Figure 11.10a - Population at risk of landslides. Year 2017 (%)



Source: Ispra

Figure 11.10b - Population at risk of floods. Year 2017 (%)



Source: Ispra

SDG 11.6.1 - Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

Until 2008, more than half of the waste was sent to landfill rather than to the separate collection or recycling[17]; this trend has changed over the years. In 2018, in fact, landfills collected less than a quarter of the municipal waste produced (23.4%). The territorial analysis shows extremely wide differences[18] (Figure 11.11).

14 The indicators of the Sendai Framework are also in Goals 1 and 13. For further information refer to Goal 13.

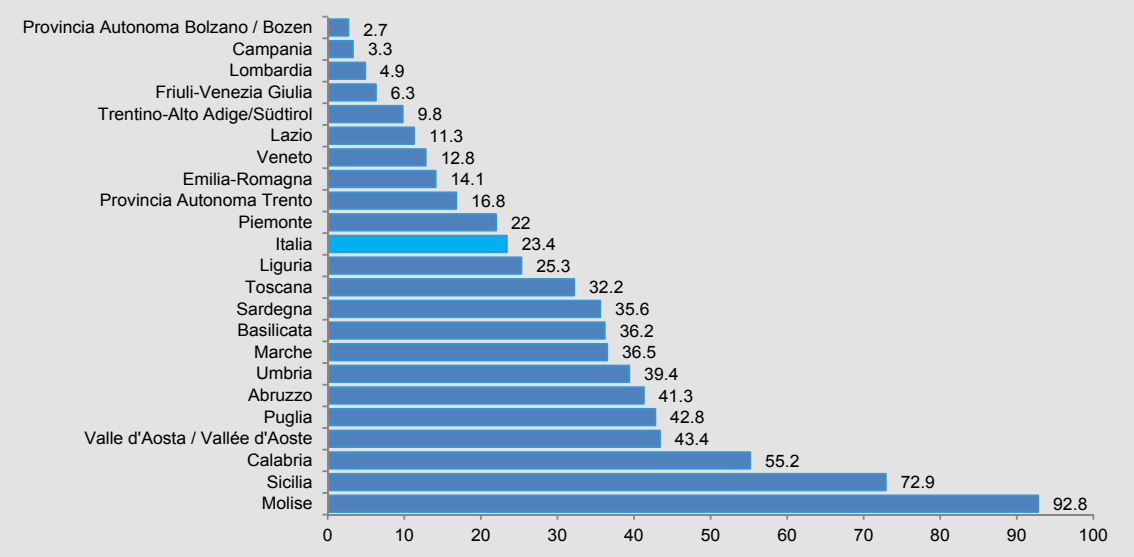
15 Percentage of the population in areas with high and very high landslide hazards on the total resident population.

16 Population at flood risk resident in medium flood hazard zones (Return period 100-200 years; D. Lgs. 49/2010).

17 Further aspects related to waste management are present in Goal 12, which aims to ensure sustainable patterns of production and consumption and in particular in the Target on the reduction of waste generation through prevention, reduction, recycling and reuse (SDG 12.5). The two indicators, the recycling rate and the volume of separately collected municipal waste, both show increasing values.

18 The figure also takes into account the flows of municipal waste in and out of other regions, which can change the value of the numerator also to a significant extent. In Campania, the share of waste coming from the following plants was also taken into account of mechanical-biological treatment which, in the absence of the availability of plants for recovery, has been annually stored waiting to be sent for disposal (even outside the region). Since 2011, this share is equal to zero.

Figure 11.11 - Municipal waste sent to landfill on total municipal waste collected. Year 2017 (%)

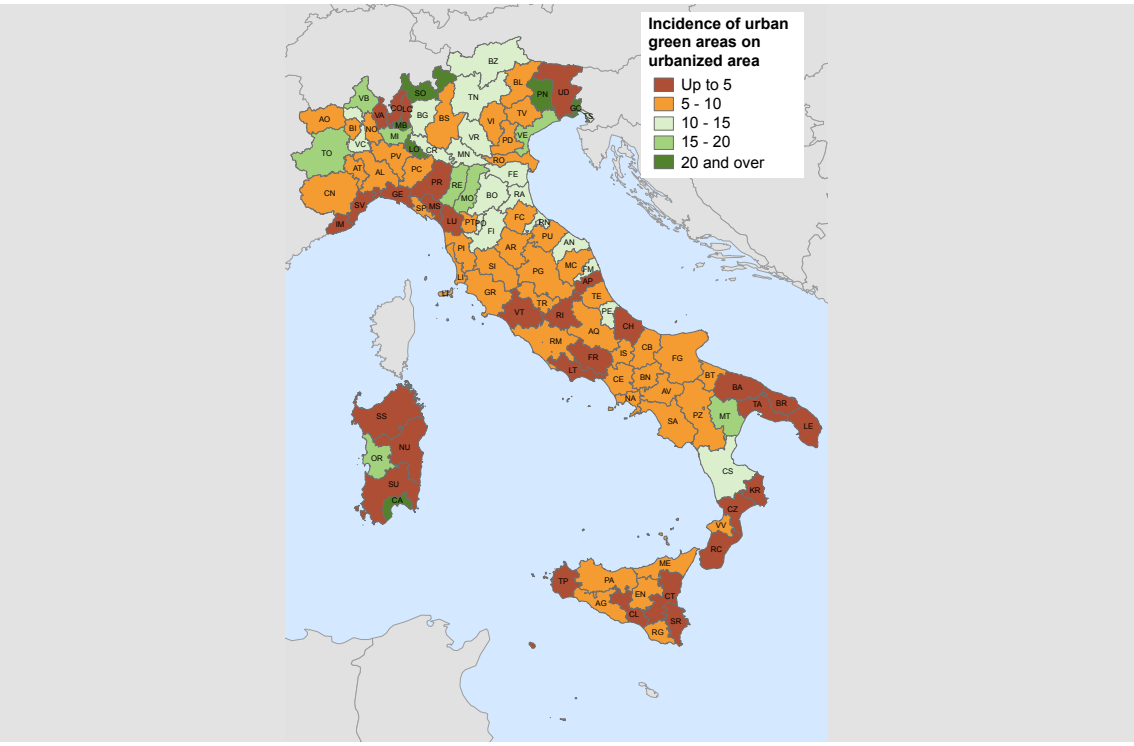


Source: Ispra

SDG 11.7.1 - Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities

The incidence of urban green areas in the 109 provincial capitals is equal to an average of 9.1 m^2 per 100 of urbanized area. One third of the provincial capitals, located mostly in the northern regions, are above the average value (Figure 11.12).

Figure 11.12 - Incidence of urban green areas on urbanized area of the cities. Year 2017 (m^2 per 100m^2)



Source: Istat
Note: the provincial capital is assumed to be a significant representation of the urbanised territory of the province.

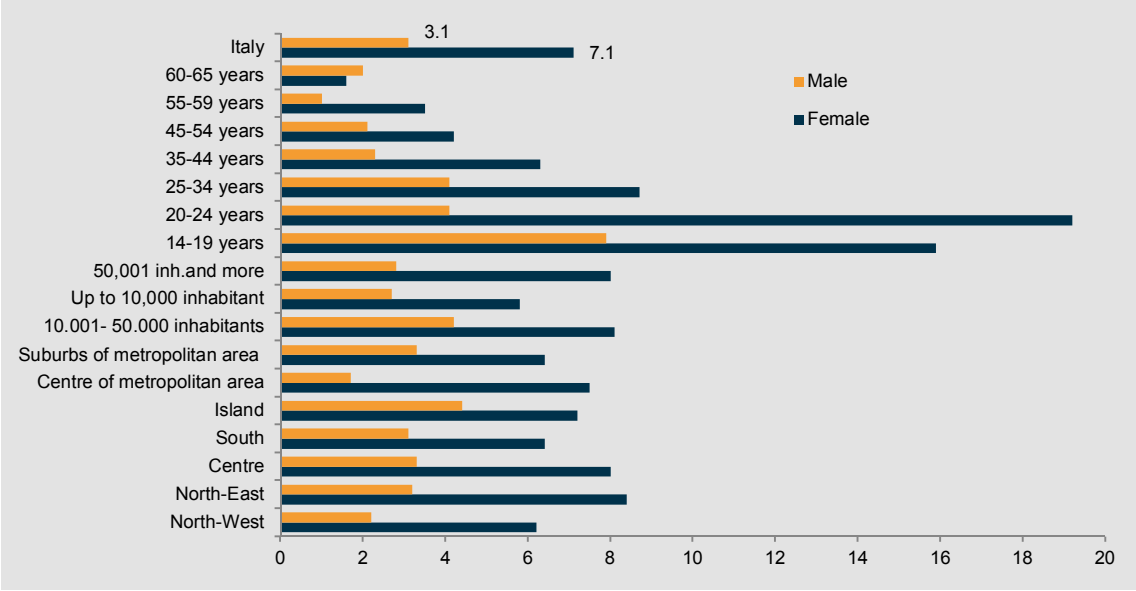
SDG 11.7.2 - Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months

About two million people aged between 14 and 65 years have suffered some form of sexual harassment in the last 12 months[19] (exhibitionism, shadowing, obscene phone calls, verbal and physical harassment, harassment on social networks) with an incidence of 5.1%: 1 million 437 thousand women were victims (7.1% of women of this age) and 610 thousand men (3.1%)[20].

The incidence is highest for younger girls, especially in the age group 20-24, where it reaches 19.2%.

Prevalence is higher in the centres of the metropolitan area, for women is equal to 7.5%, and in the towns from 10,001 to 50,000 inhabitants (8.1%) and lower municipalities up to 10,000 inhabitants (5.8%). Considering only types of sexual harassment investigated for women in the 2008-2009[21] survey, the phenomenon is decreasing. (Figure 11.13).

Figure 11.13 - Persons aged 14-65 years old victims of at least one form of sexual harassment in the last 12 months. Year 2015/16 (%)



Source: Istat

19 With respect to the 2015/16 survey.

20 Le molestie e i ricatti sessuali sul lavoro. Reference period - Year 2015-2016. Publication date 13 February 2018. https://www.istat.it/it/archivio/209107.

21 The types of harassment investigated also in the previous survey are: verbal harassment, shadowing, exhibitionism, physical sexual harassment, obscene phone calls. In 2015-2016, new forms of harassment were included, such as "showing pornographic photos or images against the will of the person" and, for the internet users, "obscene or inappropriate proposals or comments" and "identity theft on the Internet and on social networks in order to write offensive or embarrassing messages about other people".

In brief

There is a setback in the medium and long term reduction in the level of air pollution by particulate matter. A slight increase in pollutants has been observed for some values in the last two years (also due to weather conditions). Values above the EU average are still too high, especially in the cities of the Po Valley.

There is a general improvement in same problems related to housing, after years in which it was increasing: population living in overcrowded dwellings has slightly decreased and amounted to 27.1%. More relevant are the variations of the incidence of people who claim to live in houses with structural problems or humidity problems, which fell to 16.1% and in houses with noise from neighbours or from street, which decreased to 12.5%.

One third of households are still unsatisfied with the use of public transport: 32.4% declare, in 2018, that they have much or enough difficulty in connections in the area in which they live.

The figure for illegal building, which has risen in recent years, is about 20% in 2017; territorial differences are considerable.

Public expenditure per capita spent on the preservation of the cultural and natural heritage has fallen by about twenty euros per capita in the last ten years: from 64.2 euros in 2007 to 44.7 euros in 2017.

The share of municipal waste going to landfill continues to decrease: more than half went to landfill until 2008, while it fell below a quarter in the last two years (23.4% in 2017).

In the 109 provincial capitals, the incidence of urban green areas on urbanized area of the cities is 9.1 m^2 per 100 of urbanised area.

About two million people aged between 14 and 65 years have suffered some form of sexual harassment in the last 12 months[22] (exhibitionism, shadowing, obscene phone calls, verbal and physical harassment, harassment on social networks) with an incidence of 5.1%.

22 With respect to the 2015/16 survey.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
11.1.1					
	Share of total population living in overcrowded dwelling				
	Share of total population living in a dwelling with structural or humidity problems				
	Share of total population living in a dwelling with noise from neighbours or from street				
11.2.1					
	Households with difficulties of links with public transports				a b
11.3.1					
	Illegal building rate				
11.4.1					
	Public expenditure per capita spent on the preservation of the cultural and natural heritage				
11.6.1					
	Landfill of waste				
11.6.2					
	Urban population exposure to air pollution by particulate matter (particulate <2.5µm)				
	Urban population exposure to air pollution by particulate matter (particulate <10µm)				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2013-2018
(b) 2017-2018

GOAL 12

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS [1]

In line with the principle of 'doing more and better with less', Goal 12 promotes sustainable consumption and production (SCP) models aiming at reducing the environmental footprint of socioeconomic systems (consumption of natural resources compared to the natural capacity for regeneration), fighting poverty and improving living standards and economic development. The progress towards Goal 12 is thus very relevant in order to reach other sustainable development Goals related to hunger and health, reduction of inequality, sustainable management of water and energy, the promotion of models of durable, inclusive and sustainable economic growth and the mitigation of climate change.

Sustainable production and consumption can be achieved through a transition to a circular economy model that 'closes the loop' of production of goods via reusing and recycling, ensuring economic growth that is more consistent with environmental protection. Sustainable management of natural resources in production and distribution, responsible consumption, implementation of an efficient waste cycle are all tools for protecting eco-systemic goods and services, reducing the impacts on the environment in terms either of natural resources consumption and of disposal of climate-altering gases and pollutants of the air, earth and water. Special attention is paid to the reduction of food waste, to the achievement of appropriate standards of eco-compatibility in management of chemical substances and waste and to the development of sustainable tourism. In compliance with the 2030 Agenda, the adoption of SCP models must be achieved through contributions by enterprises (encouraged to adopt sustainable practices and making them traceable), citizens (whose awareness needs to be increased by leveraging information on sustainable lifestyles and consumption) and public administrations (addressed at expanding Green Public Procurement and pushing for environmental tax reform). Moreover, as clearly stated by the 10-year Framework of Programmes on SCP adopted by the United Nations in 2012 (Rio+20 Conference), this sustainability model must be achieved with the participation of all countries. The more developed countries are asked to support the developing countries by international cooperation, and to increase their scientific and technological capacities.

1 This section was edited by Paola Ungaro with contributions from Aldo Femia, Maria Teresa Santoro and Angelica Tudini.

Targets

Goal 9 is broken down into eleven Targets; the last three refer to means of implementation.

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.

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.

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities.

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.

12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

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.

Indicators released by Istat

The statistical measures released by Istat for Goal 12 are eighteen and refer to ten of the twelve Targets.

Table 12.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 12.2.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP		
Domestic material consumption per capita (Istat, 2017, ton per capita)	Identical	8.16
Domestic material consumption per GDP (Istat, 2016, ton / thousands of euro)	Identical	0.31
Domestic material consumption (Istat, 2016, thousands ton)	Identical	493,915
SDG 12.4.2 - Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment		
Amount of hazardous waste generated (Ispra, 2016, tons)	Proxy	9,609,056
Hazardous waste sent to the recovery operations (Ispra, 2016, tons)	Proxy	2,793,917
Hazardous waste disposed of (Ispra, 2016, tons)	Proxy	6,494,543
SDG 12.5.1 - National recycling rate, tons of material recycled		
National recycling rate (Ispra, 2017, %)	Proxy	49.4
Separate collection of municipal waste (Ispra, 2017, ton)	Proxy	16,425,018
Separate collection of municipal waste (Ispra, 2017, %)	Proxy	55.5
SDG 12.6.1 - Number of companies publishing sustainability reports		
Number of organizations/enterprises with EMAS registration (Ispra, 2017, n)	Proxy	982
Public Institutions that adopt forms of social and/or environmental reporting (Istat, 2012-2015, %)	National context	19.5
SDG 12.7.1 - Number of countries implementing sustainable public procurement policies and action plans		
Public institutions that purchase goods and/or services by adopting minimum environmental criteria (CAM), in at least one purchase procedure (Green purchases or Green Public Procurement) (Istat, 2015, %)	National context	*
SDG 12.a.1 - Total net official development assistance (ODA) gross deliveries for research in the different areas of intervention		
Total net official development assistance (ODA) gross deliveries for research in the different areas of intervention (Ministry of Foreign Affairs and International Cooperation, 2017, millions of euro)	Identical	10.02
SDG 12.b.1 - Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools		
Impact of tourism on waste (Ispra, 2016, kg / equivalent inhabitant)	National context	8.89
Tourism intensity index (Istat, 2017, per 1,000 inhabitants)	National context	6,942
Nights spent in open air establishments, farmhouses and mountain refuges on nights spent in all the accommodation establishments (Istat, 2017, %)	National context	19.3
Tourism trips by type of and main means of transport (Istat, 2018, %)	National context	*
SDG 12.c.1 - Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels		
Fossil-fuel subsidies per unit of GDP (Ministry of the Environment and Protection of the Land and Sea, 2017, millions of Euros per milion of Euros of GDP)	Identical	0.0097

** Please see the data table.*

For Goal 12 Istat released five statistical measures that correspond exactly to the ones expected by the SDGs: three for material consumption (12.2.2) and two for the means of implementation (12.a.1 related to Official Development Assistance for research and 12.c.1 related to fossil fuel subsidies). The other indicators - proxy or in the national context - refer to generation and treatment of hazardous waste and recycling and separate collection of waste (12.4.1 and 12.5.1), the number of EMAS registered organizations/enterprises (12.6.1) and the impact of tourism on waste (12.b.1). For this edition, five new context indicators were also included: three integrated the indicator on the impact of tourism on waste in 12.b.1; two, referring to social and/or environmental reporting and green purchases of goods and/or services of public institutions, start the supply of data also for the UN indicators 12.6.1 and 12.7.1.

Focus

SDG 12.2.2 - Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP

Target 12.2 shares an important objective of sustainable management and efficient and responsible use of resources with Goal 8 (Target 8.4) and Goal 7 (Target 7.3), in order to ensure a decoupling of development of economic activity and pressures on the ecosystem. Material consumption provides important indications on the sustainability of the production and consumption models related to the risk of qualitative/quantitative deterioration of natural resources. Domestic material consumption (DMC) measures the apparent consumption of materials in a national economy and equals the amount of materials used by the socioeconomic system in a given year. The indicator is calculated as the sum of domestic extraction of materials used[2] and the balance of the direct imports of materials from other countries and the direct exports of materials to other countries.

In 2017, global consumption of raw materials, equal to the global extraction of natural resources, was 88,000 million tons, a volume up 66% since 2000, with an annual average growth rate equal to 3%. Between 2000 and 2017, per capita material consumption, an indicator of environmental pressure, showed how the overall global increase of 35% was mainly due to the growth of the Asian area: very significant for East and South-East (+117%), but also consistent for Western (+ 60%), Central and Southern (around +45%) Asia. In Eastern and South-Eastern Asia, the increase in DMC per capita was also connected to the growth of manufacturing industry[3], also favored by the delocalization processes in the area and the opening to international markets. The only macro-regions reporting a decrease in the ratio between material consumption and population are Europe and North America and Oceania (-17% for both).

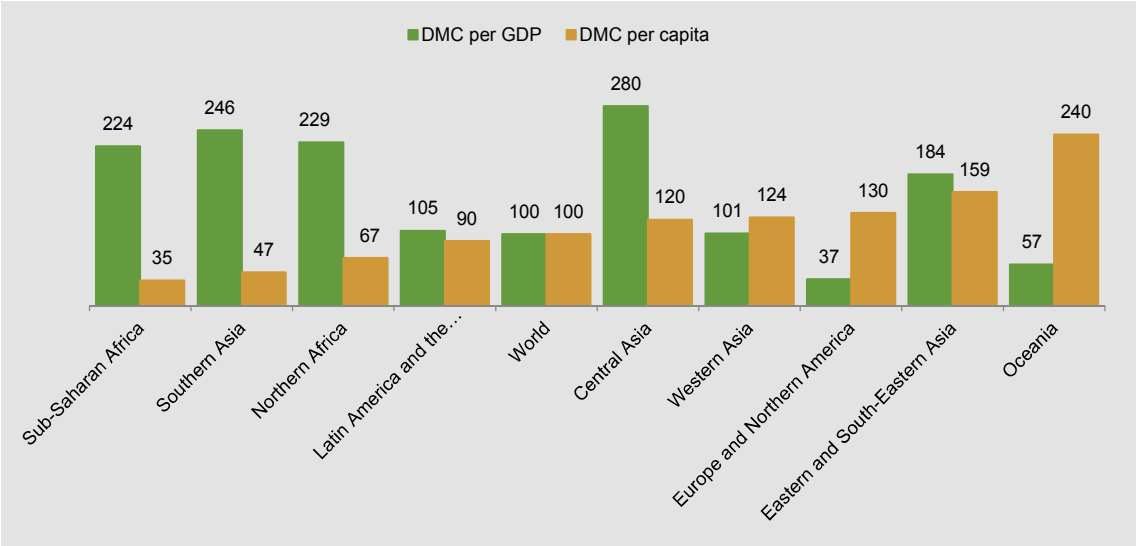
The demographic increase and the fast economic growth of developing countries suggests that the global demand for natural resources to meet consumption and production requirements will grow over time. The efficiency of economic processes in using resources, along with the spread of a culture of sustainability among all consumers (from producers, who are themselves consumers, to citizens) are essential elements to leverage in this regard so that the use of natural resources does not exceed the environment's ability to regenerate those resources.

The ratio of domestic material consumption to GDP, an indicator of efficiency in the use of material resources, increased by 4.1% in the world average due to the particularly strong growth in the areas of the Eastern and South-Eastern (+ 14%) and Western (+ 13%) Asia and Northern Africa (+ 8.0%). Despite the increase recorded in terms of DMC per capita, Central and Southern Asia obtained efficiency gains in production processes, achieving less materials use to produce one unit of output (-40% and -30% respectively). Also Europe and North America (-34%), Oceania (-34%) and Sub-Saharan Africa (-24%) made progress.

2 Quantities of biomass, non-energy minerals and fossil fuels extracted and sent for processing.

3 In the same period, +21% in terms of value added as a proportion of GDP (https://unstats.un.org/sdgs/indicators/database).

Figure 12.1 - Domestic material consumption per capita and per GDP by geographical area. Year 2017 (index number world=100)



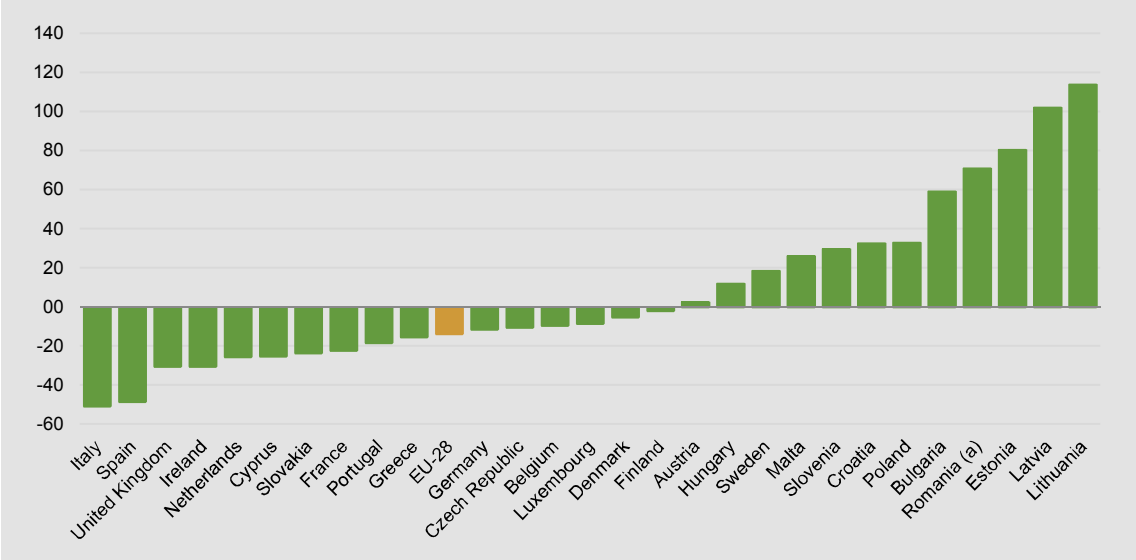
Source: https://unstats.un.org/sdgs/indicators/database/

Despite advances in efficiency, Central Asia continued to present the most unfavorable ratio of inputs and production outputs, recording a consumption of domestic material per unit of GDP equal to almost three times the world average (Figure 12.1). The geographic areas with the highest material intensity economies are South Asia (with a DMC per unit of output equal to approximately 2.5 times the world average value), North Africa and Sub-Saharan Africa. Below average levels appeared for Europe and North America, with DMC/GDP equal to 37% of the world average, and Australia and Oceania (57%). In terms of per capita material consumption, the macro regions with the highest consumption intensity were Oceania (whose high per capita DMC should be considered in relation to the high levels recorded by Australia and New Zealand and to their low population density), Eastern and South-eastern Asia (160), Europe and North America (130), and Western and Central Asia (120 for both). The geographic areas below the world average are Sub-Saharan Africa (35), Southern Asia (47) and Northern Africa (67).

The attention on SCP and efficient use of natural resources by European policies - initially more focused on energy - was manifested in a series of strategic and regulatory measures in the Union. Some of the most important are the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan (COM(2008) 397 final), the flagship initiative of the Europe 2020 Strategy for a Resource Efficient Europe (2011) and the following Roadmap (COM(2011) 571 final) and the Seventh Environmental Action Programme to 2020, which was adopted in November 2013, and counts among its main objectives the transformation of the Union into a low-carbon-emissions efficient in using resources, green and competitive economy.

In 2017, in the 28 Member States of the European Union, a total of 6,836 million tons of domestic material were consumed, a volume down by almost 10% compared to 2000, but up by 2.2% compared to the previous year. The decrease in the overall amount of domestic material consumption determined a change in the ratio of DMC to GDP equal to -14%) for the EU average. (Figure 12.2). The countries that recorded the most consistent contraction

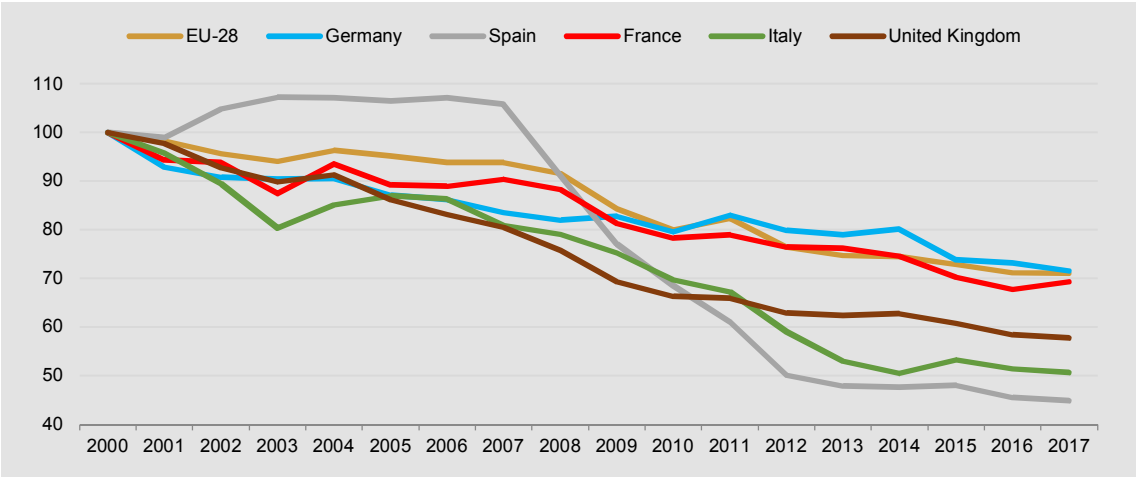
Figure 12.2 - Domestic material consumption per capita by country (percentage change 2017/2000)



Source: Eurostat (http://ec.europa.eu/eurostat)
(a) Data refer to 2001.

of the DMC per capita were Italy (-51%), Spain (-49%), the United Kingdom (-31%) and Ireland (-30%). On the contrary, a significant increase was observed in Lithuania and Latvia (more than doubled), but also in Estonia, Romania and Bulgaria.

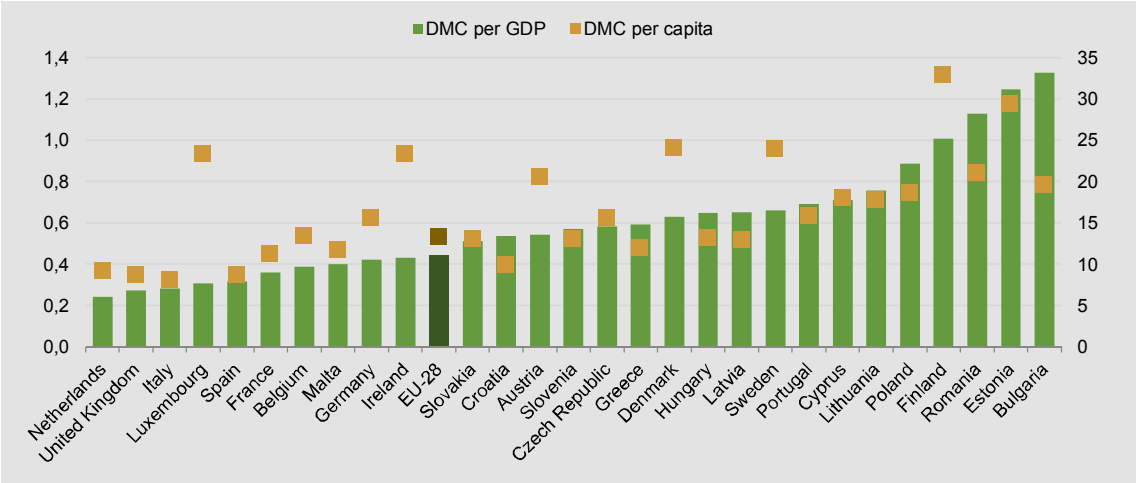
Figure 12.3 - Domestic material consumption per GDP by country. Years 2000-2017 (index number 2000=100)



Source: Istat processing on Eurostat data (http://ec.europa.eu/eurostat)

The trend for this indicator (Figure 12.3) - which had the most significant decreases in 2009 (-12.2% compared to the previous year) and in 2012 (-7.7%) - was affected by multiple factors: the progressive tertiarization of production systems, the effects of the economic crisis on the production capacity of the countries in the EU; the offshoring of production activities to extra-European areas. Nevertheless, the gradual decrease in DMC per unit of GDP in the years before the economic crisis showed a positive response by the Union to the Goals to increase resource productivity and the progress towards the decoupling of material consumption from economic activity.

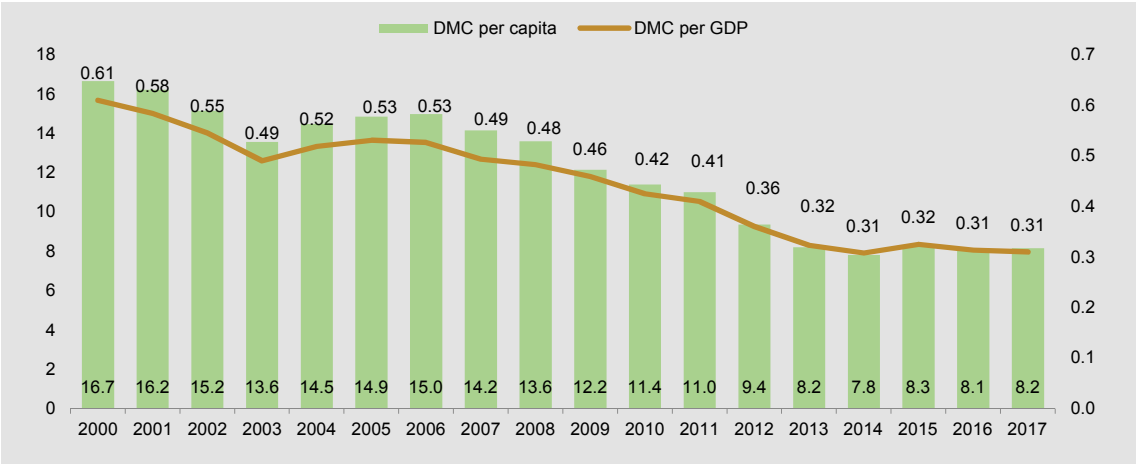
Figure 12.4 - Domestic material consumption per capita and per GDP by country. Year 2017 (tons per capita and tons/ thousands of euro)



Source: Istat processing on Eurostat data (http://ec.europa.eu/eurostat)

In 2017, DMC per GDP (Figure 12.4) was especially high in Bulgaria and Estonia (almost 3 times of EU average), in Romania, Finland and Poland. Compared to Europe, Italy was well positioned, third from last place in the ranking of material consumption ratio to GDP (64% of the EU average) and in the last place in terms of per capita DMC (62%). The Netherlands and the United Kingdom had good performances in DMC per unit of GDP. Countries that consumed largest DMC in relation to the resident population are Finland (33 tons per inhabitant; + 4.7% compared to 2016), Estonia (30 tons; + 10%), Denmark and Sweden (24 tons), Ireland and Luxembourg (23 tons).

Figure 12.5 - Domestic material consumption per capita and per GDP. Years 2000-2017 (tons per capita and tons/ thousands of euro)

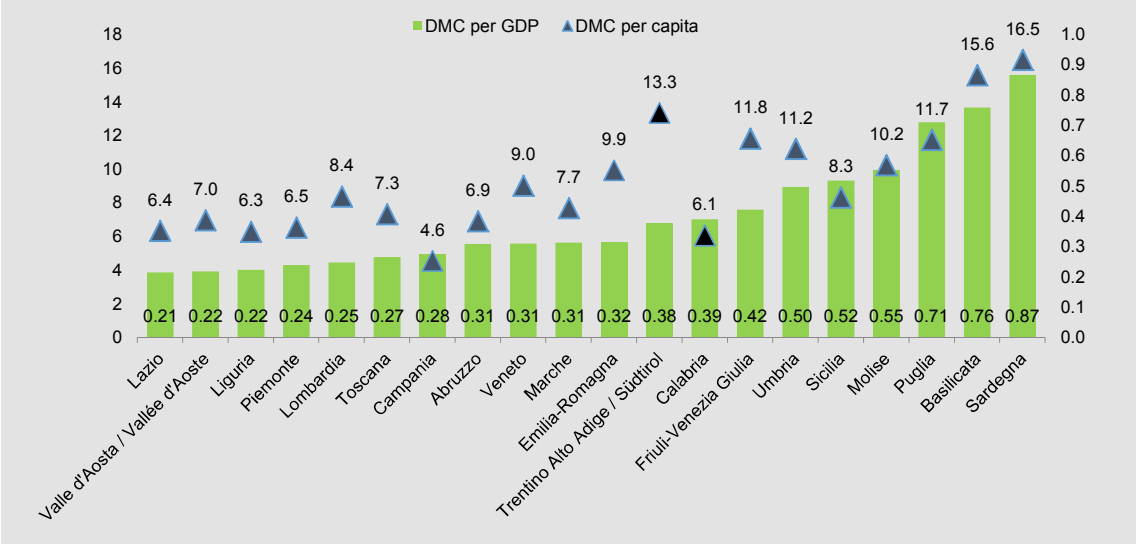


Source: Conti dei flussi di materia (PSN: IST-01999)

After reaching its maximum in 1999 (when it touched a million tons), the total DMC in Italy began to decrease, reaching about 494 million tons in 2017, with a total change of -38% since 1995. Between 2000 and 2017, domestic material consumption showed a decreasing trend of similar magnitude in relation to GDP and to the number of residents dropping by

about 50%: from 0.61 to 0.31 tons per GDP unit and from 16.7 to 8.2 tons per capita (Figure 12.5). After the 2003-2006 stage of growth, from 2007 to 2014 there was an uninterrupted decrease, caused by the overall slowdown in Italian production, especially by the crisis in the construction sector, and by the gradual decrease in manufacturing's share of the total economy (see Goal 9). The year 2015 marked a new increase in the DMC, along with the recovery in production activities, followed by a relative stable period.

Figure 12.6 - Domestic material consumption per capita and per GDP by NUTS 2. Year 2015 (tons per capita and tons/ thousands of euro)



Source: Istat, Conti dei flussi di materia (PSN: IST-01999); Sviluppo di basi dati e procedure per i conti satellite dell'ambiente in termini fisici a livello regionale (PSN: IST-02716)

In 2015, the DMC showed a considerable disparity at regional level, with a variation range, for the per capita indicator, between 4.6 in Campania and 16.5 tons per inhabitant in Sardegna and, for DMC/GDP, between 0.21 in Lazio and 0.87 ton/1,000 Euro in Sardegna (Figure 12.6). High DMC per inhabitant values were observed in Basilicata (16), Trentino-Alto Adige (13) and Friuli-Venezia Giulia and Puglia (12). On the contrary, the DMC per capita was lower in Calabria, Liguria and Lazio (6), Piemonte, Abruzzo, Valle d'Aosta and Toscana (7). The regions that consumed the lowest amount of material in relation to the production output were Valle d'Aosta, Liguria and Piemonte; those with the highest consumption intensity Basilicata, Puglia, Molise, Sicilia and Umbria.

Other indicators

SDG 12.5.1 - National recycling rate, tonnes of recycled material

In order to reach the SCP Goals it is necessary to prevent and reduce the short term and long term return to the environment of waste, atmospheric emissions, pollutants and other substances harmful to the ecosystem and human health. Target 12.5.1 focuses specifically on waste and it envisages by 2030 'substantially reducing the production of waste through prevention, reduction, recycling and reuse'. As opposed to linear pattern 'take, make and dispose' typical of the linear economy, 'reduce, reuse, recycle' is the main inspiration for the circular economy, and a Goal of primary importance in European policies. With the 'Action Plan for the Circular Economy' (COM(2015) 614 final), the European Union established a package of measures addressing the entire economic cycle that aims to get value from the use of raw materials, products and waste[4], to promote energy savings and to reduce emissions of climate-altering gases. The benefits are not only for the environment, but also for the economy and competitiveness (creation of new jobs, openness to innovative production methods and new business prospects). In October 2018, EU launched the new Bioeconomy Strategy, an action plan that aims to develop a circular and sustainable economy, modernizing European industries, boosting growth and investment in the EU, strengthening biosectors and accelerating the introduction of bioeconomies throughout Europe.

In 2017, the production of municipal waste decreased over the previous year with respect to the number of residents (-1.6%) and compared to GDP and to household spending for final consumption[5]. Positive trends can also be seen in relation to waste management. The percentage of municipal waste sent to landfill on total municipal waste collected (SDG indicator 11.6.1) is an indicator relevant to both the European and national Target of using landfills as a residual channel for waste management. The percentage of urban waste sent to landfill decreased from 60% in 2004 to 23% in 2017.

The percentage of recycling[6], providing indications of the economy's ability to use secondary raw materials as resources for production activities, showed a trend on the rise over time: from 36.7% in 2010 to 49.4% in 2017, with a total increase of 12.7 percentage points. Therefore, Italy is approaching the 50% Target established by the European Union for 2020[7].

In 2017, separate collection was reported for almost 16.5 million of tons of waste, a volume that more than doubled since 2004, when it was little more than 7 (Figure 12.7). The percentage ratio of the amount of separate waste collection and the total amount of waste grew by over 30 percentage points: from 22.7% to 55.5% (+3 percentage points compared to previous year). Despite the significant gains, Italy could not catch up the delay, falling

4 The approach to waste management by European policies bases on a hierarchy of priorities - outlined by the Waste Framework Directive (Directive 2008/98/EC) – from prevention, to reuse, recycle and recovery, including the residual option of disposal in landfills or incineration without energy recovery. Consistent with this approach, the Circular economy package provides Union targets for 2030, postponed to 2035 by the revised Waste Framework Directive (Directive (EU) 2018/851): 65% recycling of municipal waste and 75% of packaging waste and a reduction to 10% of the amount of municipal waste delivered to landfills.

5 http://www.isprambiente.gov.it/it.

6 Percentage ratio between the amount of urban waste prepared for reuse or recycled, in a given year and the amount produced in the same year.

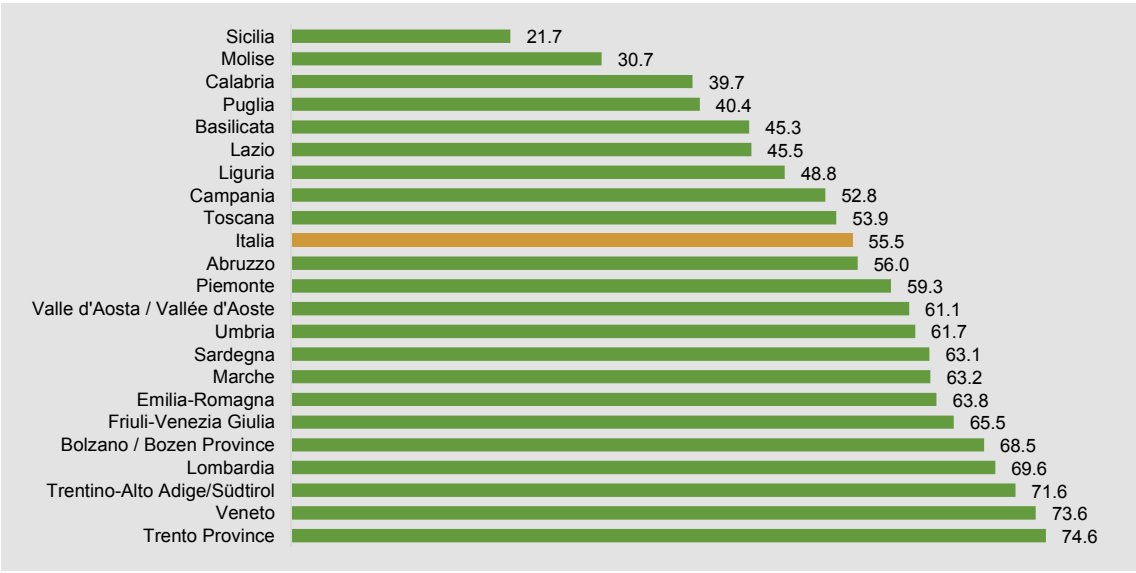
7 Directive 2008/98/EC, implemented in Italy by Legislative Decree 152/2006 and by Legislative Decree 205/2010.

Figure 12.7 - Separate collection of municipal waste. Years 2004-2017 (a) (tons and %)

Source: Ispra, Produzione, recupero, trattamento e smaltimento di rifiuti urbani, speciali e pericolosi (PSN: APA-00001)
(a) From 2016, data is only partially comparable with that of the previous years due to a change in the calculation criteria for data on production of separate collection introduced by M.D. of 26 May 2006.

short of the expected Targets throughout the time period analyzed[8]. The 50% Target set for 2009 was reached just in 2016, with a wide residual distance from the 65% Target for 2012. Despite the recovery marked by Southern and Central areas - which respectively quintupled (from 8.1% to 41.9%) and almost tripled (from 18.3% to 51.8%) the 2004 share – the North area recorded levels higher than the average, and the Centre and South lower levels. The regional data amplified the regional variability (Figure 12.8).

Figure 12.8 - Separate collection of municipal waste by NUTS 2. Year 2017 (%)



Source: Ispra, Produzione, recupero, trattamento e smaltimento di rifiuti urbani, speciali e pericolosi (PSN: APA-00001)

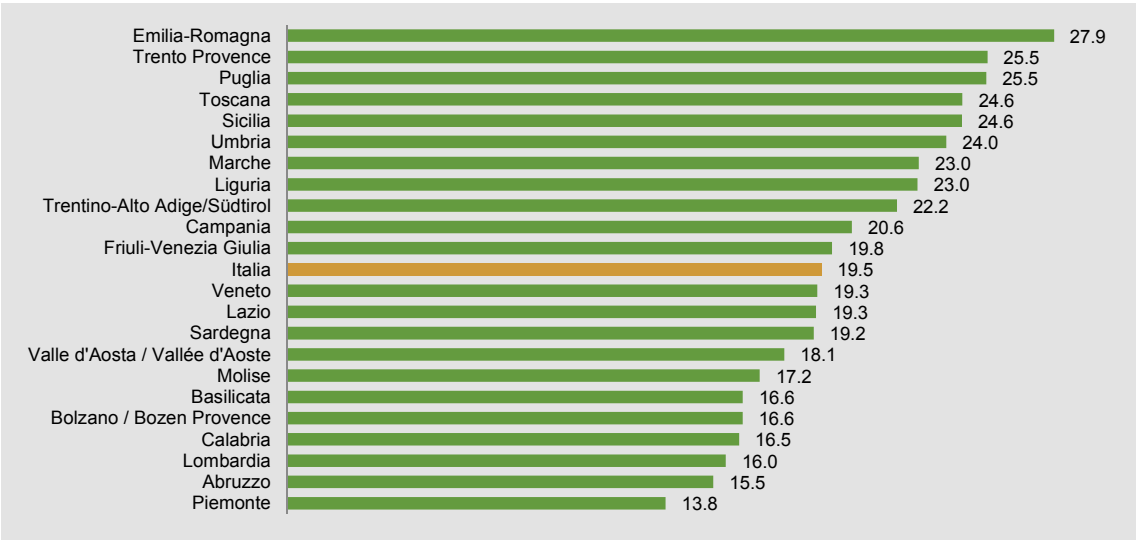
8 The Targets set by Italian law for separate collection are: 35% by 2006, 40% by 2007, 45% by 2008, 50% by 2009, 60% by 2011 and 65% by 2012 (Legislative Decree 152/2006, Law 296/06).

SDG 12.6.1 - Number of companies publishing sustainability reports

Target 12.6 of the 2030 Agenda encourages companies, especially large and transnational companies, to adopt sustainable practices, integrating sustainability information into their reporting cycle. The integration of environmental and social factors into the policies of enterprises and other work organizations is necessary to ensure the sustainability of the development of the production system and, more generally, of the work system. Reducing the environmental impact of activities, improving workers' well-being, ensuring respect for equal opportunities and workers' rights, guaranteeing the safety of work environments and processes, contributing to the realization of initiatives of collective interest and for the benefit of the territory are aims more and more often adopted by work organizations, especially in company contexts. In addition to economic-financial reporting, non-financial reporting[9] analyzes environmental and social performance, provides qualitative and quantitative information on the results of sustainability initiatives offering evaluation elements, contributes to a more punctual planning of companies and institutions considering the actual risks and impacts of their work.

While waiting for a better methodological definition of the SDGs 12.6.1 indicator at international level, Istat has introduced a new indicator relating to the percentage of public institutions that adopt forms of social and/or environmental reporting. In the 2012-2015 period, almost one out of five public institution (19.5%) adopted such reporting (Figure 12.9), with wide territorial differences. The South (19.2%) and, above all, the North-west (15.8%) contributed to reducing the national average result, while the North-east and Central areas and the Islands recorded above-average values (around 22%). Non-financial reporting is particularly widespread in Emilia-Romagna, in the Province of Trento, in Puglia, Toscana and Sicilia, and, on the contrary, less in Piemonte, Abruzzo, Lombardia, Calabria, the Province of Bolzano and Basilicata.

Figure 12.9 - Percentage of public Institutions that adopt forms of social and/or environmental reporting by NUTS 2. Years 2012-2015



Source: Istat, Rilevazione di controllo della copertura del registro delle istituzioni pubbliche e aggiornamento delle unità locali (PSN: IST-02575)

9 In Italy, in implementation of Directive 2014/95/EU, Legislative Decree 30/2016 makes the disclosure of non-financial information mandatory for large companies and voluntarily (and simplified) for SMEs and other organizations to which the obligation does not apply.

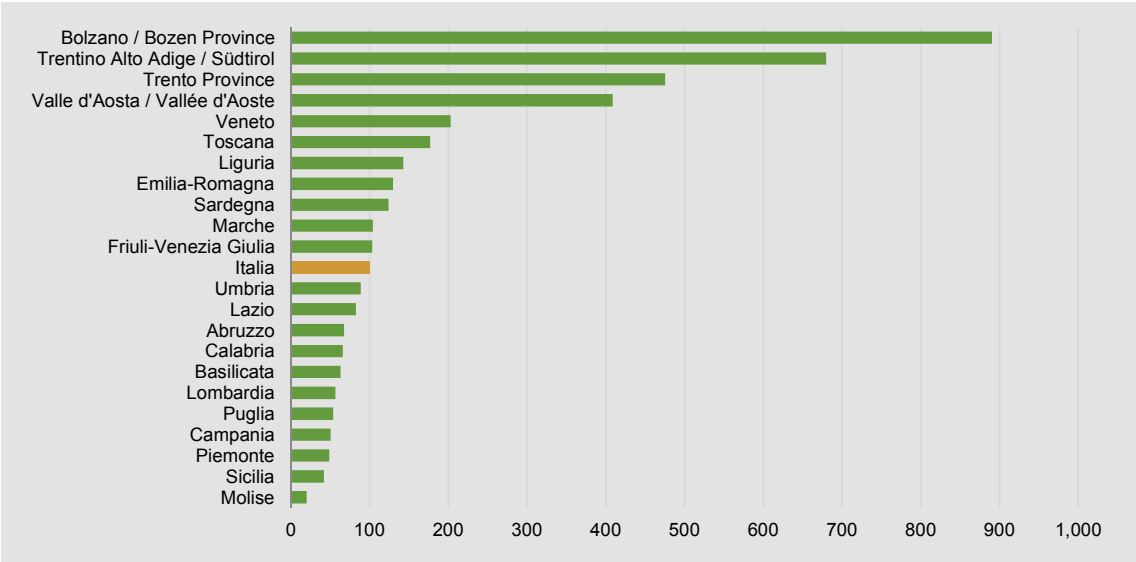
SDG 12.b.1 – Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools

One of the three means of implementation for Goal 12 refers to the need to 'develop and implement tools to monitor sustainable development impacts for sustainable tourism'. The promotion of sustainable tourism is an integral part of the plans and programmes for SCP, not only in relation to the Goal of mitigating human burden on the environment, but also with respect to the role of sustainable tourism as an economic driver, a tool for job creation and a stimulus for enhancement of local culture and products. There is agreement on the need to introduce tourism development policies related to the Goals to protect our cultural and natural assets, introducing synergies between tourist activities and development of the territory and the local economies. At national level, the 2017-2022 Strategic Tourism Plan is an important step in this direction, which strongly emphasized sustainable and durable use of our environmental and cultural heritage in setting the guidelines for developing this sector. In a country where, in 2015, tourism direct GDP as a proportion of total GDP SDG 8.9.1) was equal to 6% and the number of jobs as a proportion of total jobs (SDG 8.9.2) amounted to 8.3%, the challenge lies in the ability to promote a qualitative development of tourism, continuing to support the quantitative one.

The national and international debate recognizes the methodological need to go in-depth with the study of environmental impacts of tourism, defining special tools for analysis and indicators for monitoring. We decided to disseminate indicators (of national context) of demand and impact.

The tourism intensity index (nights spent in tourist accommodation establishments per 1,000 inhabitants) is an indicator of tourist demand. It provides information on the impact of tourism on the community of residents and on the pressures in terms of surplus of services and infrastructures (transport, energy, water and food supply, wastewater and waste management, etc.) necessary to respond to the increase in demand due to fluctuation in attendance. In 2017, in Italy there were on average 6,942 nights spent in tourist accommodation

Figure 12.10 - Tourism intensity index per NUTS 2. Year 2017 (index number Italy =100)

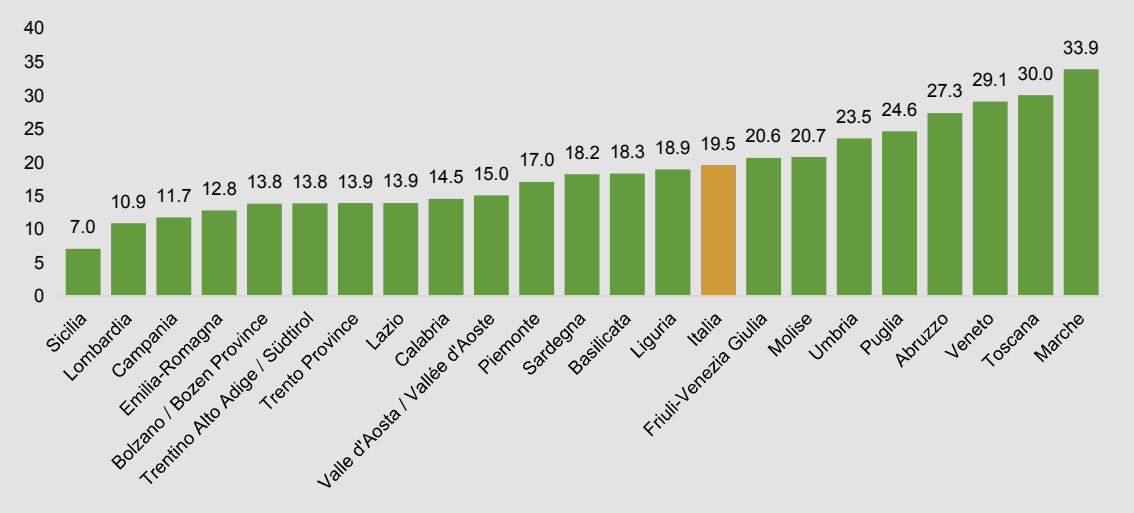


Source: Istat, Movimento dei clienti negli esercizi ricettivi (PSN:IST-00139)

establishments per 1,000 inhabitants: following the growth recorded in the last three years, tourism intensity reached its maximum in the last twenty years (+7.3% compared to 2007). The regions reporting the greatest increase, compared to 2007, are Piemonte (+41%), Basilicata (+38%), Puglia (+31%) and Lombardia (+29%). On the other hand, a contraction is observed, particularly significant for Molise (-32%) Marche (-20%), Abruzzo (-18%) and Umbria (-16%), and less intense in Lazio, Emilia -Romagna, Sicilia and Friuli-Venezia Giulia.

Tourism intensity index's territorial variability is due to the different attractiveness of the Italian regions. The high values registered by the North-East area (14,453 nights per 1,000 inhabitants equal to more than double the Italian average) are due to Trentino Alto-Adige and, in particular, to the Bolzano province which, with more than 60,000 nights, reached a tourism intensity equal to almost 10 times the average one (Figure 12.10). The province of Trento (almost 5 times the Italian average), the Valle d'Aosta (4 times) and the Veneto (the double) followed. In the South, which had a number of nights/1,000 inhabitants equal to about half of the average Italian profile, Sardegna reported the highest level (around 125% of Italian average). Molise (20%), Sicilia, Piemonte and Campania (between 40 and 50%), Puglia and Lombardia (between 50 and 60%) were instead characterized by a much more limited tourism intensity.

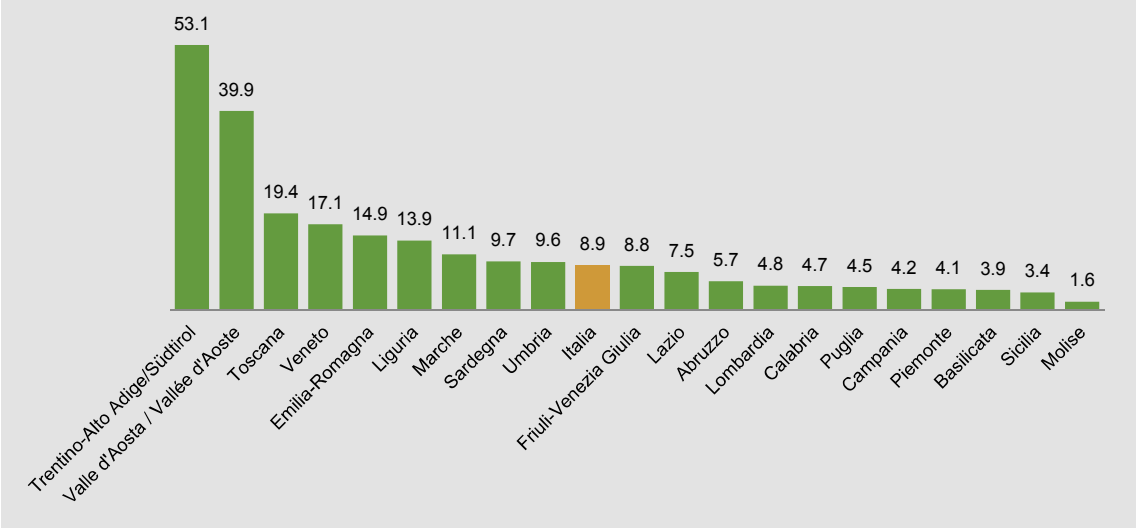
Figure 12.11 - Nights spent in open air establishments, farmhouses and mountain refuges on nights spent in all the accommodation establishments by NUTS 2. Year 2017 (%)



Source: Istat, Movimento dei clienti negli esercizi ricettivi (PSN:IST-00139)

The percentage of nights spent in open air establishments, farmhouses and mountain refuges on the nights spent in all the establishments allows analysis of the demand from a sustainability point of view, considering factors such as the easier occupation reversibility of land of open air structures, the multi-functionality generally associated with farmhouses, whose infrastructures and services are also aimed at activities other than tourism, or, finally, the greater protection of the natural habitat offered by mountain refuges. Between 2012 and 2017, the nights spent in structures with a tendential higher sustainability showed a slight decrease (from 19.9 presences out of 100 to 19.3), mitigated by the effect of the dynamics of the central area, which unlike all the others recorded an increase from 22.7 to 24.4%. In 2017, thanks to the high contribution of Marche (34%), Toscana (30%) and Umbria (24%) (Figure 12.11), the Centre was the area with the greatest diffusion of this type of tourism; the Islands the one with the lowest, with Sicilia recording the lowest value in Italy (7.0%).

Figure 12.12 - Impact of tourism on waste by NUTS 2. Year 2016 (kg/equivalent inhabitant)



Source: Ispra, Database Annuario dei dati ambientali (PSN: APA-00032 - - ISPRA)

The increase in waste production is one of the most significant effects of tourism. The impact of tourism on waste - obtained by the difference between the per capita generation of urban waste calculated with the resident population and the per capita generation of urban waste calculated with the equivalent population[10] - is a national context indicator that helps to quantify the sustainability of tourism in our territory. The tourism sector's contribution to the production of municipal waste shows an irregular but slightly decreasing trend over time. In fact, the impact of tourism on waste, which was equal to 9.4 kilogrammes per equivalent resident in 2006, in 2016 decreased to 8.9 kg/eq.res.). However, the last three years marked an increase, coinciding with the recovery of the tourism.

Coherently with the tourism intensity, the greatest impact of tourism on the production of waste was in Trentino-Alto Adige, which reached 53 kg per resident equivalent, and in Valle d'Aosta, with 40 kg. High values for the indicator were also observed in Toscana, Veneto, Emilia-Romagna, Liguria and Marche, all between 20 and 10 kilogrammes (Figure 12.12). On the opposite side, Molise, Sicilia, Basilicata, Piemonte, Campania and Puglia.

10 The "equivalent population" is obtained by adding to the resident population also the number of overnight stays recorded in the year and spread over 365 days.

In brief

Significant progress in the field of consumption of natural resources, with a reversal of the trend in the last period.

Between 2000 and 2014, the domestic material consumption fell by almost 50%, but returned to growth from 2015, following the recovery in production activities. Nowadays in Italy, 8.2 tons per capita and 0.31 tons per 1,000 euros of GDP are consumed.

In the European comparison, Italy occupies a virtuous position with respect to domestic material consumption.

Italy positioned third last in the ranking of material consumption ratio to GDP (64% of the EU average) and in the last place in terms of per capita DMC (62%). Considerable disparities are observed at regional level with a variation range for DCM per capita between 4.6 tons per inhabitant in Campania and 16.5 in Sardegna.

Positive trends in relation to waste management.

In 2017, the percentage of municipal waste sent to landfill on total municipal waste decreased, reaching 23%; the recycling rate rose to almost the 50% Target set by the EU for 2020.

Italy is still below the target of separate collection set by national law.

Although more than doubled between 2004 and 2017, the percentage of separate collection is still below the Target set for 2012. The regional gaps are substantial.

One public institution out of five adopt non-financial reporting.

Between 2012 and 2015, 19.5% of public institutions adopted forms of social and/or environmental reporting.

The diffusion of Green Public Procurement is very variable depending on the type of good/service.

Over the past three years, the tourism intensity strongly increased.

In 2017, Italy, with 6,942 nights spent in tourist accommodation establishments per 1,000 inhabitants, reached the highest level of tourism intensity index in the last twenty years. The growth was more intense for Piemonte, Basilicata, Puglia and Lombardia.

The nights spent in structures with a tendential higher sustainability is 20 out of 100, with strong territorial variability.

In 2017, the percentage of nights spent in open-air establishments, farmhouses and mountain refuges, equal to about 20%, was higher in Marche, Toscana and Umbria; Sicilia is the region where this type of tourism is less widespread.

The impact of tourism on waste grew in the last three years.

The tourism sector's contribution to the production of waste grew in the last three years, according with the recovery of the tourism.

S D G Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
12.2.2					
	Domestic material consumption per capita				
	Domestic material consumption per GDP				
12.5.1					
	National recycling rate				
	Separate collection of municipal waste				
12.b.1					
	Nights spent in open air establishments, farmhouses and mountain refuges on nights spent in all the accommodation establishments				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

GOAL 13

TAKE URGENT ACTION
TO COMBAT CLIMATE CHANGE AND ITS IMPACTS[1]

Goal 13 is aimed at taking urgent actions to combat climate change and its impacts. The rising of temperatures of the atmosphere and of the oceans, changes in precipitation patterns, sea level rise and its acidification are transformations that are taking place with consequences on the environment - for example, melting snow and ice or alterations of the ecosystem's balance and on the socioeconomic system, harming agriculture and other productive activities, risking the maintenance of the territory and infrastructure, threatening the health and safety of people. The increasing greenhouse gas concentrations due to **emissions** from anthropogenic activities is the main **driver** of 'global warming'.

This climate crisis is a multidimensional phenomenon which involves economic, social and environmental issues at the global scale, requiring urgently systemic and integrated **responses**. This is the direction taken by the United Nations Framework Convention on Climate Change[2] and related agreements such as the Kyoto Protocol[3] and the Paris Agreements[4]; the latter, approved in 2015, committed 195 countries to limit the increase in the average global temperatures and implement **mitigation** and **adaptation** strategies: reduce the causes of the emissions and protect against the **impacts**. Almost all the 17 SDGs include issues related to this matter in terms of causes or their effects.

Climate change is also cause of exacerbation of climatic and hydro-meteorological disasters. In 2015, the Sendai Framework for Disaster Risk Reduction 2015-2030 was adopted with the aim to reduce mortality, the number of persons affected, economic losses, damages to infrastructures and basic services in the case of hazardous events and disasters.

The Targets of Goal 13 are aimed at developing and integrating policies, strategies, national and local plans for mitigation and adaptation, strengthening the resilience to risks related to climate and natural disasters, increasing awareness by citizens and institutions.

Facing the climate crisis is a global challenge which requires the transition towards a low-carbon economy. The Framework Convention of the United Nations on Climate Change (COP24, December 2018) underlines the need of an equitable transition, ensuring, protecting

1 This section was edited by Giovanna Tagliacozzo, with contributions from Angelica Tudini.

2 1992, United Nations Framework Convention on Climate Change (UNFCCC) http://unfccc.int/essential background/items/6031.php.

3 1997, Kyoto Protocol http://unfccc.int/kyoto protocol/items/2830.php.

4 Paris Climate Agreement (UN decision 1/CP.21, adoption of the Paris Agreement). Adottato al Third UN World Conference on Disaster Risk Reduction in Sendai, Japan.

and promoting new jobs. It would therefore be necessary to provide public support to the economies of the countries signatory of the Agreement, ensuring the transition to a greener economy, safeguarding welfare and social cohesion, environmental protection and economic competitiveness.

Hazardous events caused by climate change are intensifying also in Italy: landslides, floods, forest fires, heavy rainfall, heat waves and other extreme climate events. The country is also subjected to volcanic events and earthquakes, which caused greater losses and damages where the land and infrastructures are more fragile and vulnerable.

Targets

Goal 13 is broken down into five Targets, the last two refer to means of implementation:

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

13.2 Integrate climate change measures into national policies, strategies and planning.

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

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.

Target 13.a must be achieved by 2020.

Indicators released by Istat

Istat releases fourteen statistical measures for Goal 13.

Table 13.1 - List of SDGs indicators and indicators released by Istat

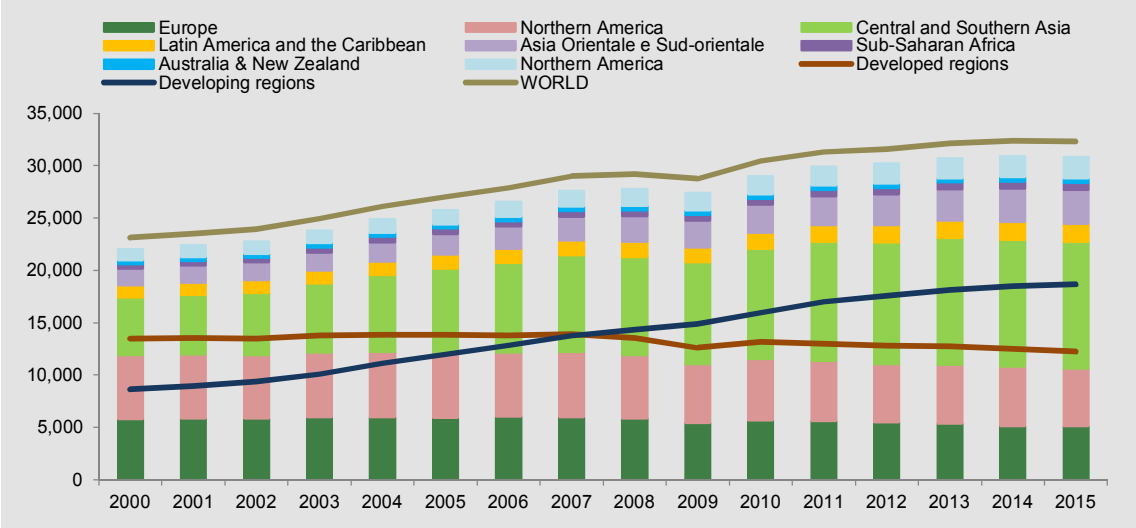
Indicators	Relation with SDG indicator	Last available value
Target 13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries		
Greenhouse gas emissions (GHG) (Istat, 2016, ton CO_2 equivalent):	National context	
- emission inventory totals (UNFCCC)		427,861,993
- balance between the emissions generated in the Rest of the World by units that are resident in Italy and the emissions generated on the national territory by units that are not resident in Italy		8,760,129
- air emission accounts totals		436,622,122
Emissions of CO_2 and other greenhouse gases (Istat, 2016, ton CO_2 equivalent per capita)	National context	7.2
Deaths and missing persons for landslides (Ispra, 2018, number)	Partial	12
Injured persons for landslides (Ispra, 2018 number)	Partial	29
Deaths and missing persons for floods (Ispra, 2017, number)	Partial	9
Number of injured persons for floods (Ispra, 2017, number)	Partial	....
Population at risk of landslides (Ispra, 2017, %)	National context	2.2
Population at risk of flood (Ispra, 2017, %)	National context	10.4
Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning		
Number of the seismic movements (>= 4.0) (Ingv, 2017, number)	National context	20
Forest fires impact (Istat, based on Comando Carabinieri Tutela forestale, Nucleo Informativo Antincendio Boschivo data, 2017, per 1,000 kmq)	National context	5.4
Mean near surface temperature deviation (Global and Italy) (Ispra, 2017, °C)	National context	Global 1.20 Italy 1.30

(....) The phenomenon exists, but the data are not known for any reason.

Focus

The signing of the Paris Agreements commits countries to reduce greenhouse gas emissions. At COP24 in Katowice in 2018, the rules for implementing the agreements were defined. The global challenge is to preserve sustainable economic growth rates by reducing greenhouse gases in the atmosphere. Globally, carbon dioxide emissions have been increasing by 40% since 2000. There was a slight decrease only in 2009, but this was not followed by a reversal of the trend, as emissions returned to growth. In the last year available, 2015, there was a slight decrease compared to the previous year, with emissions amounting to 32,294.213 million tonnes of CO_2. The United Nations data document how, until 2008, the major emitters were the developed countries and, among these, mainly those of North America and Europe. Subsequently, these countries reduced their emissions - as a result of the drop in production due to the economic crisis, but also thanks to the conversion of energy supplies and the efficiency of systems - while developing countries, in achieving the same levels of growth, increased them (Figure 13.1).

Figure 13.1 - Emissions of carbon dioxide by geographical area. Years 2000-2015 (millions of tons of CO_2)



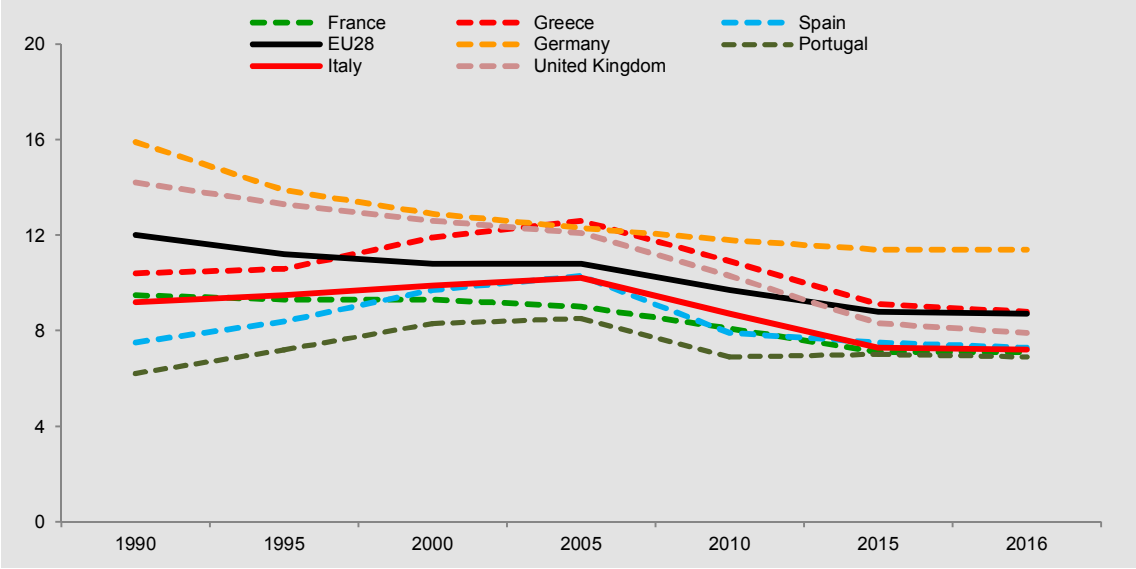
Source: UN

In Europe (EU28), the indicator on "Emissions of CO_2 and other greenhouse gases[5] per capita" showed a slight decrease between 2015 and 2016, from 8.8 to 8.7 tons of CO_2 equivalent per capita[6]. Likewise in Italy, where emissions per capita were below the EU28 average, the decrease was 7.3 and 7.2 in the two years. The dynamics of this indicator since the '90s is different from country to country. Portugal, for example, already had a value of 6.2 tonnes per capita in 1990, while Germany has recently reached its minimum level of 11.4. Luxembourg, despite its constant decrease over the years (34.5 in 1990), continues to have the negative record, with 19.8 tonnes per capita (Figure 13.2).

5 In addition to carbon dioxide (CO_2), which is the gas emitted in the greatest quantities, the main atmospheric gases that cause the greenhouse effect are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluorides (SF_6), methane (CH_4), nitrous oxides (N_2O) and nitrogen trifluoride (NF_3).

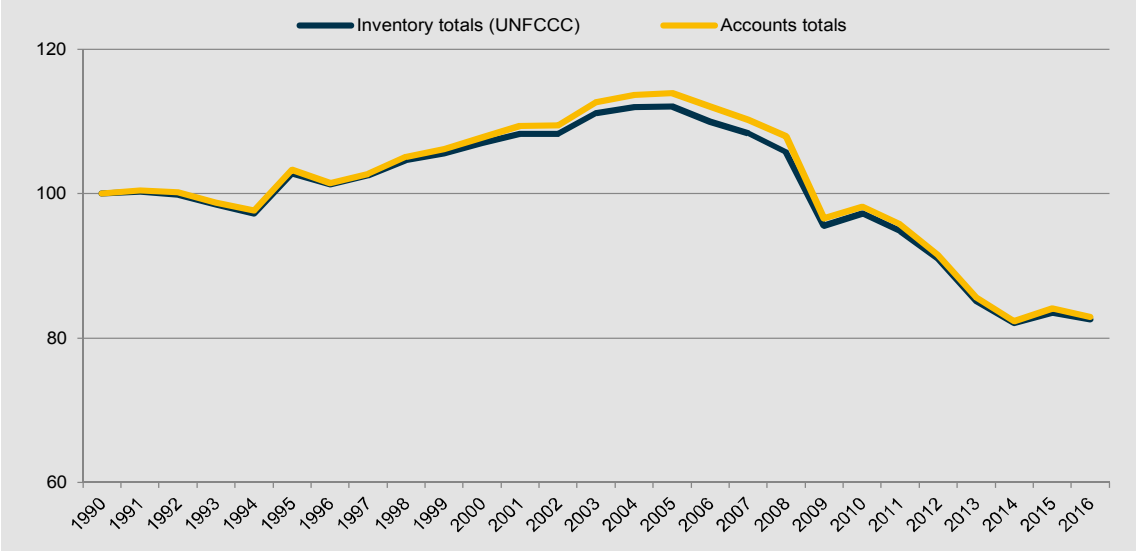
6 Provisional data.

Figure 13.2 - Greenhouse gas emissions in the EU28 and by country. Years 1990-2016 (tonnes of CO_2 equivalent per capita)



Source: Eurostat

Figure 13.3 - Total greenhouse gas according to the national inventory of emissions (UNFCCC) and the air emission accounts. Years 1990-2016 (index numbers based on 1990=100)



Source: Istat-Ispra

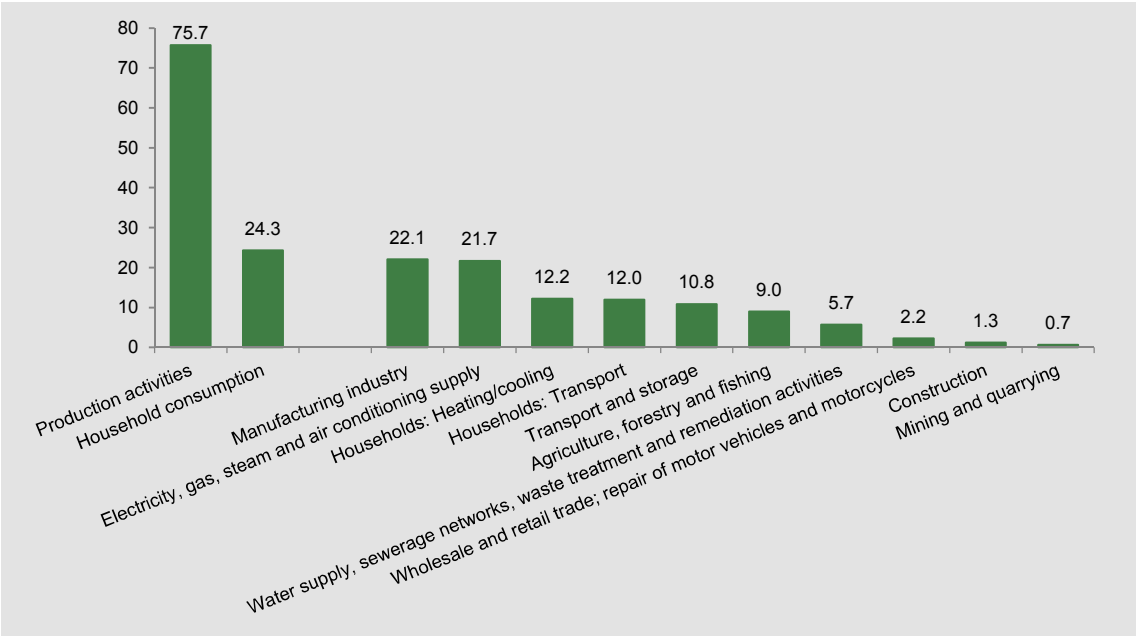
In Italy, greenhouse gas emissions have been decreasing since 2005, year in which, according to the national inventory[7], they amounted to 580,851 thousand tonnes of CO_2 equivalent. In 2016 they amounted to 427,862 thousand, with a decrease of about 1% compared to the previous year and a value lower than 1990 (518,363 thousand tonnes of CO_2 equivalent) (Figure 13.3).

7 The national inventory of air emissions, annually released by Ispra, provide the data for the Italian National Communications within the framework of the United Nations Convention on Climate Change (Unfccc) and the Convention on long range transboundary air pollution (Clrtap).

Air emissions accounts, which quantify the emissions of resident units in accordance with the principles and standards of the national economic accounts, amounted to 436,622 thousand tonnes of CO_2 equivalent. The balance between the two measurements (8,760) is due to emissions from resident units operating abroad for road, air and sea transport activities and from non-resident units operating on national territory for the same activities.

Three quarters of the emissions are generated by production activities and a quarter by households' consumption. Among the production activities, the manufacturing industry has the highest share of emissions (22.1%), followed by electricity, gas, and steam supply and air conditioning (21.7%). The two main emission sources deriving from the activities of households: "Heating/cooling" and "Transport", come next, each accounting for 12%; they are followed by "Transport and storage" (10.8%), "Agriculture, forestry and fishing" (9%) and "Water supply, sewerage networks, waste treatment and remediation activities" (5.7%) (Figure 13.4).

Figura 13.4 - Greenhouse gas emissions according to air emission accounts, by households and production activities (NACE), Europe and Italy. Year 2016 (%)

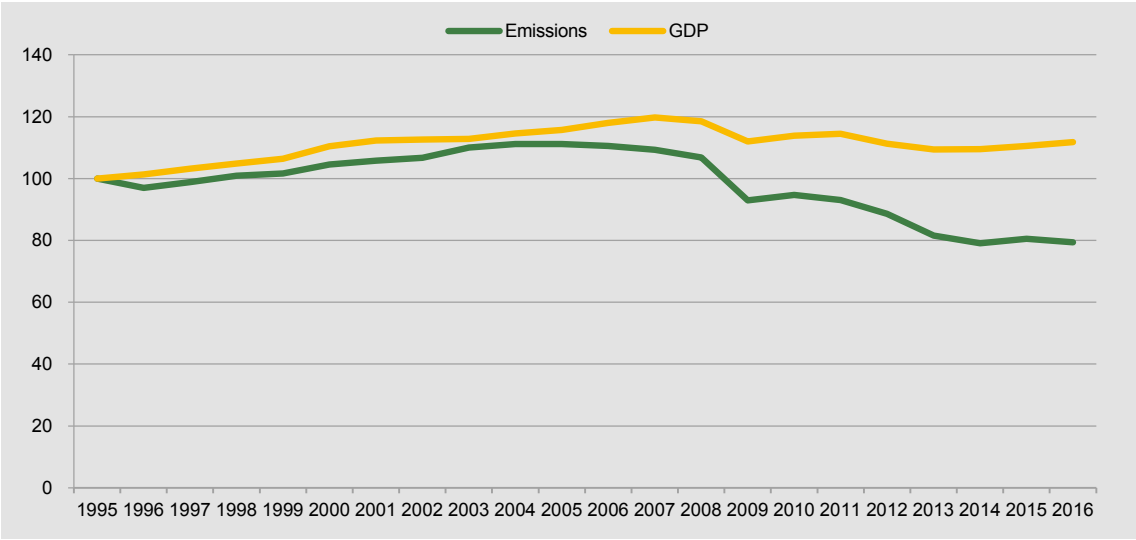


Source: Istat

The decoupling between emissions from production activities and GDP in the period 1995-2016 has alternating phases, including sub-periods in which the decoupling has reached higher levels and others in which it has been less evident or has not taken place. In the last year available, the decoupling became more pronounced (Figure 13.5).

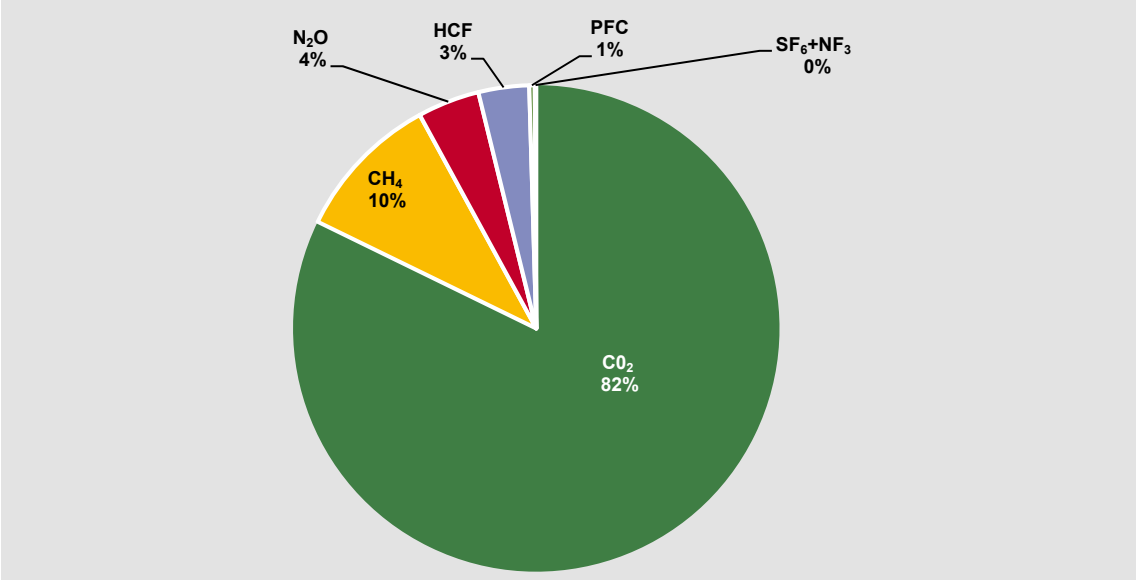
In the composition of greenhouse gas emissions, the main element is carbon dioxide (CO_2), which accounts for more than 80%, while the contribution of methane (CH_4) is about 10%, nitrous oxide (N_2O) 4% and hydrofluorocarbons 3%. To a lesser extent, perfluorocarbons (0.4%) and nitrogen hexafluorides and triflorides (0.1%) are present (Figure 13.6).

Figure 13.5 - Atmospheric emissions of greenhouse gas due to production activities and GDP (Italy, 1995-2016, index number based on 1995=100)



Source: Istat

Figure 13.6 - Greenhouse gases by substance. Year 2016 (%)



Source: Ispra

Other indicators

Three of the Goals of Agenda 2030 include some of the indicators of the Sendai Framework for Disaster Risk Reduction[8]. Risk management is, in fact, linked to Goal 1 dedicated to poverty, to underline the vulnerability related to environmental risks; to Goal 13 as many hazardous events and natural - and hydrogeological - disasters are closely related to climate change; and Goal 11, because risk management in urban areas must take into account specific characteristics of fragility and vulnerability of the territory and the population,

8 https://www.unisdr.org/we/coordinate/sendai-framework.

especially in degraded, overused and densely populated areas. In Target 13.1 "Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries", indicator 13.1.1 refers to the " Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population". In Italy, hazardous events are also intensifying due to climate change: landslides, floods, forest fires, storms, extreme climatic, heat waves, causing disastrous cascade and multi-risk events. The country is also subject to volcanic events and earthquakes, which cause greater losses and damage where the territory and infrastructure are more fragile and vulnerable.

Figure 13.7a - Population at risk of landslides. Year 2017 (%)

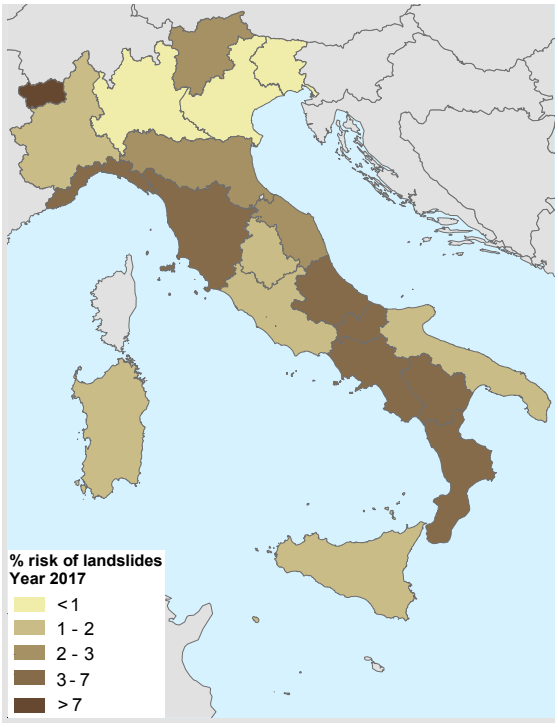
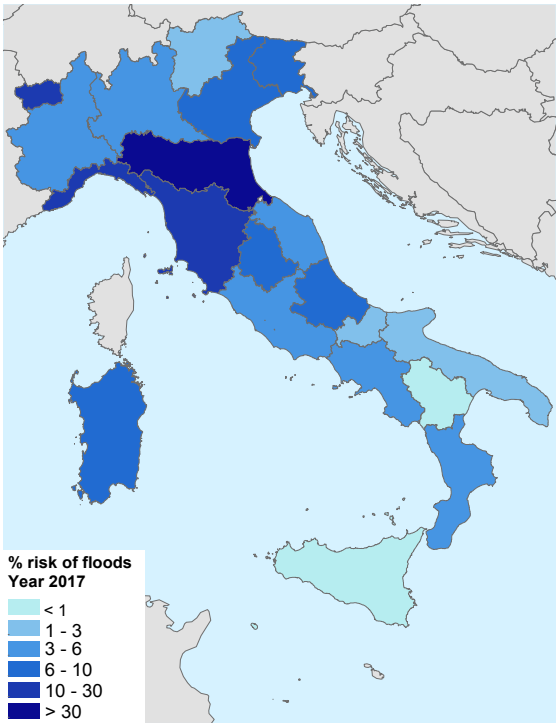


Figure 13.7b - Population at risk of floods. Year 2017 (%)



Fonte: Ispra

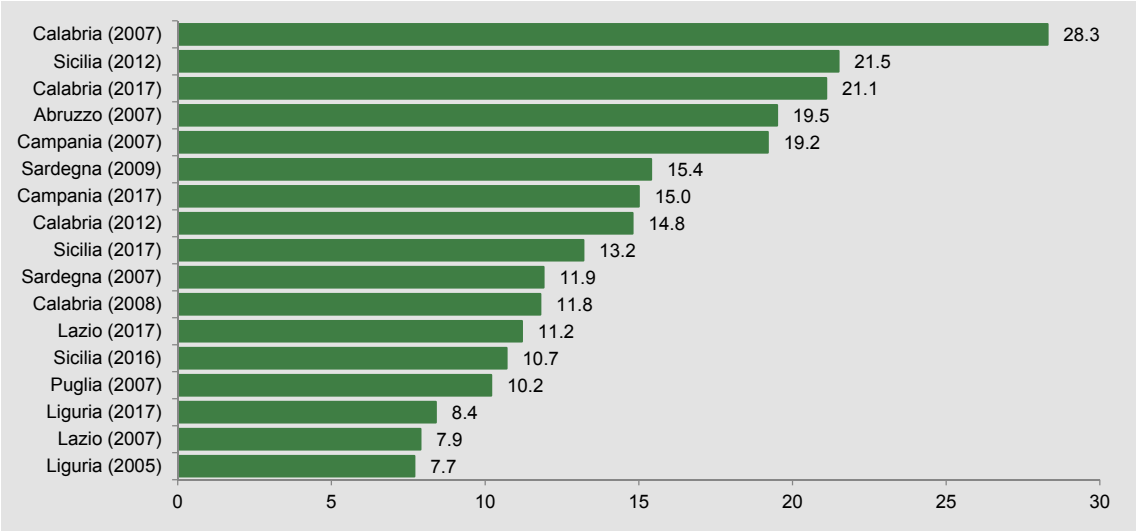
In 2017, 10.4% of the population was exposed to flood risk[9], i.e. the risk of personal injury (deaths, missing, injured, evacuated), while the percentage exposed to landslide[10] risk was 2.2%. More than 200 people died as a result of landslides, floods or flooding in the entire period 2000-2018; more than 300 people were injured.

As for forest fires, the area covered by fire for 1,000 km^2 is, in general, between 1 and 2.5.

In some years, peaks have been reached (Figure 13.8): for example, in 2017 the area covered by the fire was equal to 5.4 per thousand km^2, in 2012 it was 4.3 and in 2007 it had reached 7.5 per thousand km^2. Various climatic factors contribute to the occurrence of forest fires, such as, for example, long droughts and high atmospheric temperatures, as well as the maintenance of the territory and the controls aimed at preventing arson or negligence are crucial.

9 Population at flood risk resident in medium flood hazard zones (Return period 100-200 years; D. Lgs. 49/2010).
10 Percentage of the population in areas with high and very high landslide hazards on the total resident population.

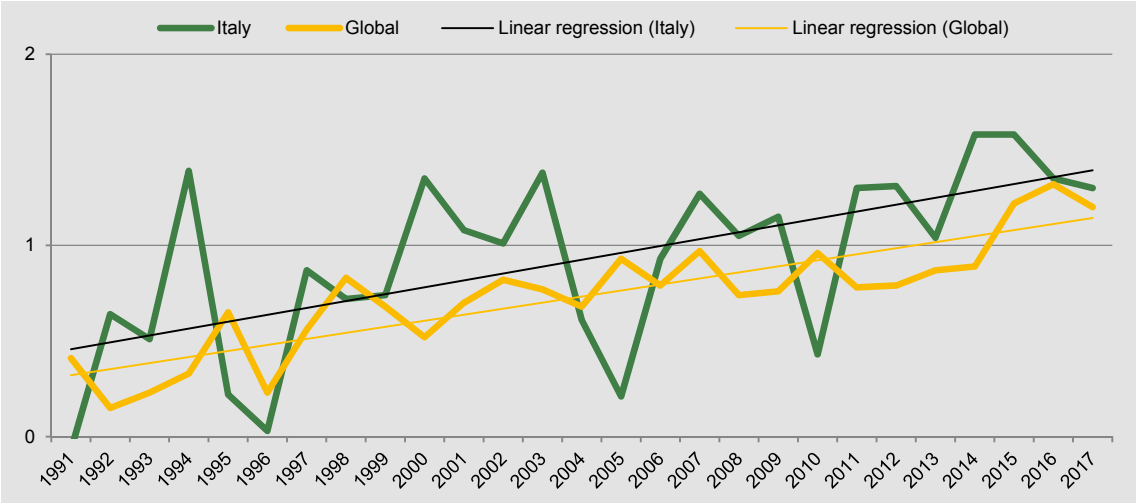
Figure 13.8 - Forest fires impact: area covered by the fire, values per 1,000 km² in the regions with main impact. Years 2005-2017 (per 1,000 km²)



Source: Istat, based on data by Corpo forestale dello Stato , Protezione Civile (2005-2015) and Comando Carabinieri Tutela forestale, Nucleo Informativo Antincendio Boschivo (2016-2017)

As far as temperatures changes, anomalies in the global average of mainland temperatures and in Italy, compared to normal climate values (Ispra), result in an increase of 1.20 and 1.30 °C, respectively (Figure 13.9).

Figure 13.9 - Mean near surface temperature deviation (Global and Italy), with respect to Normal Climatological values 1961-1990 (°C)

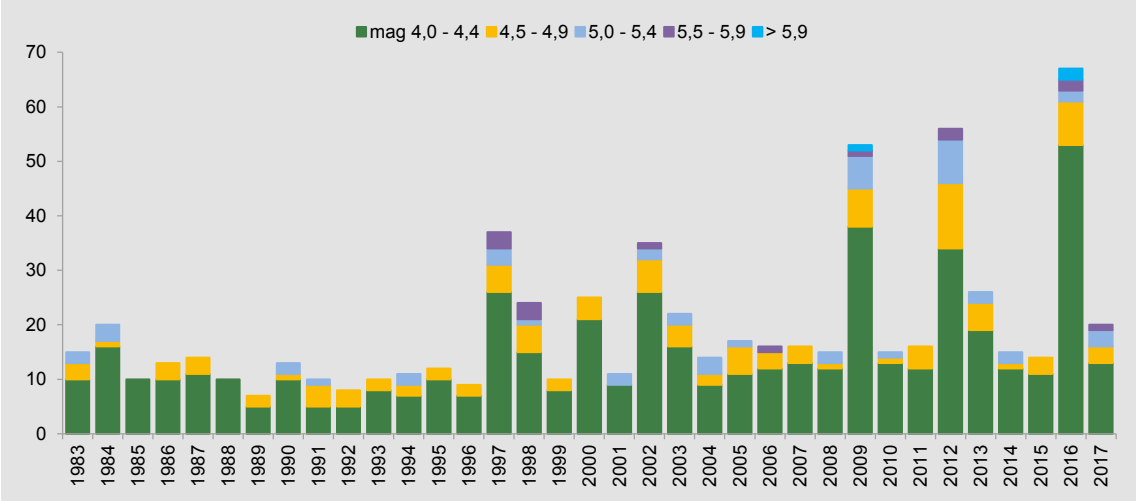


Source: Ispra

Italy is characterized by areas with high seismic risk. The Ingv National Seismic Network records earthquake data of magnitude greater than or equal to 2.0. In 2017 in Italy, there were 20[11] earthquakes with a magnitude of 4.0 or more, one of which was in the 5.5-5.9 magnitude range. 2016 was a year of high seismic intensity, with 67 events, two of which were in the magnitude range 5.0-5.4, two in the range 5.5-5.9 and two above magnitude 6 (Figure 13.10).

11 http://cnt.rm.ingv.it/.

Figure 13.10 - Number of the seismic movements (>= 4.0) by magnitude class (n)



Source: Ingv

In brief

Globally, carbon dioxide emissions have increased by 40% compared to 2000. In the last available year, 2015, there was a slight decrease compared to the previous year, with emissions amounting to 32,294,213 million tonnes of CO_2.

In Europe, emissions of CO_2 and other greenhouse gases per capita showed a slight decrease between 2015 and 2016, with 8.7 tonnes per capita. In Italy the decrease was similar (7.2 tonnes per capita). The dynamics of this indicator is different in EU countries.

In Italy, greenhouse gas emissions (Unfccc) have been decreasing since 2005, when they amounted to 580,851 thousand tonnes of CO_2 equivalent. In 2016 there were 427,86 thousand, with a decrease of about 1% compared to the previous year.

Three quarters of emissions are generated by production activities and a quarter by household consumption. Among the production activities, the first responsible for emissions is the manufacturing industry (22.1%), then the supply of electricity, gas, steam and air conditioning (21.7%). For the household component, “Heating/cooling” and “Transport” each account for 12%. The dissociation between the dynamics of emissions from production activities and GDP has alternating phases. In the last year available, decoupling seems to have increased.

In the composition of greenhouse gas (GHG) emissions, the predominant element is carbon dioxide (CO_2), which accounts for more than 80%; methane (CH_4) contributes 10%; other greenhouse gases follow.

In Italy, hazardous events are intensifying, also due to climate change, with disastrous multi-risk cascade events: landslides, floods, forest fires, storms, extreme climatic events, heat waves, water scarcity.

The fragility and mismanagement of the territory, the poor maintenance and obsolescence of the infrastructures aggravate the human, economic and environmental losses. In 2017,

10.4% of the population was exposed to flood risk, i.e. the risk of personal injury (deaths, missing, injured, evacuated), while the population exposed to landslide risk was 2.2%.

Average near surface temperature deviation on the global mainland and in Italy resulted in an increase of 1.20 and 1.30 °C, respectively, compared to normal climate values (1961-1990).

The impact of forest fires had peaks in 2007, 2012 and 2017: in 2007 the area covered by fire for 1,000 km^2 reached the value of 7.5, in 2012 4.3 and in 2017 5.4 per thousand km^2. The regions of the South have suffered the greatest impacts.

Italy is also subject to events of seismic and volcanic origin, which cause greater losses and damage where the territory and infrastructure are more fragile and vulnerable. 2016 was a year of high seismic intensity, with 67 events, six of which were above magnitude 6.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
13.1.1					
	Greenhouse gas emissions (GHG) inventory totals (UNFCCC)	a	b	c	d
	Greenhouse gas emissions (GHG) account totals	a	b	c	d
	Emissions of CO_2 and other greenhouse gases	a	b	c	d
13.3.1					
	Forest fires impact				

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2006-2016
(b) 2006-2011
(c) 2011-2016
(d) 2015-2016

GOAL 14

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT[1]

Goal 14 Targets conservation of the oceans, seas and marine resources, essential elements for health and the safeguard of the whole planet. The climate, the availability of fresh water and food, even the air we breathe are regulated by the sea. Healthy and productive oceans preserve marine and coastal ecosystems, ensuring that countries and populations on the sea have a thriving economy. The protection of the sea is based on the conservation, recovery and restoration of ecosystems by combating the negative effects of the acidification processes[2], marine pollution caused by activities on land and destructive fishing activities. Human activity, if not regulated, causes depletion of fish reserves and the loss of natural habitat along the coasts. Sustainable management policies for fishing, aquaculture and tourism need therefore to be adopted. Conservation of marine biodiversity also ensures livelihoods for developing countries.

1 This section was edited by Giovanna Tagliacozzo, with contributions from Tiziana Baldoni.

2 Oceans normally absorb between 25% and 30% of the carbon dioxide annually released into the atmosphere. If the concentration of CO_2 in the atmosphere increases, the chemical balance is altered causing the process known as ocean acidification.

Targets

Goal 14 is broken down into ten Targets, the last three refer to means of implementation:

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.

Targets 14.2, 14.4, 14.5 and 14.6 must be achieved by 2020; Target 14.1 by 2025, Target 14.7 by 2030.

Indicators released by Istat

There are seven statistical measures released by Istat for Goal 14, referring to two of the ten Targets.

Table 14.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 14.4.1 - Proportion of fish stocks within biologically sustainable levels		
Fish stock in over exploitation (Western Mediterranean) (Ispra, 2016, number)	Proxy	25.0
Fish stock in over exploitation (Western Mediterranean) (Ispra, 2016, %)	Proxy	83.3
Consistency of fishing - Effort (Ispra, 2017, number)	Proxy	17.1
Consistency of fishing - CPUE (Catch Per Unit of Effort) (Ispra, 2017, kg)	Proxy	10.5
SDG 14.5.1 - Coverage of protected areas in relation to marine areas		
Marine protected areas EUAP (Ministry of the Environment and Protection of the Land and Sea, 2013, km^2)	Partial	3,020.5
Marine areas included in the network Natura 2000 (Ministry of the Environment and Protection of the Land and Sea, 2017, km^2)	Partial	5,878
Coastal bathing waters (Istat, based on Ministry of Health data, 2017, %)	Proxy	66.9

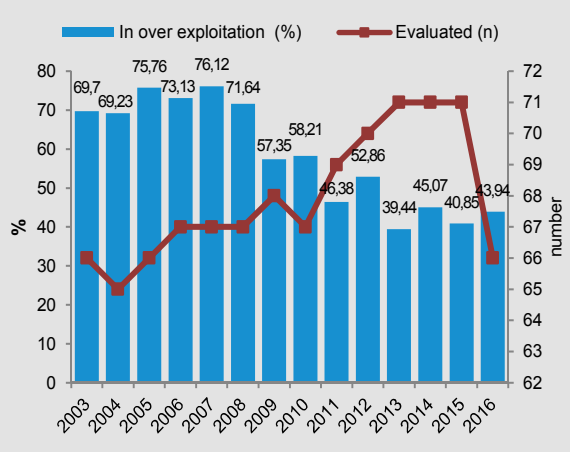
Focus

SDG 14.4.1 - Proportion of fish stocks within biologically sustainable levels

Intensive fishing cause overfishing of the seas in relation to the capacity of self-restoration, with negative effects on the environment. Phenomenon produced by climate changes, such as water heating, rising sea levels, acidification, etc. have an impact on the marine ecosystem and exacerbate the unsustainability of intensive fishing. To ensure fish regeneration, the exploitation of fish stocks must be held at the level to ensure reproduction. Eurostat provides the indicator of the share of fish stocks exceeding the estimate of the fishing mortality (by death or removal of fish), consistent with the achievement of the (FMSY)[3] in the North-East Atlantic and adjacent areas, together with the number of the assessed stocks. The FMSY value is determined by the average size of long-term stocks and represents the point where the largest catch can be taken from a fish stock for an indefinite period without damaging it. The percentage ratio represents the share of overfished fish stocks in the stocks considered.

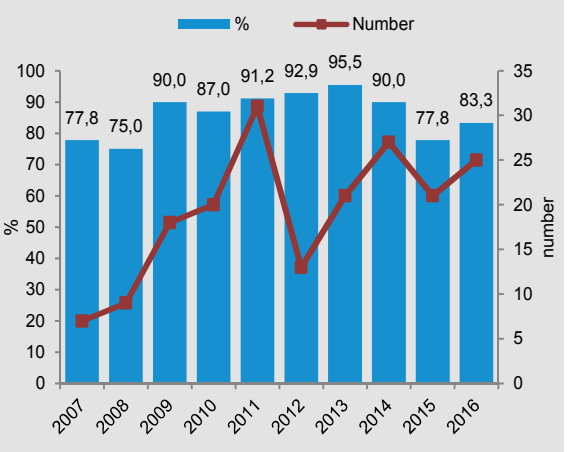
Since 2003, the share of overfished fish stocks in the North-East Atlantic and adjacent areas has been ranging between about 40 and 70%, with a decreasing trend. Starting from 2012, the share fell below 50% (Figure 14.1a). With regard to the Western Mediterranean geographical area, between 2007 and 2016, the percentage of overfished fish stocks varies between 75% and 95%[4]. The maximum value was reached in 2013 (95.5%); in the following two years, the share reduced up to 78%, and then rose again in 2016 to 83% (Figure 14.1b).

Figure 14.1a - Fish stocks exceeding mortality for fishing at maximum sustainable yield (FMSY) in the north-east Atlantic and adjacent areas. Years 2003-2016 (%,n)



Source: JRC, STEFC

Figure 14.1b - Percentage of overfished fish stock in the geographical area of the Mediterranean (Western). Years 2007-2016 (%,n)



Source: Ispra

3 FMSY: Fishing mortality at Maximum Sustainable Yield.

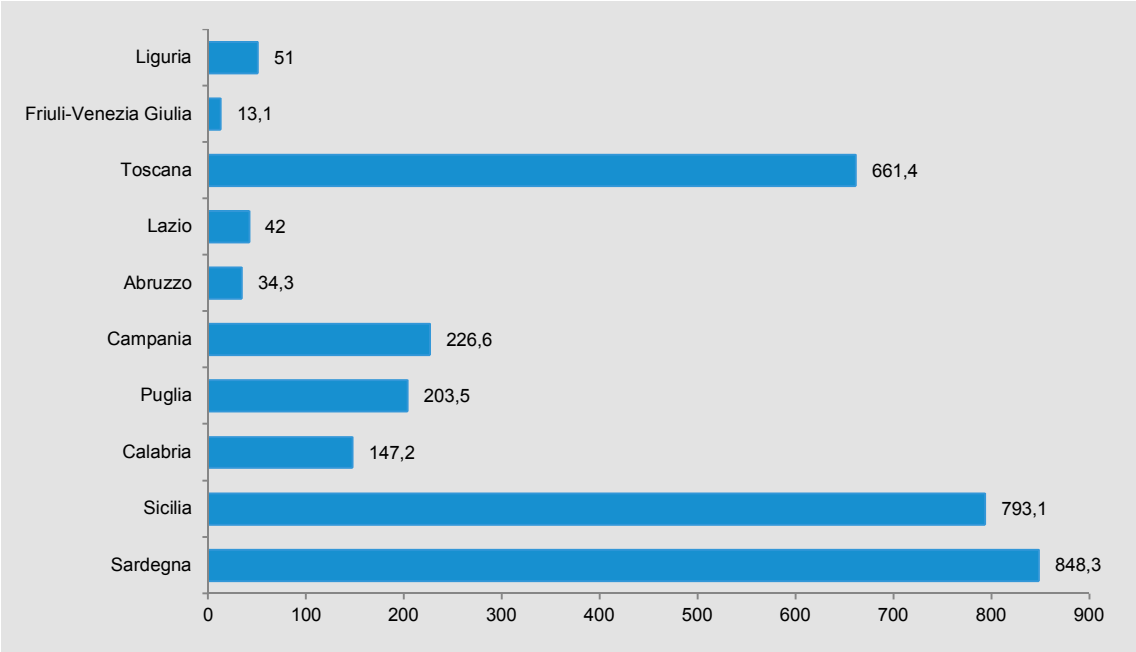
4 The values measured in the North-East Atlantic and adjacent areas and in the geographical area of the Western Mediterranean are the result of different methodologies are therefore not comparable.

SDG 14.5.1 - Coverage of protected areas in relation to marine areas

Protected natural areas are a part of the territory subject to a special system of protection and management, with physical, geological, geomorphological and biological formations or groups having high natural and environmental value. The framework law on protected areas, no. 394/1991, defines the classification of protected natural areas and establish the Official List of Protected Areas (EUAP), which includes all the areas that meet the criteria previously established by the National Committee for Protected Natural Areas. The list was drawn up and is periodically updated by the Ministry of the Environment and Protection of the Land and Sea, and includes all marine and land-based protected natural areas that have been officially recognized. The list currently in force refers to the sixth update, approved on 27 April 2010 and reviewed in 2013.

In 2013, in Italy the extent of the marine protected areas amounted to 3,020.5 square kilometres; three-quarters of the protected areas are located in three regions: Sardegna (848.3 km^2), Sicilia (793.1 km^2) and Toscana (661.4 km^2).

Figure 14.2 - Marine protected areas EUAP. Year 2013 (Km^2)

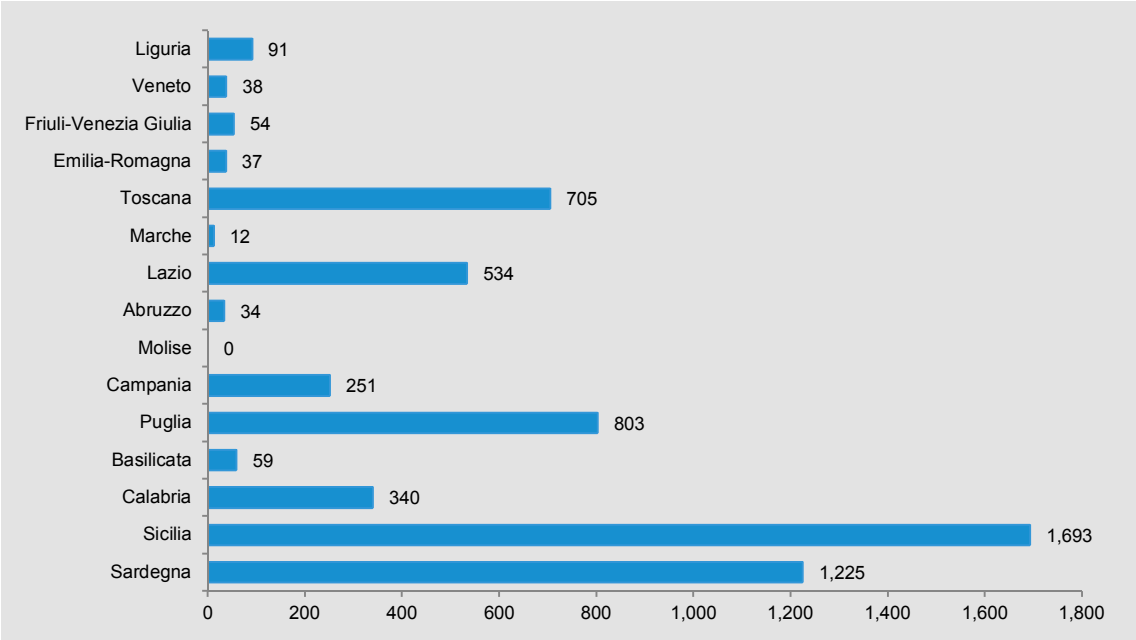


Source: Ministry of the Environment, Land and Sea Protection

A comparison with the 2003 data shows an increase in the protected marine areas of 386 km^2 [5]. Most of this increase can be attributed to Campania, which established new marine parks between 2004 and 2009 totalling a further 209 km^2 area. The marine areas included in the Natura 2000 network are constituted on the basis of the merging (net of of overlaps), of Special Protection Areas (ZPS), Sites of Community Importance (SIC and Zsc).The Natura 2000 network in 2017 had an area of 5,878 square kilometers, half of which is located in the two islands of Sicilia (1,693 km^2) and Sardegna (1,225 km^2) (Figure 14.3).

5 Compared to the 2010 figure, for 2013 the areas have been redigitalised and the allocations have been redefined.

Figure 14.3 - Marine areas included in the network Natura 2000. Year 2017 (km^2)



Source: Ministry of the Environment, Land and Sea Protection

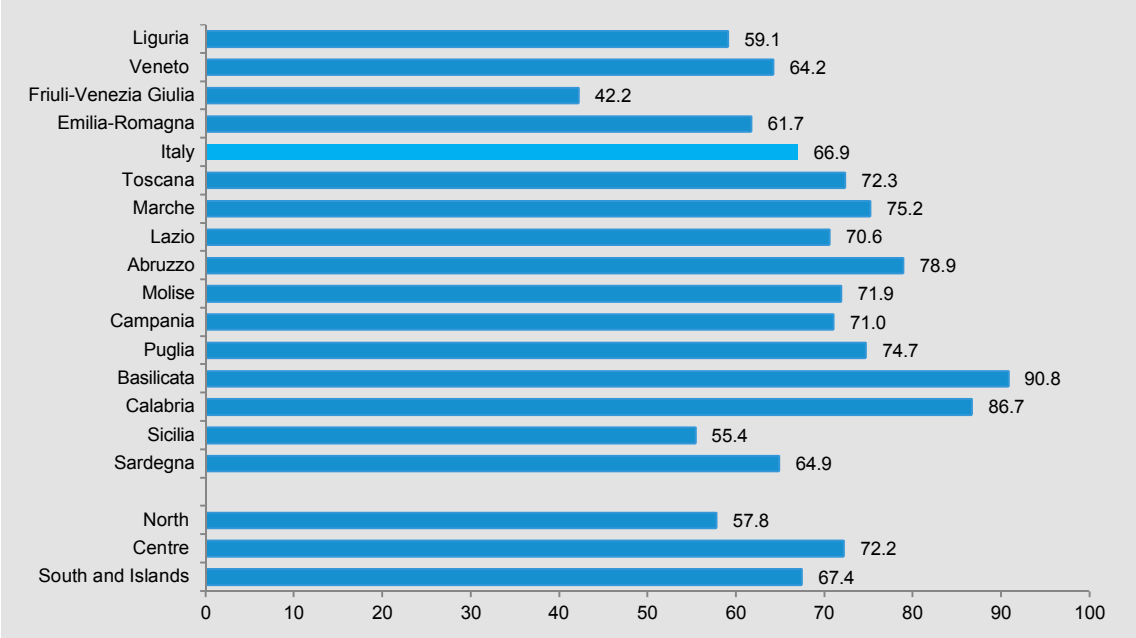
To integrate the information on marine waters, the indicator of coastal bathing waters evaluates the overall quality of the water and marine environment with the perspective of its use. The unbathing part includes not only the areas that present hygienic/sanitary or safety risks, but also military areas, ports, estuaries and areas subject to natural protection.

Bathing areas are defined under the 'Bathing Water Directive' (Directive 2006/7/EC), implemented in Italy by Legislative Decree 116/2008, followed in turn by the implementing decree of 30 March 2010. According to the directive, bathing areas are 'any part of the surface waters in which the authority with jurisdiction expects that a reasonable number of people may bathe and has not issued a permanent prohibition on bathing, nor issued an advisory permanently recommending against bathing'. Marine areas, transitional areas and inland surface waters fall under the definition. Bathing areas are subject to monitoring in order to evaluate the 'presence of microbiological contamination or other contamination by other organisms or waste affecting the bathing water quality and presenting a risk to the health of bathers'[6].

In 2017, the share of waters with bathing areas was 66.9%; this measurement considers the waters that were prohibited for the entire swimming season due to contaminants levels over the threshold for health risks (Figure 14.4).

6 The microbiological parameters researched are, according to the laws in force, intestinal enterococci and Escherichia coli. It also expected the constant observation of other factors relevant to health that, although not examined for classification purposes, can determine preventive measures in the event that values are detected that are considered to pose a health risk.

Figure 14.4 - Coastal bathing waters. Year 2017 (%)



Source: Istat, based on Ministry of Health data

The issue of water quality also arises in Goal 6, focusing on the availability and sustainable management of water and sanitary facilities (see 6.3.2).

In brief

Most fish stocks are in over exploitation. Intensive fishing in the North-East Atlantic (and adjacent areas) and the Mediterranean (Western) geographical area needs to be limited to return to biologically sustainable levels.

In Italy, the surface area of marine protected areas is equal to a total of 3,020.5 km². Three quarters of the protected areas are in Sardegna, Sicilia and Toscana.

The marine areas included in the Natura 2000 network in 2017 are 5,878 square kilometers. The percentage of authorized coastal bathing waters on the total of the coastal line in accordance with the regulations in force was 66.9% in 2017. The share of unbathing coastline includes areas with health and hygiene or safety risks, but also military areas, ports, river mouths and areas subject to natural protection.

SDG Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
14.4.1					
	Fish stock in over exploitation	a		b	c
14.5.1					
	Marine protected areas EUAP	d	e	f	
	Marine areas included in the network Natura 2000			g	
	Coastal bathing waters			h	

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2007-2016
(b) 2012-2016
(c) 2015-2016
(d) 2003-2013
(e) 2003-2010
(f) 2010-2013
(g) 2014-2017
(h) 2013-2017

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[1]

Goal 15 aims at safeguarding terrestrial ecosystems and their biodiversity. This regards not only the conservation of large biosphere reserves and residual natural ecosystems, but the planet as a whole, which is affected in every part by various forms of degradation of the environment. Special emphasis is put on deforestation and desertification: macro-phenomena connected to human activities and climate change, which jeopardize the livelihoods of millions of people, who struggle against poverty in the developing countries. The other key is the loss of biodiversity, to be tackled through policies of environmental conservation and recovery, the promotion of a shared and sustainable use of genetic resources, and the action against the extinction of endangered species.

In the Italian context, progress towards this Goal can be monitored mainly in the fields of environmental protection, land degradation and contrast to biodiversity loss.

Targets

Goal 15 is broken down into 12 Targets.

Two Targets refer to the protection of terrestrial ecosystems, with special regard to forests:

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.

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. One is about the fight against soil degradation and desertification.

One is about the fight against soil degradation and desertification:

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. Another one faces the problems of mountain areas.

1 This section was edited by Luigi Costanzo.

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. Four refer to the degradation of natural environments and the loss of biodiversity, considered under different aspects.

Four refer to the degradation of natural environments and the loss of biodiversity, considered under different aspects:

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.

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.

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. One sets out an ecological approach to the problem of poverty.

One sets out an ecological approach to the problem of poverty:

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

The last three Targets, regarding the means of implementation, concern biodiversity conservation policies, forest management and the fight against the trafficking of protected species:

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.

Indicators released by Istat

Istat releases 15 statistical measures for Goal 15, related to seven SDGs indicators (which refer, on their turn, to six of the 12 Targets, see Table 15.1). Of the 15 measures, six correspond exactly to the description provided by the SDGs metadata (although three of them cover only partially the phenomena to be monitored), other five can be considered proxies of the SDG indicators or covering only, and four are provided as National context indicators.

Table 15.1 - SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 15.1.1 - Forest area as a proportion of total land area		
Forest area as a proportion of total land area (FAO, 2015, %)	Identical	31.6
Forest area index (ISPRA, 2015, %)	National context	36.8
SDG 15.1.2 - Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type		
Average proportion of terrestrial Key Biodiversity Areas (KBAs) covered by protected areas (BirdLife International, IUCN & UNEP-WCMC, 2018, %)	Identical	78.0
Average proportion of freshwater Key Biodiversity Areas (KBAs) covered by protected areas (BirdLife International, IUCN & UNEP-WCMC, 2018, %)	Identical	84.7
Protected natural areas (Istat-MATTM, 2017, %)	National context	21.6
SDG 15.2.1 - Progress towards sustainable forest management		
Forest area net change rate (FAO, 2010-2015, %)	Identical (partial)	0.59
Above-ground biomass in forest (FAO, 2015, t/ha)	Identical (partial)	110.6
Proportion of forest area within legally established protected areas (FAO, 2015, %)	Identical (partial)	35.1
SDG 15.3.1 - Proportion of land that is degraded over total land area		
Soil sealing from artificial land cover (ISPRA, 2017, %)	Proxy	7.7
Fragmentation of natural and agricultural land (ISPRA, 2017, %)	National context	38.3
SDG 15.5.1 - Red List Index		
Number of extant animal species and level of extinction threat - vertebrates, terrestrial (ISPRA-IUCN, 2013, %)	Proxy	30,3
Number of extant animal species and level of extinction threat - invertebrates, terrestrial (ISPRA-IUCN, 2014/15, %)	Proxy	*Lepidoptera* 6.7 *Odonata* 12.4 *Coleoptera* 21.1
SDG 15.7.1 - Proportion of traded wildlife that was poached or illicitly trafficked		
Checks done in application of the CITES [1] (ISPRA-CUTFAA, 2016, no.)	Proxy	67,683
Offenses detected in application of the CITES (ISPRA-CUTFAA, 2016, ‰)	Proxy	4.0
SDG 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, 2017, no.)	National context	618

[1] Convention on International Trade of Endangered Species (1973).

Focus

SDG 15.1.1 - Forest area as a proportion of total land area

Forest areas perform a number of functions essential to the life on land, as suppliers of clean air and water, carbon sinks, and biodiversity reserves[2]. They also play a fundamental role in the mitigation of climate change, the conservation of soil, the protection of coastal zones, and significantly contribute to the livelihood of hundreds of million people, especially in the rural areas of developing countries. All these functions are being threatened by an unsustainable management of the forest resources, which in recent decades underwent, at the global level, a dangerous reduction and deterioration under the pressure of various factors, such as the growing demand for land for farming and livestock, the illegal or uncontrolled trade of forest products, the increase of large-scale wood fires, and the relentless progress of urbanization.

Between 2000 and 2015, according to the FAO estimates, the global coverage of forest areas in the world has been reduced by 1.4%, equal to a net loss of 56 million hectares – over 10 thousand hectares per day[3]. The five-year period 2005-2010 had witnessed a slowdown in deforestation processes, but in the following five years no substantial progress was further observed. What is more, the losses concentrate in regions rich of rainforests, home to the most of terrestrial biodiversity: 53 million hectares in Latin America and the Caribbean (-5.3%) and 45 million in Sub-Saharan Africa (-7%). A significant concentration can be observed also in the subset of least developed countries (LDCs), which appear to be considerably more exposed to the risk of deforestation. On an aggregate level, indeed, substantial improvements are recorded only in the most developed regions of the planet, while in the LDCs the destruction of forests keeps going on at an almost constant rate, and in other developing countries it only slows down in the last five years[4] (Figure 15.1).

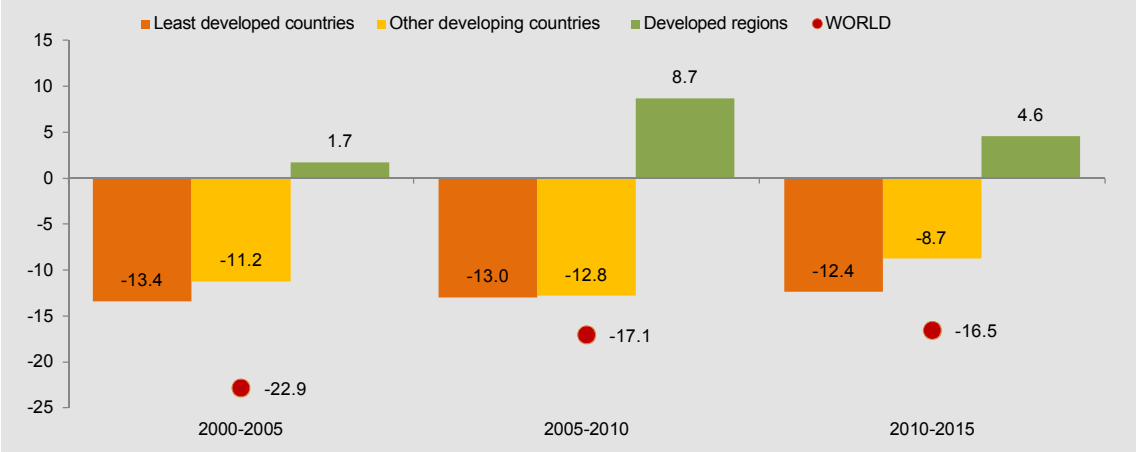
In Italy the forest areas have been growing, in recent years, at a steady and fast rate (Figure 15.2), passing from 8.4 million hectares in 2000 up to 9.3 in 2015, so to reach a 31.6% coverage of the national territory - higher than the World average (30.7%), but lower than the averages of Europe (45.9%) and of the whole of developed countries (37.3%). It must be said, however, that the growth of Italian woods was largely fed, especially in inland areas, by the spontaneous re-naturalization of lands abandoned by farming or pastoral activities – which may have also adverse consequences: on one hand, in fact, such dynamics certainly improve the carbon sequestration from atmosphere, so helping to mitigate the impacts of climate change, but on the other hand they entail the loss and degradation of landscapes and ecosystems of great cultural and environmental value.

2 According to the FAO Report *The State of the World's Forests 2018*, forests currently hold about 75% of the terrestrial biodiversity.

3 Source: FAO, *Global Forest Resources Assessment*. Forest areas (Woods) are defined as: parts of territory with tree coverage greater than 10%, on an extension of at least 0.5 ha, with trees of the minimum height of 5 m at maturity on site.

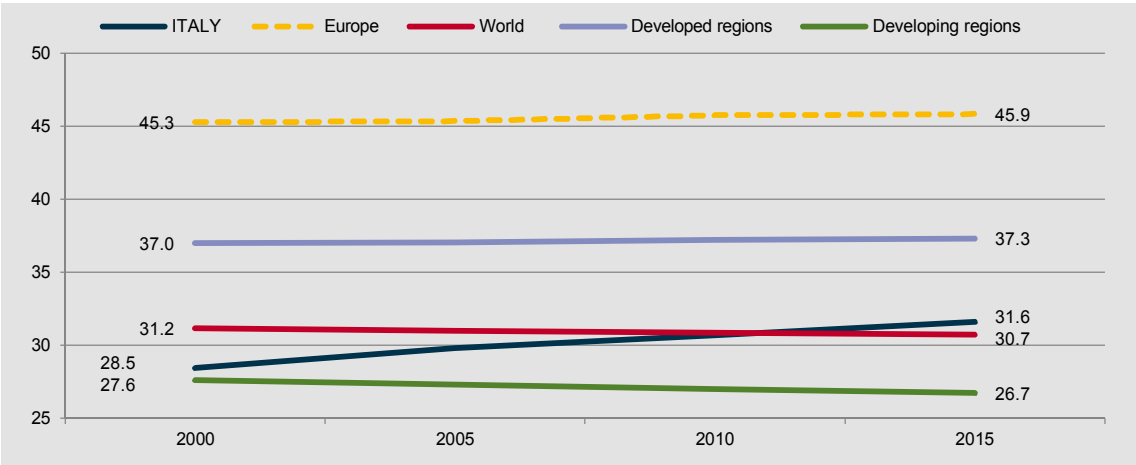
4 According to the classification adopted by the SDG Global Database, *Developed regions* include all Europe, Israel, the United States, Canada, Japan, Australia and New Zealand. The rest of the World belongs to the *Developing regions*, which include the *Least developed countries*.

Figure 15.1 - Forest area coverage over the World by level of development. Years 2000-2015 (absolute variations in million hectares)



Fonte: FAO Global Forest Resources Assessment

Figure 15.2 - Forest area as a proportion of total land area in Italy, Europe and over the World by level of development. Years 2000-2015 (percentage values)



Fonte: FAO Global Forest Resources Assessment

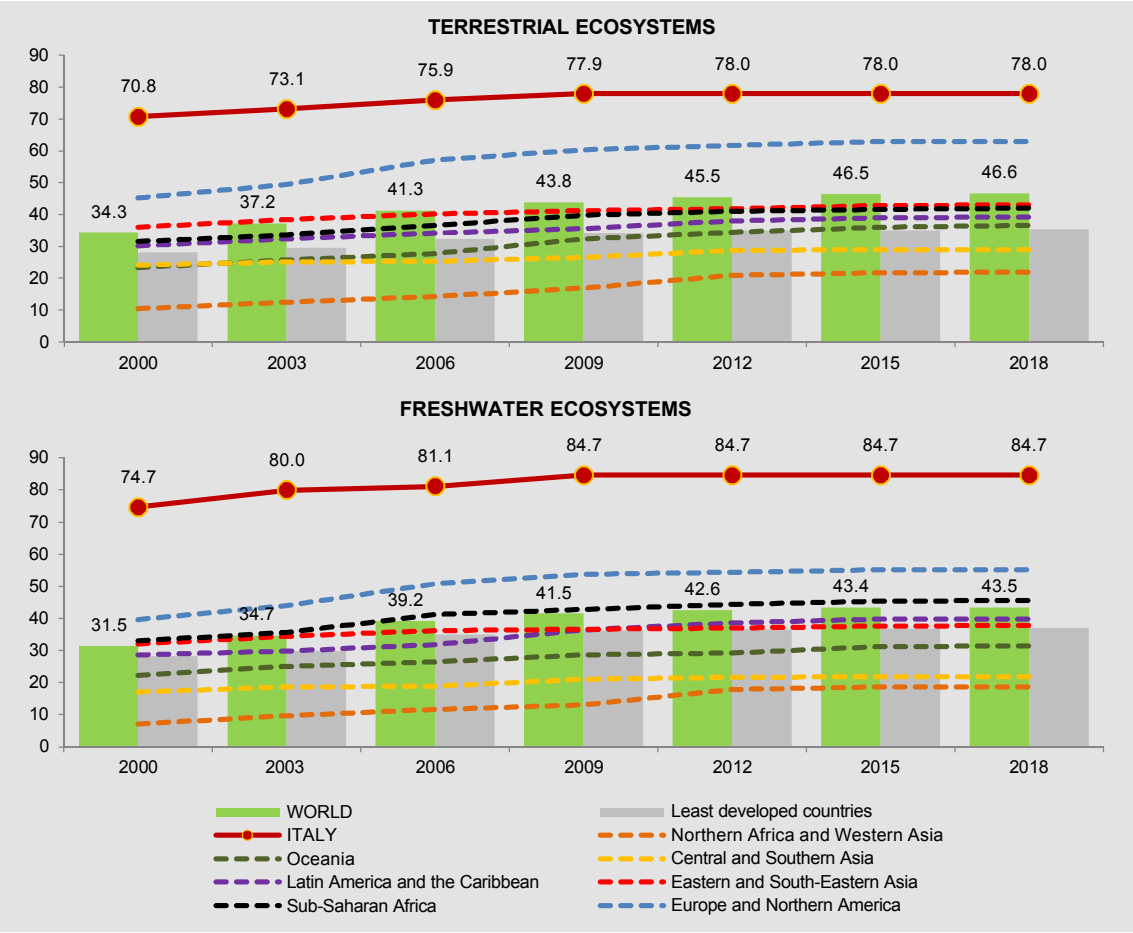
SDG 15.1.2 - Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type

The Key Biodiversity Areas (KBAs) are defined as "sites that contribute significantly to the global persistence of biodiversity, on land, in freshwater or in the seas", whose preservation is deemed vital to ensure a sustainable use of natural resources[5]. This indicator measures to what extent the KBAs identified in terrestrial and freshwater ecosystems are covered by the protected areas established in a country, so allowing to monitor progress towards the

5 IUCN (2016), A Global Standard for the Identification of Key Biodiversity Areas: Version 1.0 (https://portals.iucn.org/library/node/46259). The KBAs are identified by a global network of NGOs, academic institutions and governmental organizations, then classified and registered in the World Database of Key Biodiversity Areas (www.keybiodiversityareas.org).

Goal of total coverage[6]. Over the last 40 years, more than 15,000 KBAs have been identified worldwide, and in 2018, according to the estimates provided by the Protected Planet report, less than half of their surface falls within the perimeter of a protected area: exactly, 46.6% for the terrestrial KBAs and 43.5% for the freshwater ones[7]. However, only 21% of the KBAs benefit from a full coverage, while an additional 35% don't have any coverage. After the remarkable progress of the 2000s, the coverage rates, even continuing to grow, have been slowing down in recent years. While in the 2000-2009 period the coverage had increased by about 10 percentage points, both for terrestrial and freshwater ecosystems, in the following decade (2009-2018) the coverage increased only by 2.8 points for the terrestrial sites, and by 1.9 points for the freshwater ones. Also in this case, the most critical situations are found in the LDCs, where the coverage rates are 35.5% (terrestrial) and 37% (freshwater), while in Europe and North America they exceed, respectively, 60 and 55% (Figure 15.3).

Figure 15.3 - Mean coverage of the Key Biodiversity Areas by protected areas in terrestrial and freshwater ecosystems, in Italy, over the World and in the Least developed countries. Years 2000-2018 (percentage values)



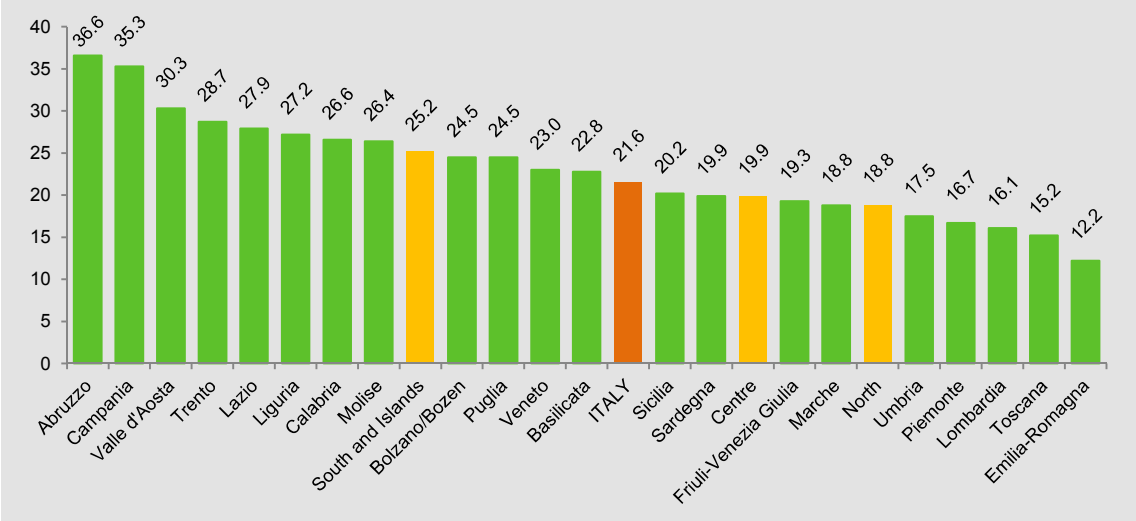
Source: BirdLife International, IUCN and UNEP-WCMC

6 The indicator is calculated as the mean value of the coverage rates of the KBAs registered in a given country. Estimates are based on the spatial overlap of the KBA polygons (from the World Database of Key Biodiversity Areas) and the polygons of protected areas (from the World Database on Protected Areas: www.protectedplanet.net).

7 UNEP-WCMC, IUCN, NGS (2018). *Protected Planet Report 2018*. Data referred to July 2018 for the whole of the KBAs, including the marine ones (https://livereport.protectedplanet.net/pdf/Protected_Planet_Report_2018.pdf).

The situation in Italy is even better, with a mean coverage of 78% for the terrestrial KBAs (stable since 2012) and 84.7% for the freshwater ones (stable since 2009). The Italian system of protected areas has therefore achieved a good level of coverage of the KBAs, and covers 21.6% of the entire national territory (25.2% in the South and Islands, with a maximum of 36.6% in Abruzzo, 18.8% in the North and 19.9% in the Centre – Figure 15.4).

Figure 15.4 - Territorial coverage of terrestrial protected areas in Italy, by region and geographical area. Year 2017
(percentage values)



Source: Istat, based on Ministry of environment data

SDG 15.2.1 - Progress towards sustainable forest management

Sustainable forest management is a central element of the Goal 15, which does not identify with a particular model or catalog of good practices, but is defined on the basis of a set of outcome indicators, meant to assess whether, and to what extent, the current management of forest heritage contributes "to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations"[8]. The environmental dimensions of sustainability refer, in particular, to the measures commented below, which focus on the growth of forest areas, their consistency in terms of biomass and the protection of their biological diversity[9].

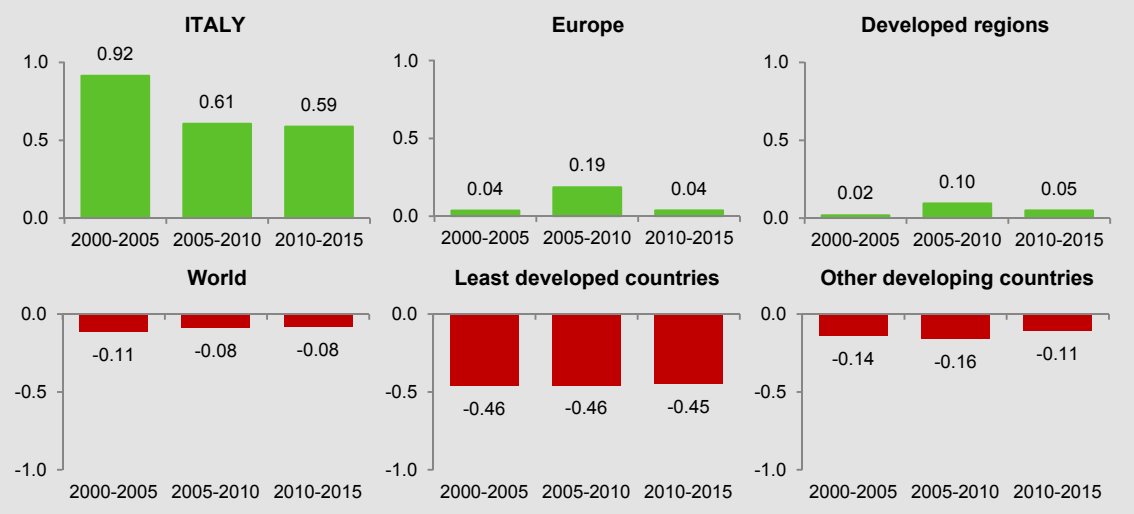
Clearly, the dynamics of forest areas is a crucial aspect to assess the sustainability of their management, and has already been considered for the Target 15.1. To that end, however, it is important to know not only the direction of change, but also to monitor the speed of changes – in order to see, for example, whether, even in the presence of net losses in forest

8 UN General Assembly, Resolution A/RES/62/98 - *Non-legally binding instrument on all types of forests* (1997).

9 The indicator of *Progress towards sustainable forest management* is composed by a dashboard of five measures: *Forest area net change rate, Above-ground biomass in forest, Proportion of forest area within legally established protected areas, Proportion of forest area with a long-term management plan,* and *Forest area certified under an independently verified certification scheme*. The first three refer to the environmental dimension of sustainability, while the last two – not commented here for lack of complete or updated information – refer to the socio-economic dimension.

area, the policies implemented have managed to slow down the run of deforestation, and are therefore going in the right direction. In Italy, between 2005 and 2015, forest areas grew at a steady rate of 0.6% a year, lower than in the previous five-year period, but higher than in the rest of Europe, and in the whole of Developed regions. At the global level, deforestation has slowed slightly in the second half of the 2000s, but since then it has been progressing steadily (-0.08% a year), hitting especially the LDCs, as already seen (Figure 15.5).

Figure 15.5 - Average annual growth rates of forest areas in Italy, Europe and over the World by level of development. Years 2000-2015 (percentage values)

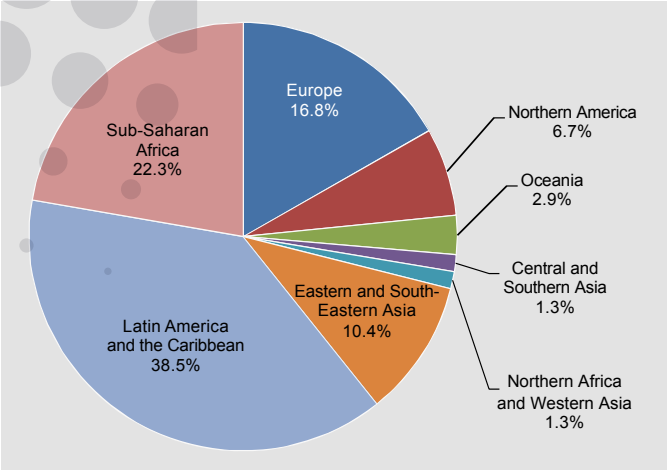


Source: FAO, Global Forest Resources Assessment

The changes in the above-ground biomass stock allow to evaluate the balance, in the dynamics of forest areas, between the gains (due to the growth and densification of tree coverage) and the losses (natural or due to cuts, fires, pests and diseases). Broadly speaking – and for sufficiently large territorial units – the sustainable management of forest resources should result, according to the approach proposed by this indicator, in a stable or growing stock of biomass (both in absolute quantity and per hectare), while a reduction of it is to be considered a symptom of degradation or decline of the productive capacity of forests and, therefore, of their ecosystem functionality. In 2015, around three-quarters of the biomass reserves concentrated in the richest regions in rainforests: 38.5% in Latin America and the Caribbean, 22.3% in Sub-Saharan Africa, 10.4% in Eastern and South-Eastern Asia, and 2.9% in Oceania (Figure 15.6). Oceania has the largest amount of biomass per hectare: 272 tons, compared to 192 of Latin America and the Caribbean and 169 of Sub-Saharan Africa. The World average is 128 tons per hectare, while the amount of living biomass in Italian forests is estimated at 111 t/ha – a value that is been growing continuously since 2000, when the estimate was 95 t/ha (Figure 15.7). Globally, the variability of this indicator over time is far more limited: the World average remained nearly unchanged between 2000 and 2015, and significant losses were recorded only in Central and Southern Asia (-6.7%), as well as in Eastern and South-Eastern Asia (-2.8%).

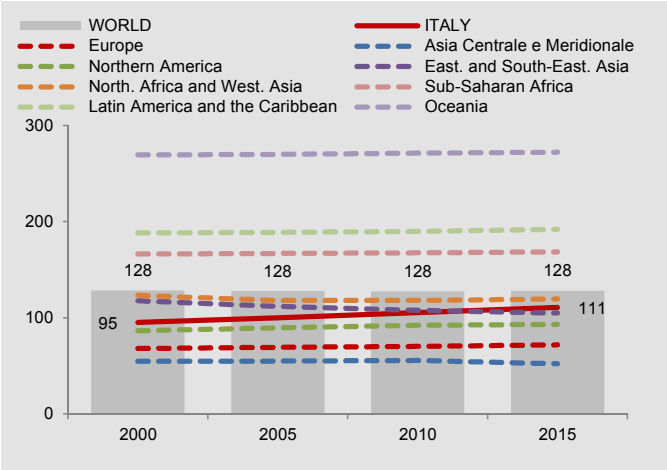
By plotting on a Cartesian diagram the variations of biomass in the period 2000-2015, both in absolute quantity (stock) and per hectare (density), Europe, Northern America and Oceania locate in the first quadrant (increases in stock and density), whereas the regions of Northern Africa and Western Asia, and Eastern and South-Eastern Asia, where the

Figure 15.6 - Distribution of the above-ground biomass in forest over the World. Year 2015 (percentage composition)



Source: FAO, Global Forest Resources Assessment

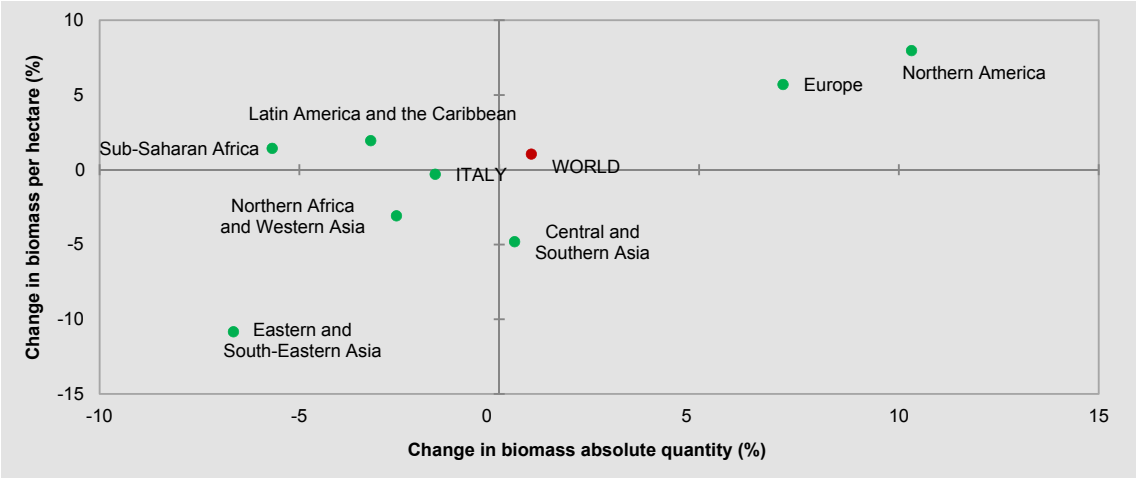
Figure 15.7 - Above-ground biomass in forest in Italy and over the World. Years 2000-2015 (tons per hectare)



Source: FAO, Global Forest Resources Assessment

most critical trends are observed, locate in the opposite quadrant (decreases of stock and density). The largest holders of forest biomass – Latin America and the Caribbean, and Sub-Saharan Africa – locate in the second quadrant: here, like in Oceania, there are moderate increases in the biomass per hectare, but combined with heavy losses of biomass stock. This suggests that deforestation, in these regions, hits preferably the forest areas less rich in biomass (probably less protected or just more accessible), thus causing an increase in the final density of the above-ground biomass (Figure 15.8).

Figure 15.8 - Above-ground biomass in forest over the World, in absolute quantity and per hectare. Years 2000-2015 (percentage changes)

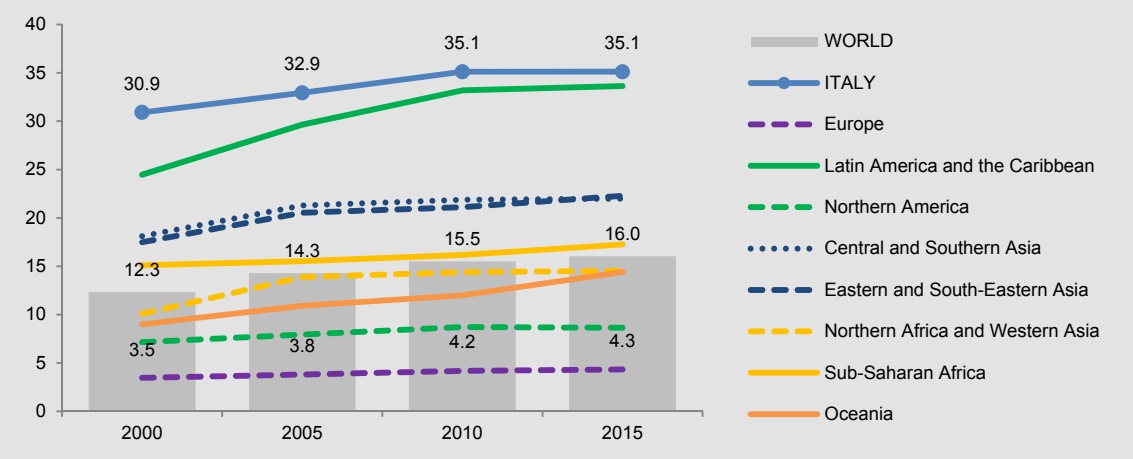


Source: Istat, based on FAO data

In 2015, it is estimated that the system of protected areas was covering 35.1% of the Italian forest areas – about 4 points percent more than in 2000. Also at the global level, the proportion of forest area within established protected areas is on the rise: from 12.3 to 16%, from 2000 to 2015. Among the world regions, the highest coverage, and the most significant progress, can be seen in Latin America and the Caribbean (from 24.5 to 33.6%).

Important advancements were also recorded in Oceania (from 9 to 14.4%), Eastern and South-Eastern Asia (from 17.5 to 22.3%), Northern Africa and Western Asia (from 10.1 to 14.5%), Central and Southern Asia (from 18.1 to 22%); while in Europe and Northern America the coverage levels are lower (4.3 and 8.6%, respectively), and advancing at a slower pace (Figure 15.9).

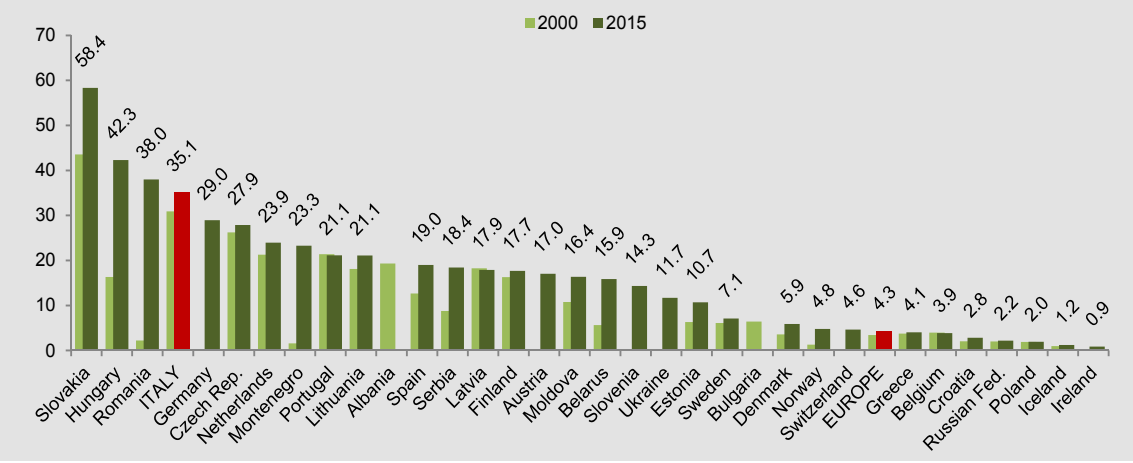
Figure 15.9 - Proportion of forest area within legally established protected areas in Italy and over the World. Years 2000-2015 (percentage values)



Source: FAO Global Forest Resources Assessment

In the European context, Italy ranks among the countries with the highest proportions of protected forests, surpassed only by Romania, Hungary and Slovakia. Compared to 2000, the most significant progress in this field has been made in these three countries plus Montenegro. In particular, Romania and Montenegro passed from about a 2% coverage to 38 and 23.3% respectively, Hungary from 16.3 to 42.3%, and Slovakia, whose coverage rate was already high in 2000, from 43.6 to 58.4% (Fig. 15.10).

Figure 15.10 - Proportion of forest area within legally established protected areas in European countries*. Years 2000 and 2015 (percentage values)



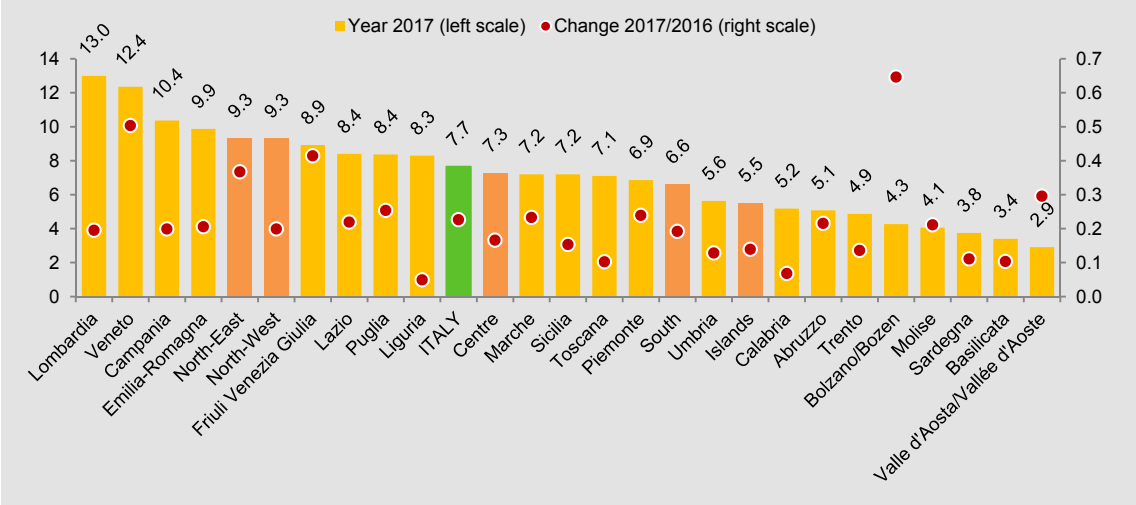
Source: FAO, Global Forest Resources Assessment
* Estimates not available for France, Kosovo, North Macedonia and the United Kingdom (both years); Austria, Germany, Ireland, Slovenia, Switzerland and Ukraine (year 2000); Albania and Bulgaria (year 2015).

Other indicators

SDG 15.3.1 - Proportion of land that is degraded over total land area

The indicator of Soil sealing from artificial land cover measures the proportion of land area that is occupied by buildings and infrastructures, which seal the soil making it ecologically inert and unproductive: from this point of view, it is a measure of land consumption generated by urbanization, and of the pressure on environment deriving from it[10]. According to ISPRA estimates, 52.1 sq.km of soil were sealed in Italy during 2017 (about 14 hectares per day), so bringing the total amount of the sealed surfaces to 7.65% of the national territory (and over 10% in Lombardia, Veneto and Campania - Fig. 15.11). Veneto and Lombardia are also the regions that have consumed most land in 2017 (about one third of the total). In relative terms, however, the most substantial increases in 2017 concentrated in the North-East area: +0.6% in the province of Bolzano (from 31.4 to 31.6 sq.km of sealed soil), +0.5% in Veneto (from 225.4 to 226.5 sq.km) and +0.4% in Friuli-Venezia Giulia (from 70.3 to 70.6 sq.km).

Figure 15.11 - Soil sealing from artificial land cover in Italy by region and geographical area. Year 2017 and change over the previous year (percentage values)



Source: ISPRA, Monitoraggio del consumo del suolo e del *soil sealing*

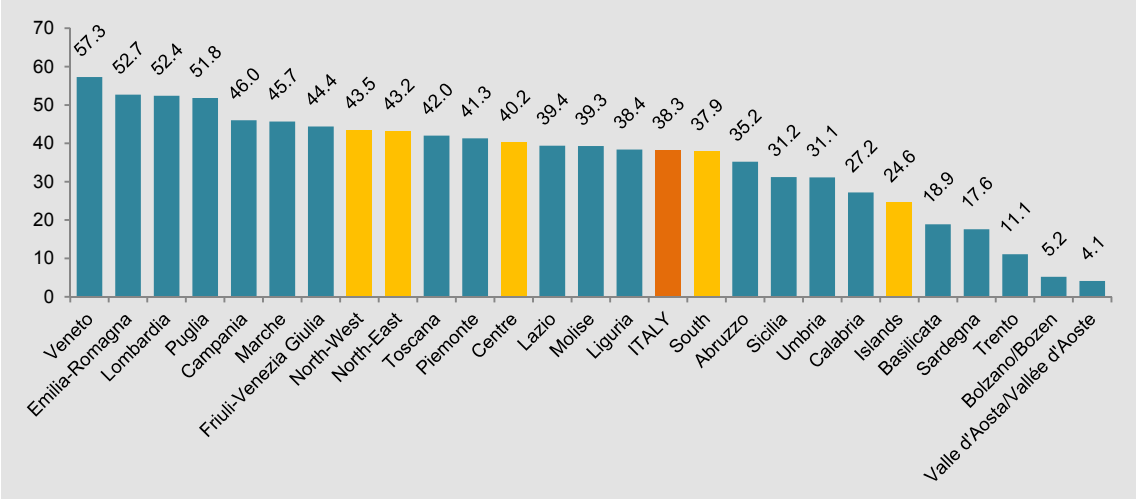
The urbanization processes interfere with the ecological functionality of land not only through the physical occupation of surface, but also through the fragmentation of the open spaces and the habitats they support, which is caused by the proliferation of material barriers such as buildings, infrastructures or other artificial elements that interrupt their continuity. The splitting of larger agricultural or natural areas into smaller and separate parts is an important factor of environmental degradation, as it hinders or prevents the connections

10 This indicator is calculated by ISPRA, based on the data elaborated by the SNPA monitoring network from satellite imagery (Programme Copernicus of the EU). The pressures on environment that are generated by land consumption can be paralleled to those generated by other forms of consumption of non-renewable resources, and consist in a loss of soil's productive capacity (food products and vegetal biomass in general), and a loss of soil's ecological functionality (regulation of climate, water, and cycles of elements essential to life, like phosphorus and nitrogen). In addition, land consumption is often connected to hydro-geological risk and deterioration of urban and rural landscapes.

that are necessary for the vitality of ecosystems and the conservation of biodiversity. The indicator proposed to describe the fragmentation of natural and agricultural land is the proportion of land that is classified as having a high or very high degree of fragmentation, based on a measure of density derived from the analysis of land cover: the number of particles not discontinued by artificial elements ("barriers") per territorial unit (Effective mesh density)[11].

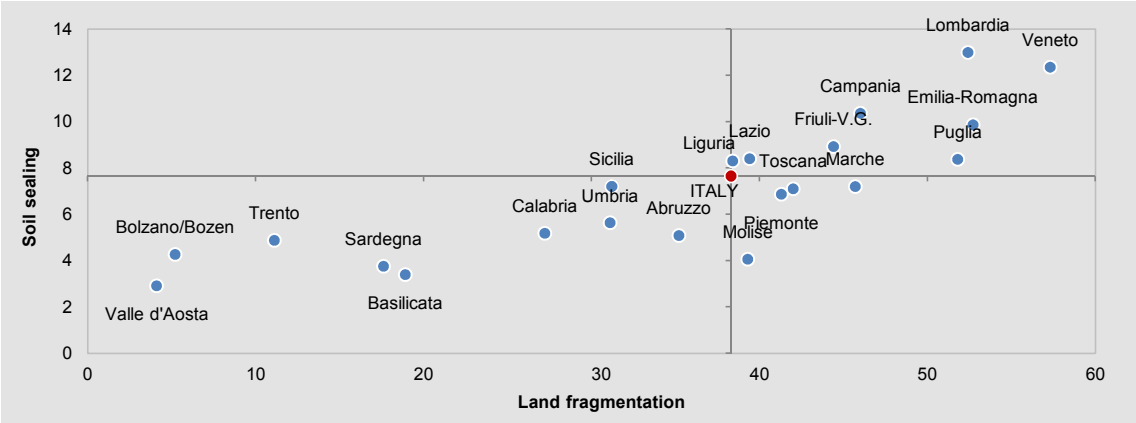
According to this indicator, 38.3% of the national territory showed a high or very high degree of fragmentation in 2017 (Figure 15.12). Of course, fragmentation and soil sealing are in close connection, because higher levels of artificial coverage tend to correspond to higher degrees of fragmentation (Figure 15.13). Compared to the measure of soil sealing,

Figure 15.12 - Fragmentation of natural and agricultural land* in Italy by region and geographical area. Year 2017 (percentage values)



Source: ISPRA, Monitoraggio del consumo del suolo e del *soil sealing*
* Percentage of land classified at high/very high fragmentation (see note 18).

Figure 15.13 - Land fragmentation and soil sealing in Italy by region. Year 2017 (percentage values)



Source: ISPRA, Monitoraggio del consumo del suolo e del *soil sealing*

11 Like the previous one, also this indicator is calculated by ISPRA on the basis of the Copernicus imagery. The average particle size is calculated using the Effective mesh size method, as described in Jaeger (2000), *Landscape division, splitting index, and effective mesh size: new measures of landscape fragmentation*. "Landscape Ecology", n. 15.

however, the measure of fragmentation helps to better understand the real amplitude of the phenomenon, showing how the impact of land consumption on environment and landscape goes far beyond the physical occupation of land surfaces, as it involves areas much wider than the paved or built-up ones. The most intensely fragmented territories are concentrated in the Northern plains, especially in Veneto (57.3%), Emilia-Romagna (52.7%) and Lombardia (52.4%), but also Puglia, in the South, is concerned for over 50% of its territory, and values below 20% are found only in four regions (Valle d'Aosta, Trentino-Alto Adige, Basilicata and Sardegna).

SDG 15.5.1 - Red List Index

Due to the variety of its natural environments and the presence of several endemic species, Italy is among the richest countries in biodiversity in Europe. Such a resource, however, is also most exposed to the threats deriving from anthropic pressures. The level of threat to biodiversity can be measured by the proportion of endangered species[12]. According to the Red List of Italian Vertebrates (2013), out of 475 species of terrestrial vertebrates, six are already locally extinct and another 138 are threatened (of which 17 considered to be "critically endangered", 42 just "endangered" and 79 "vulnerable"), while other 27 species were not evaluated for deficient data and 101 for inapplicability of the criteria[13]. On this basis, it can be estimated that, among terrestrial vertebrates, the incidence of threatened species is 31.2%[14]. Similarly, according to the Red Lists available for some categories of invertebrates (2014-2016), the proportion of endangered species is 6.3% for *Lepidoptera* (butterflies), 11.4% for *Odonata* (dragonflies) and 21.1% for *Coleoptera* (beetles)[15]. Although several factors limit the ability to effectively synthesize an overall trend in biodiversity deterioration, the threat levels detected – especially for terrestrial vertebrates – are a reason of serious concern for the conservation of wildlife diversity in our country.

SDG 15.7.1 - Proportion of traded wildlife that was poached or illicitly trafficked

The Convention on International Trade in Endangered Species (CITES), signed in 1973 and in force in Italy since 1980, aims to prevent the commercial exploitation of endangered

12 According to the criterion adopted by the International Union for the Conservation of Nature (IUCN) to draw up the Red List of Threatened Species, the species are divided into six classes: Extinct in the region (RE), Critically endangered (CR), Endangered (EN), Vulnerable (VU), Nearly threatened (NT) and Lesser concern (LC). Two further classes gather the species with Deficient data (DD) and those to which the classification criteria are not applicable (NA). The species classified as CR, EN and VU are considered threatened to a different extent, and their proportion to the total of the extant (and assessed) species measures the level of the threat to biodiversity.

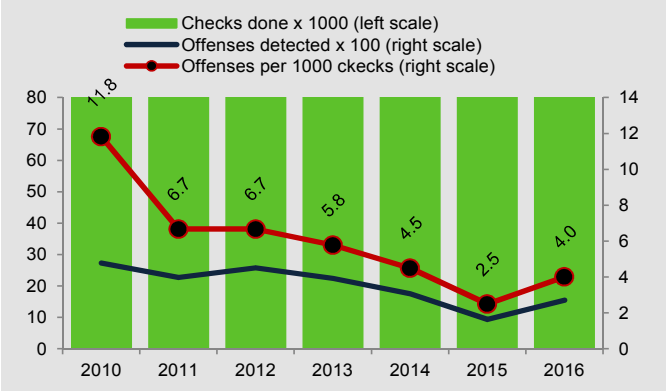
13 Ministero dell'ambiente e della tutela del territorio e del mare, Federparchi, IUCN-Comitato italiano (2013), *Lista Rossa dei Vertebrati Italiani*: http://www.iucn.it/pdf/Comitato_IUCN_Lista_Rossa_dei_vertebrati_italiani.pdf.

14 "Best estimate" obtained by dividing the sum of the classes CR, EN and VU by the total of the species evaluated, minus the classes RE and DD. This value is between a lower estimate of 29.4% (assuming that none of the DD species is threatened) and an upper estimate of 35.2% (assuming that all DD species are threatened). In any event, the species for which the evaluation criteria are not applicable (class NA) are not taken into account. For further details about the calculation of estimates, see http://www.iucnredlist.org/about/summary-statistics#Tables_5_6.

15 Ministero dell'ambiente e della tutela del territorio e del mare, Federparchi, IUCN-Comitato italiano (2014), *Lista Rossa delle Libellule Italiane*: http://www.iucn.it/pdf/Comitato_IUCN_Lista_Rossa_delle_libellule_italiane_2014.pdf; Idem (2014), *Lista Rossa dei Coleotteri Saproxilici Italiani*: http://www.iucn.it/pdf/Comitato_IUCN_Lista_Rossa_dei_coleotteri_saproxilici_italiani_2014.pdf; Idem (2016), *Lista Rossa delle Farfalle Italiane - Ropaloceri*: http://www.iucn.it/pdf/Comitato_IUCN_Lista_Rossa_delle_farfalle_italiane_2016.pdf.

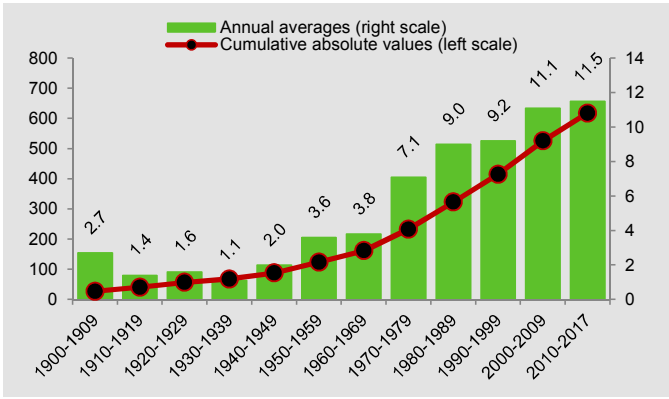
species of animal and plant species, which is one of the main threats to their survival. During 2016, approximately 67,700 custom checks were carried out in Italy in application of the CITES, which led to the detection of 272 offenses (about 4 per thousand checks). The number of checks was slightly higher than in the previous year (+2.9%) but, for the first time in recent years, a worrying increase is observed in the offenses detected per check (Figure 15.14).

Figure 15.14 - Checks done and offenses detected in application of the CITES* in Italy. Years 2010-2016 (thousands of checks, hundreds of offenses and offenses per thousand checks)



Source: ISPRA, based on CFS data (2010-2015) and CUTFAA data (2016-2017)
* Convention on International Trade of Endangered Species.

Figure 15.15 - Alien species reported in Italy by period of reporting*. Years 1900-2017 (cumulative absolute values and annual average values)



Source: ISPRA, Banca dati delle specie alloctone
* Only species with known year or period of introduction.

SDG 15.8.1 - Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species

The spread of alien invasive animal and plant species is one of the main causes of biodiversity loss, as it can lead to the extinction of native species, alter the balance of the ecosystems in which they settle and lead to their degradation, or even have impacts on public health, as a vehicle for transmitting allergies or diseases to humans and other living organisms[16]. The introduction of alien species in our country (not all invasive) is monitored by ISPRA, which provides information about the current count of alien species detected in Italy and its trend over the last century. The time series, revised in 2018, show that the number of alien species is progressively increasing. Based on the last available data, the species introduced from 1900 onwards (and still present) are 618, of which about one third were introduced after 2000, at the rate of 11.3 new species per year (11.1 in the period 2000-2009, 11.5 in the period 2010-2017 – Figure 15.15). The series refer only to the species for which the period of introduction is known (just over 50% of the total) and show, especially from the second half of the 20th Century, a progressive acceleration, in connection with the development of international trade, transports and tourism – showing no sign of decline. In February 2018, with the entry into force of the Legislative Decree

16 According to the Convention on Biological Diversity (CBD) of 1992 "alien" means "a species, subspecies or taxonomic group of lower hierarchical level introduced (due to the action of man, intentional or accidental) outside of its past or present natural distribution, including any part of the species, gametes, seeds, eggs or propagules that could survive and consequently reproduce". "Invasive alien species" means "an alien species whose introduction and/or spreading threatens biodiversity".

no. 230/2017 (implementing the EU Regulation no. 1143/2014), Italy has adopted specific rules on the prevention and reduction of the impacts resulting from the spread of invasive alien species – so to achieve the Target 15.8.

In brief

31.6% of the national territory is covered by woods, whose extension has increased by 0.6% a year from 2000 to 2015, as well as their density in terms of above-ground biomass (from 95 to 111 tons per hectare). The growth and densification of forest areas improves the carbon sequestration, but it is largely an uncontrolled process, fueled by the abandonment and degradation of inland's rural landscapes.

The system of protected natural areas covers about 80% of the terrestrial Key Biodiversity Areas, 35.1% of forest areas and 21.6% of the entire national territory.

Land consumption keeps advancing (14 hectares per day in 2017). **7.65% of the national territory is covered by artificially sealed surfaces, but almost 40% shows a high level of fragmentation**, due to the proliferation of physical barriers created by urbanization.

The presence of invasive alien species is rapidly growing: on average, more than 11 new species were introduced in Italy each year from 2000 to 2017.

Unlike the number of custom checks carried out to tackle the illicit trafficking of protected species, the violations detected are on the rise (from 2.5 to 4 per 1,000 checks, from 2015 to 2016).

S D G Ref.	INDICATORS	VARIATION			
		long term	medium term		short term
		2007-2017	2007-2012	2012-2017	2016-2017
15.1.1					
	Forest area as a proportion of total land area	a	b	c	
	Forest area index	a	b	c	
15.1.2					
	Average proportion of terrestrial Key Biodiversity Areas (KBAs) covered by protected areas				
	Average proportion of freshwater Key Biodiversity Areas (KBAs) covered by protected areas				
	Protected natural areas			d	
15.2.1					
	Forest area net change rate	a	b	c	
	Above-ground biomass in forest	a	b	c	
	Proportion of forest area within legally established protected areas	a	b	c	
15.3.1					
	Soil sealing from artificial land cover				
15.7.1					
	Checks done in application of the CITES			e	f
	Offenses detected in application of the CITES			e	f
15.8.1					
	Spreading of alien animal and vegetal species	g	h	i	

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2005-2015
(b) 2005-2010
(c) 2010-2015
(d) 2013-2017
(e) 2011-2016
(f) 2015-2016
(g) Variation between average values 1990-1999 and 2010-2017
(h) Variation between average values 1990-1999 and 2000-2009
(i) Variation between average values 2000-2009 and 2000-2017

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[1]

Goal 16 is dedicated to promoting peaceful and inclusive societies, ensuring universal access to justice and the creation of responsible and effective institutions. For the monitoring of the objective are considered different measures that, overall, give account of the level of security, justice, participation and freedom of the country. A first dimension concerns the impact on the population of different types of crime against the person, such as homicides or other forms of physical, sexual or psychological violence, with particular attention to the most vulnerable groups of people. In addition to the number of reports submitted to the competent bodies, the evaluation of the number of crimes is integrated with the estimate of the component of such phenomena not inferable from the reports, but measurable through direct statistical surveys on the population. Safety perceived by the citizens, however, is the result of various aspects and is correlated to the degree of trust placed in the police forces and law enforcement, with respect to their capacity to control the territory. The level of corruption reflects the overall quality of the country, its institutions and services to the population. The number of detainees awaiting trial and the length of civil proceedings are indicators of the level of efficiency and effectiveness of the judicial system, while that of the institutional system is assessed through data on citizens' satisfaction with their experience in dealing with public offices. The dimensions of justice, responsibility and inclusiveness, fundamental freedoms (such as freedom of the press, discrimination and respect for human rights), the presence of illicit financial trafficking and arms trafficking complete the picture. The framework is completed by the dimensions of justice, responsibility and inclusiveness, the themes of fundamental freedoms (such as freedom of the press, discrimination and respect for human rights, illicit financial trafficking and weapons trafficking.

1 This section was edited by Giovanna Tagliacozzo, with contributions from Maria Giuseppina Muratore and Franco Turetta.

Targets

Goal 16 is broken down into twelve Targets, the last two refer to means of implementation:

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.

Indicators released by Istat

Istat releases fourteenth statistical measures for Goal 16, referring to six of the twelve Targets.

Table 16.1 - List of SDGs indicators and indicators released by Istat

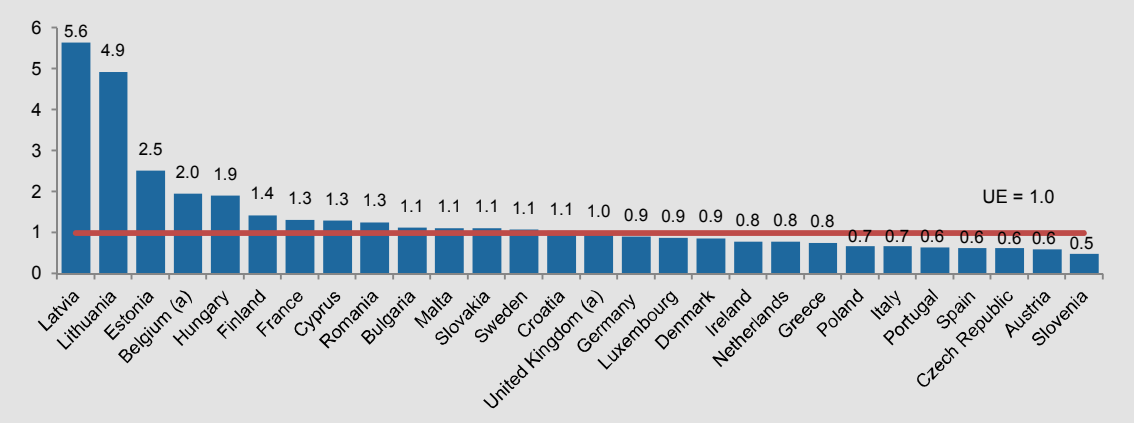
Indicators	Relation with SDG indicator	Last available value
SDG 16.1.1 - Number of victims of intentional homicide per 100,000 population by sex and age		
Number of victims of intentional homicide (Ministry of Interior, 2017, per 100,000 population)	Identical	0.6
SDG 16.1.3 - Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months		
Proportion of persons aged 14 old and victims of physical assault in the last 12 months previous the survey (Istat, 2015/16, %)	Partial	1.2
Proportion of persons aged 14 old and victims of physical assault and robbery in the last 12 months previous the survey (Istat, 2015/16, %)	Partial	1.4
SDG 16.1.4 - Proportion of population that feel safe walking alone around the area they live		
People aged 14 and over feeling unsafe when walking alone in the dark in the area where they live (Istat, 2016, %)	Identical	60.6
SDG 16.2.3 - Proportion of young women and men aged 18-29 years who experienced sexual violence by age 18		
Proportion of persons aged 18-29 years who experienced sexual violence by age 18 (Istat, 2015/16, %)	Proxy	Female 4.1 Male 0.7
SDG 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 rate of victims of physical assault for population aged 14-65 years old (Istat, 2015/16, %)	Partial	27.0
SDG 16.3.2 – Unsentenced detainees as a proportion of overall prison population		
Unsentenced adult detainees as a proportion of overall prison population (Ministry of Justice, 2018, %)	Identical	16.5
Juveniles unsentenced detainees as a proportion of overall prison population (Ministry of Justice, 2018, %)	Identical	70.5
SDG 16.5.1 - Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months		
Households where at least one component has received requests for money, gifts or favours in exchange of favours or services lifetime (Istat, 2015/16, %)	Proxy	7.9
Households where at least one component has received requests for money, gifts or favours in exchange of favours or services, in the last 3 years (Istat, 2015/16, %)	Proxy	2.7
Households where at least one component has received requests for money, gifts or favours in exchange of favours or services, , in the last 12 month (Istat, 2015/16, %)	Proxy	1.2
SDG 16.6.2 - Proportion of population satisfied with their last experience of public services		
Trust in judicial system (expressed by people aged 14 and over) (Istat, 2018, Score)	Partial	4.4
Trust in other institutions (average score of trust in the police and the fire brigade expressed by people aged 14 and over) (Istat, 2018, Score)	Partial	7.3
Percentage of households who find very difficult to reach some basic services (Istat, 2016-2018, %)	Partial	7.3
Effective average duration in days of civil proceedings (Dipartimento dell'organizzazione giudiziaria, del personale e dei servizi - Direzione Generale di Statistica e Analisi Organizzativa, 2018, number of days)	National context	429
SDG 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		
Youth and political representation in Parliament (Istat, Elaborazione su dati della Camera dei Deputati e del Senato della Repubblica, 2018, %)	Identical	42.2
Women and political representation in Parliament (Istat, Elaborazione su dati della Camera dei Deputati e del Senato della Repubblica, 2018, %)	Identical	35.4

Focus

SDG 16.1.1 - Number of victims of intentional homicide per 100,000 population, by sex and age

In 2016, 0.7 murders per hundred thousand inhabitants were committed in Italy, a value lower than the average value of the European Union (1.0). Among the 28 EU member states, more favourable situations than in Italy, were found only in Portugal, Spain, the Czech Republic and Austria with an incidence of 0.6, Slovenia with 0.5 murders per hundred thousand inhabitants. The countries with the highest values of voluntary homicides are, instead, the Baltic ones, in particular Latvia and Lithuania, with 5.6 and 4.9 homicides per hundred thousand inhabitants respectively (Figure 16.1).

Figure 16.1 - Victims of intentional homicide in the EU countries. Year 2016 (per 100,000 population)



Source: Eurostat
(a) Year 2015.

In Italy, after the peak reached at the beginning of the 90's (3.38 murders per hundred thousand inhabitants, on the rise compared to 2.16 in 1983), the rate of murders has significantly reduced, below the unit since the year 2000.

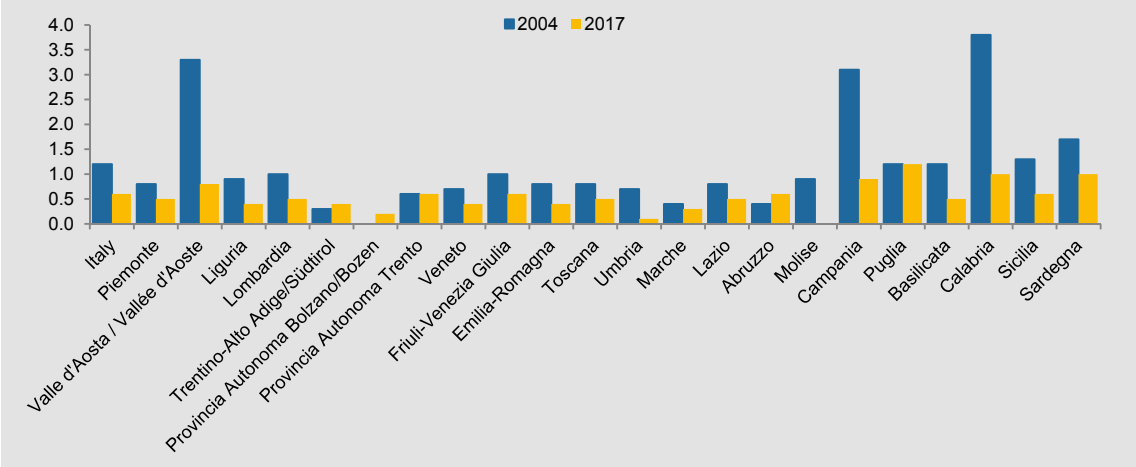
The sharp fall in the number of murders (of men) in recent decades is also attributable to the reduction in those carried out by organised crime (12.6% in 2017; 9.1% in the period 2013-2017 and 33.1% between 1988 and 1992).

The number of women killed remains lower than men, but the decrease over the years has been very limited compared to that observed for males. In 2017, 357 people were killed, 234 men and 123 women, equal to 0.6 murders per 100 thousand inhabitants (0.8 for men and 0.4 for women).

The murders of men occur mainly in the South and Islands area, while for the murders of women there is no prevailing geographical location. In 32.1% of cases men were killed by a person they did not know; 80.5% of women are, instead, killed by a person they know: in almost half of cases (43.9%) it is a partner (35.8% current, 8.1% previous), in 28.5% a relative (including children and parents) and in 8.1% another person they knew[2].

2 Statistiche Report. Le vittime di omicidio. Reference period 2017. Publication date 15 November 2018. https://www.istat.it/it/files/2018/11/Report_Vittime-omicidi.pdf.

Figure 16.2 - Homicide rate by region. Years 2004-2017 (per 100,000 population)



Source: Ministry of the Interior

Other indicators

SDG 16.3.2 - Unsentenced detainees as a proportion of overall prison population

As at 31 December 2018, 59,655 people over 18 years of age were detained in Italian prisons, 57,079 of them were men and 2,576 women. 9,860 inmates awaiting first trial, i.e. 16.5%. At a regional level there were considerable differences, determined not only by the level of efficiency of the judicial system, but also by the type and seriousness of the crime committed. The share of prisoners awaiting trial was prevalent among the youngest, in particular 18-20 year olds (44.5%) and was higher for foreigners (19%), compared to Italians (15.2%)[3], while there were no significant differences between men and women. Compared to 2010, the figure is decreasing in almost all regions (Figure 16.3).

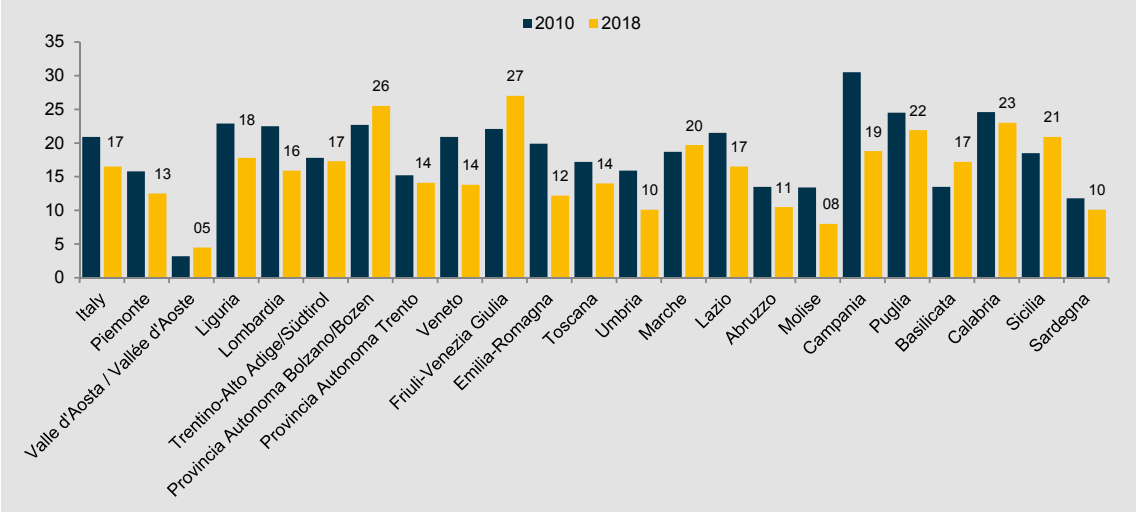
For juveniles, the use of detention as a response to deviance is seen as an extremely residual measure. Juvenile services, within the framework of the criminal competence of the Juvenile Judicial Authority, contribute to the promotion and protection of the rights of young people[4]. Only for a very limited part of the minors, who enter the criminal circuit for violations committed, a restrictive measure of freedom in the residential structures of the justice system is established: in the year 2017 there were 1,430 minors or young adults (about 70% hosted in the community, the remaining 30% detained in the penal institutions for minors); of these, 1,008 awaiting their first judgement[5] (Figure 16.4).

3 I detenuti nelle carceri italiane. Reference period 2013. Publication date 19 March 2015. https://www.istat.it/it/files/2015/03/detenuti-2015-1.pdf?title=Detenuti+nelle+carceri+italiane+-+19%2Fmar%2F2015+-+Testo+integrale.pdf

4 Their task does not end at the age of 18 but extends to "young adults", i.e. those who have reached the age of majority, but were still minors at the time of the crime. Recently, in the year 2014, the maximum age threshold for "young adults" was raised from 21 to 25 years.

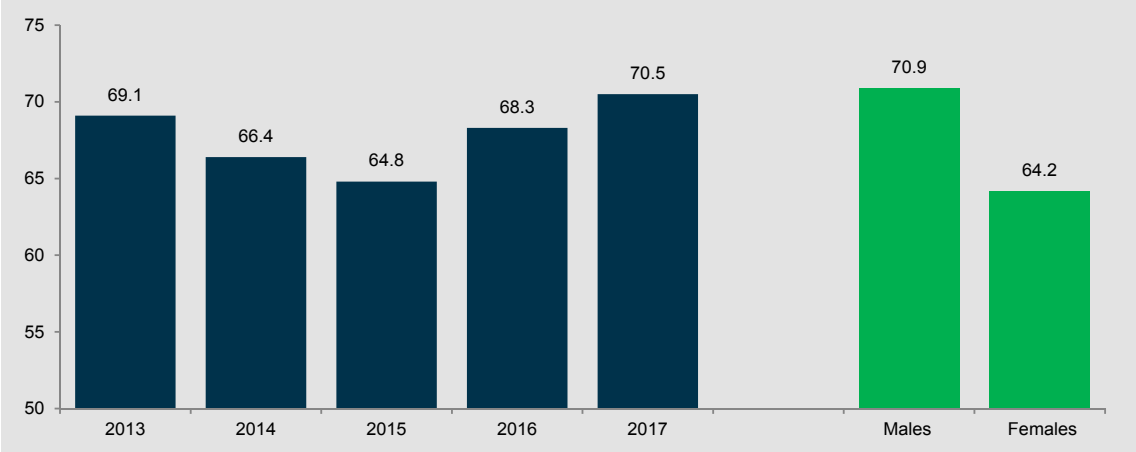
5 The data refer to minors and young adults in criminal institutions for minors, in ministerial and private communities and in reception centres (the latter are non-custodial facilities in which minors arrested or detained can be kept for a maximum of 96 hours awaiting measures by the competent judicial authority). This includes minors and young adults on trial for whom the judge has ordered their stay in the community.

Figure 16.3 - Unsentenced adult detainees as a proportion of overall prison population by region. Years 2010 e 2018 (%)



Source: Ministry of Justice

Figure 16.4 - Juveniles unsentenced detainees as a proportion of overall prison population by gender. Years 2013-2017 (%)



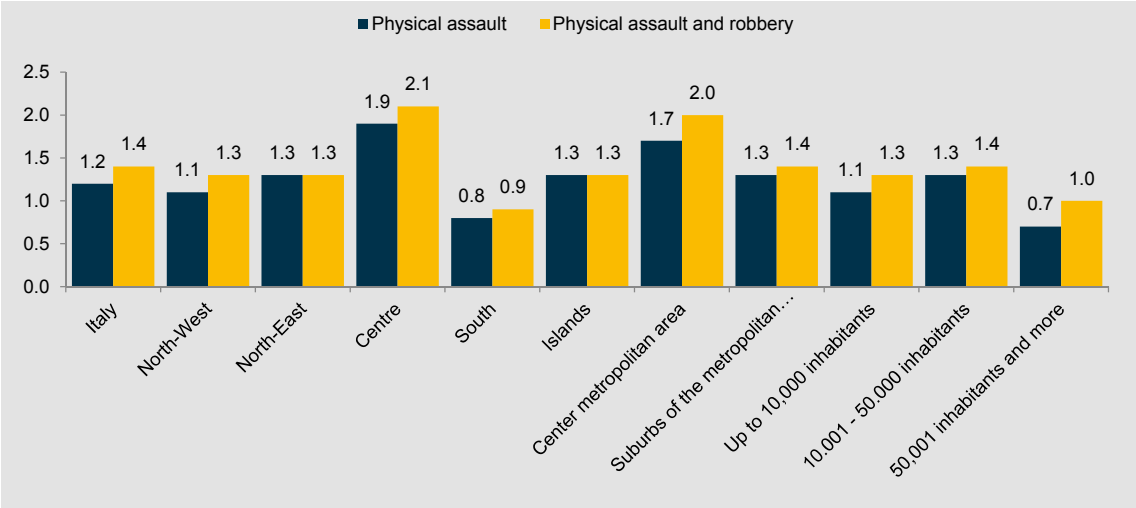
Source: Ministry of Justice

SDG 16.1.3 - Proportion of population subjected to (a) physical violence, (b) psychological violence and (c) sexual violence in the previous 12 months

Homicide rate is accompanied by that of other types of crime for which the propensity to report has a greater weight depending on the seriousness of the event and confidence in the police. In order to know the number of victims and crimes occurred, therefore, the number of reports to the competent bodies is accompanied by estimates of the share of unreported events, resulting from victimization surveys. The Citizens' Security Survey carried out in 2015/16 found a proportion of the population affected by physical assault and robbery consumed in the last 12 months, equal to 1.4% (1.2% physical assault alone[6]). The youngest age groups (14-19 years and 20-24 years) are those with the highest proportion of victims of these type of violence (Figure 16.5).

6 Statistiche Report. La percezione della sicurezza. Reference period 2015-2016. Publication date 22 June 2018 https://www.istat.it/it/archivio/217502.

Figure 16.5 - Proportion of persons aged 14 old and victims of physical assault and robbery in the last 12 months previous the survey. Year 2015/16 (%)



Source: Istat

SDG 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

The propensity to report is very variable, depending on the type of crime occurred and its consequences; only 27%9 of the victims of physical assault and robbery in the last 12 months have reported it to the competent authorities. Victims of physical assault reported in 20% of cases, a percentage that increases to 29.7% if victims were injured[7].

SDG 16.2.3 - Proportion of young women and men aged 18-29 years who experienced sexual violence by age 18

Sexual violence becomes even more serious when the victim is a child. Estimating the incidence of this type of crime on the population presents difficulties linked to the sensitivity of the issue and requires specific statistical methodological techniques. According to the survey carried out for the first time for men and women in 2015/16, among people aged between 18 and 29 years, the victims of sexual violence before 18 years of age are equal to 4.1% for women and 0.7% for men[8].

SDG 16.1.4 - Proportion of population that feel safe walking alone around the area they live

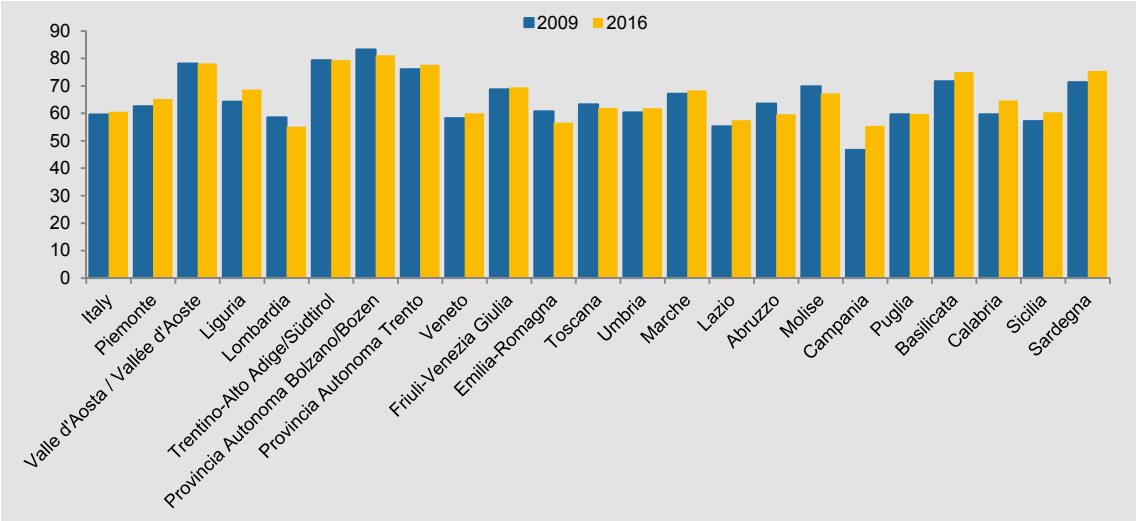
The picture of crime is completed by analysing the perception of individuals on the level of security that they feel when walking alone in the dark in the area in which they live. In 2016, 60.6% of people declared themselves to feel very or fairly safe, with a decrease of 4 percentage

7 Statistiche Report. Reati contro la persona e contro la proprietà: vittime ed eventi. Reference period 2015-2016. Publication date 1 February 2019. https://www.istat.it/it/archivio/226696.

8 Statistiche Report. Le molestie e i ricatti sessuali sul lavoro. Reference period 2015-2016. Publication date 13 February 2018 https://www.istat.it/it/archivio/209107.

points compared to 2002 and a substantially stable trend compared to 2009 (59.6%). The perception of security varies considerably according to the vulnerability of people, the urban dimension and the territorial area. Older people feel less safe (only 32.6% of the over 75s feel very or fairly safe); women feel less safe (60.6%) than men (75.3%)[9] (Figure 16.6).

Figure 16.6 - Proportion of population that feel safe walking alone around the area they live. Years 2009 and 2016 (%)



Source: Istat

SDG 16.5.1 - Proportion of persons who had at least one contact with a public official and who paid a bribe to a public official, or were asked for a bribe by those public officials, during the previous 12 months

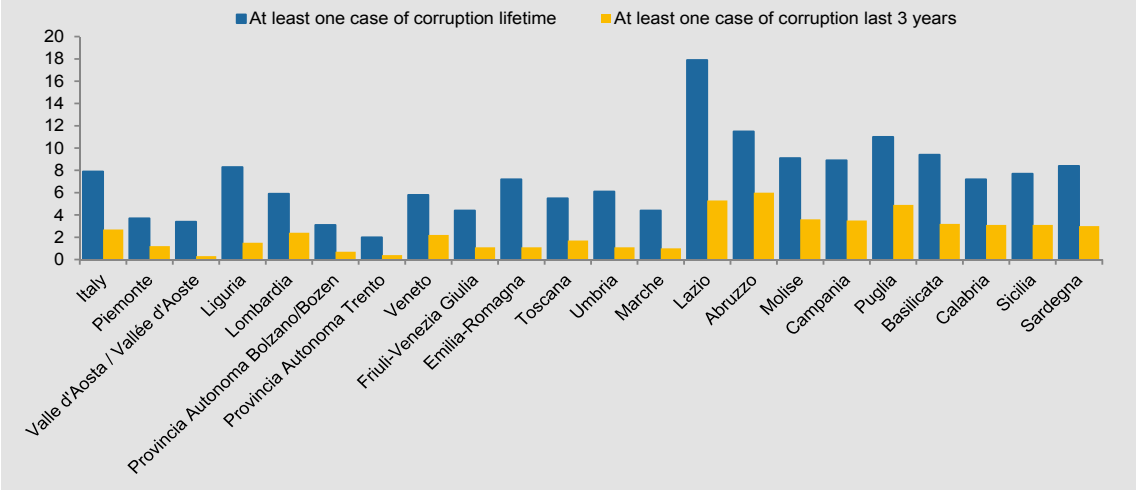
As part of the 2015/16 Victimisation Survey, Istat has investigated for the first time the phenomenon of corruption[10]. It is estimated that 7.9% of families have received at least one request for money, favours, gifts or other in exchange for services or facilities during the course of their lives, equal to 1 million 742 thousand families involved; 2.7% have received them in the last 3 years, 1.2% in the last 12 months.

The situation on the territory is very varied depending also on the areas of corruption. Corruption in health care is more frequent in Abruzzo (4.7%) and Campania (4.1). In the workplace, cases of corruption are most reported in Lazio (7.4%) and Puglia (6.3%). It is estimated that over 6 million people (13.1% of the population aged between 18 and 80) have indirect experience, i.e. citizens who declare that they personally know someone - relatives, friends, colleagues or neighbours - who has been asked to give money, favours or gifts in order to obtain facilitations in various areas and sectors. More than 1 million 700,000 citizens (3.7% of the population aged between 18 and 80) have been offered money, favours or gifts to vote in local, parliamentary or European elections. *Exchange voting* is more frequent in local elections and reaches its highest peaks in the South and Islands area, where it has had some experience, respectively, 6.7% and 8.4% of the population. (Figure 16.7).

9 See note 6.

10 La corruzione in Italia: il punto di vista delle famiglie. Reference period 2015-2016. Publication date 12 October 2017 https://www.istat.it/it/archivio/204379.

Figure 16.7 - Households where at least one component has received requests for money, gifts or favours in exchange of favours or services lifetime and last 3 years, by regions. Year 2015/16 (%)



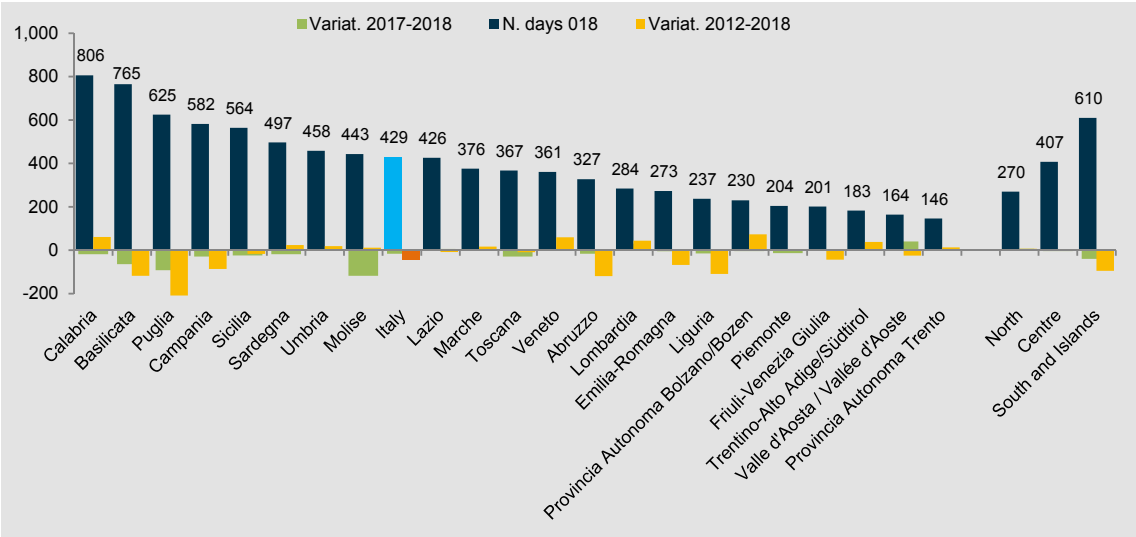
Source: Istat

SDG 16.6.2 - Share of population satisfied with their most recent experience with public services

Target 16.6 is aimed at developing effective, accountable and transparent institutions, monitored through different indicators representing the share of satisfied population of some public services measuring different dimensions.

The first of these is effective average duration of the civil proceedings of the ordinary courts, which remained high in the last year and equal, on average, to 429 days. In 2012, the average duration was 471 days, while it was 445 days in 2017; a peak of 494 days occurred in 2014. Subsequently, the value has been decreasing, partly reducing the differences between the regions, which still remain quite high. Compared to the previous year, significant reductions still occur in most regions, especially in the Centre-South. In 2018, the longest duration was in Calabria (806 days) and Basilicata (765 days) (Figure 16.8).

Figure 16.8 - Effective average duration in days of civil proceedings. Years 2012, 2017 and 2018 (days, variation in days)

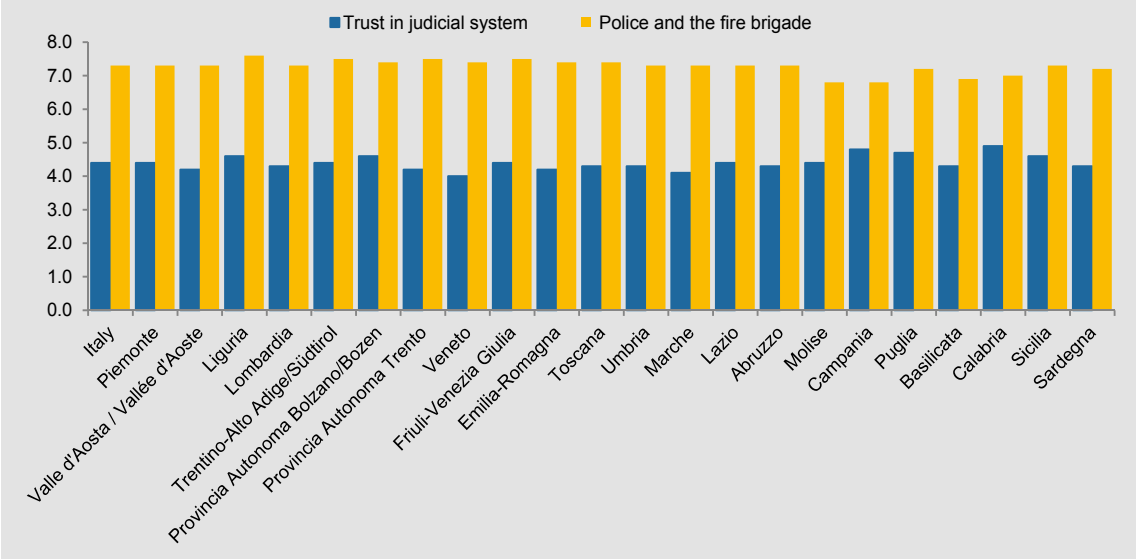


Source: Dipartimento dell'organizzazione giudiziaria, del personale e dei servizi - Direzione Generale di Statistica e analisi organizzativa

A second dimension is the level of public confidence in the judicial system or other types of institutions, such as law enforcement and fire brigades.

The level of trust is expressed through a score of 1 to 10 by people aged 14 and over. In the case of the judiciary, the average score is 4.4 and does not appear to have changed significantly over the last seven years, nor is there any significant difference in region, age or gender. In terms of law enforcement and firefighters, the level of satisfaction is higher and equal to 7.3 (the same as measured in 2012). Also in this case the regional differences do not appear significant, just as there are no differences in evaluation by gender; on the contrary, a slight increase in confidence can be seen with age (Figure 16.9).

Figura 16.9 - Trust in other institutions (average score of trust in the police and the fire brigade expressed). Year 2018
(average scores)

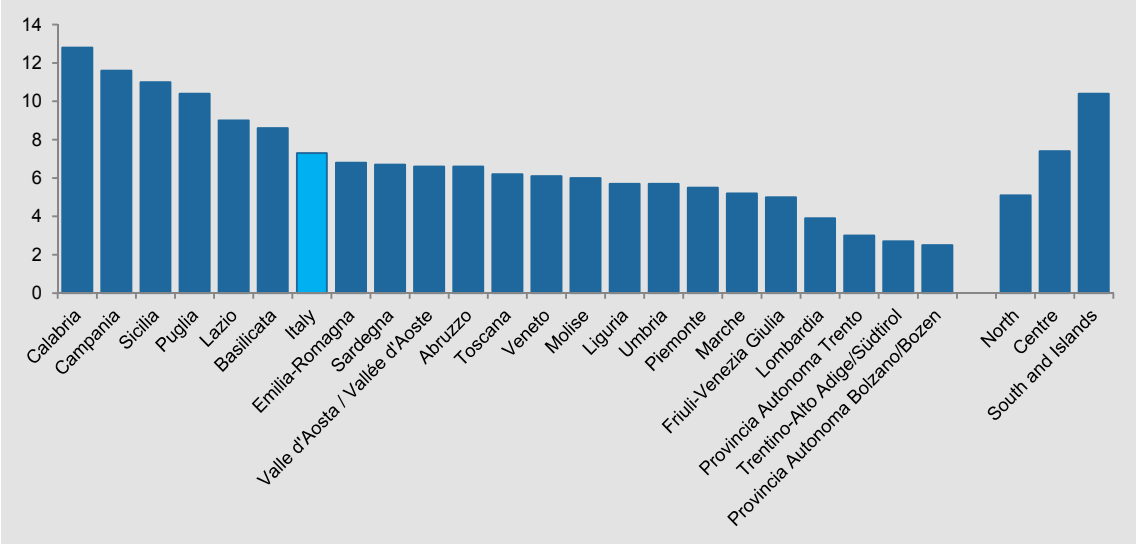


Source: Istat

To complete the picture of citizens' satisfaction with public services, it is considered the percentage of families who declare very difficult to reach at least three essential services: pharmacies, first aid, post office, police, carabinieri, municipal offices, nursery, kindergarten, primary school, lower secondary school, food shops, markets, supermarkets[11]. On average, in Italy, 7.3% of families complain of this difficulty (Figure 16.10).

11 Three-term moving average: the figure for each year is calculated as the three-year average for the reference year, the previous year and the following year.

Figure 16.10 - Percentage of households that find very difficult to reach some basic services.Average years 2016-2018 (%)



Source: Istat

In brief

In 2017, 0.6 victims of intentional homicide per 100,000 inhabitants occurred. The rate decreased over the years in the case of men, while it remained stable in the case of women.

The share of the population affected by physical assault and robbery consumed in the last 12 months is 1.4%, 1.2% for physical assault alone.

27% of the victims of assault in the last 12 months reported to the police or other judicial authorities.

4.1% of women and 0.7% of men aged between 18 and 29 years were victims of sexual violence before the age of 18.

In 2016, the proportion of population who feel safe when walking alone in the dark in the area where they live (60.6%) increased one percentage point compared to 2009 (59.6%), but remained significantly lower than in 2002 (64.6%).

7.9% of families have been involved in at least one case of corruption during their lifetime, 2.7% in the last 3 years, 1.2% in the last 12 months from the interview.

The share of adult prisoners in Italian prisons awaiting first trial has decreased over the years (16.5% in 2018).

For juveniles, this quota was 70.5% in 2017, but it is not appropriate to make a comparison with the adults, especially because for juveniles the trial is often suspended and put to the test, and this order is prior to the sentence.

The average duration of civil proceedings in ordinary courts remained very high, at 429 days on average in 2018, with large territorial differences.

S D G Ref.	INDICATORS		VARIATION			
			long term	medium term		short term
			2007-2017	2007-2012	2012-2017	2016-2017
16.1.1						
	Victims of intentional homicide	of male	a	b	c	d
	Victims of intentional homicide	of female	a	b	c	d
16.1.4						
	People aged 14 and over feeling unsafe when walking alone in the dark in the area where they live				e	
16.3.2						
	Unsentenced adult detainees as a proportion of overall prison population				c	d
16.6.2						
	Effective average duration in days of civil proceedings				c	d
	Trust in judicial system				c	d
	Trust in other institutions				c	d
	Percentage of households who find very difficult to reach some basic services		a	b	c	d
16.7.1						
	Women and political representation in Parliament		a	f	g	

LEGEND

- Sharp improvement
- Slight improvement
- Stability
- Slight deterioration
- Sharp deterioration

NOTES

(a) 2008-2018
(b) 2008-2012
(c) 2013-2018
(d) 2017-2018
(e) 2009-2016
(f) 2008-2014
(g) 2014-2018

GOAL 17

STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT[1]

Goal 17 focuses on strengthening the means of implementation of the 2030 Agenda and promoting the global partnership for sustainable development. It is a Goal with a strong cross-sectional character compared to the other SDGs, which instead provide for specific means of implementation. Cooperation, a principle inherent in the concept of sustainability itself, is the basic precondition for implementing the Agenda: 'All countries and all stakeholders, acting in collaborative partnership, will implement this plan'. In an increasingly globally interconnected world, collaboration for sustainable development must be realized at international, national and local level, and involve public institutions, the private sector and the civil society, reinforcing solidarity and protecting the needs of the most vulnerable categories. There is a special focus on the developing and least developed countries, with the objective of integrating them more effectively into the global economy and strengthening them through the contributions and resources of developed countries, coherently with each country's abilities and needs and respecting national priorities and policies. With the input of advanced countries, less advanced countries can invest in services and infrastructures that allow an improvement in well-being and the adoption of sustainable production and consumption models and lifestyles. The multiple Goal 17 Targets refer to different areas of global partnership: finance (Targets 17.1-17.5); technology (Targets 17.6–17.8); capacity building (Target 17.9); trade (Targets 17.10-17.12); Policy and institutional coherence (Targets 17.13-17.15); Multi-stakeholder partnerships (Targets 17.16 and 17.17); Data, monitoring and accountability (Targets 17.18 and 17.19). Regarding the latter field, a substantial acceleration of statistical activities is necessary to implement the needed indicators.

1 This section was edited by Paola Ungaro with contributions from Maria Liviana Mattonetti and Gaetano Proto.

Targets

Goal 17 is broken down into nineteen Targets:

17.1 Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.

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.

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.

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.

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.

Indicators released by Istat

Eight statistical measures were released by Istat for Goal 17, referring to five Targets.

Table 17.1 - List of SDGs indicators and indicators released by Istat

Indicators	Relation with SDG indicator	Last available value
SDG 17.1.1 - Total government revenue as a proportion of GDP, by source		
Total government revenue as a proportion of GDP, by source (Istat, 2018, %)	Proxy	42.17
SDG 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 Development Assistance as a proportion of gross national income (Ministry of Foreign Affairs and International Cooperation, 2017, %)	Identical	0.3
Net Official Development Assistance (ODA) to Least Developed Countries (LDCs), as a proportion of Gross National Income (GNI) (Ministry of Foreign Affairs and International Cooperation, 2016, %)	Identical	0.05
SDG 17.3.2 - Volume of remittances (in United States dollars) as a proportion of total GDP		
Foreign workers' remittances (Bank of Italy, 2018, Millions of Euros)	Proxy	6,200.9
Foreign workers' remittances (Bank of Italy, 2018, %)		*
SDG 17.6.2 - Fixed Internet broadband subscriptions per 100 inhabitants, by speed		
Households with fixed and/or mobile broadband connection (Istat, 2018, %)	Proxy	73.7
Enterprises with at least 10 persons employed with connection to the Internet via fixed and/or mobile broadband (%) (Istat, 2018, %)	Proxy	94.2
SDG 17.8.1 - Proportion of individuals using the Internet		
Individuals aged 6 years and over using the Internet in the last 3 months, per 100 individuals (Istat, 2018, %)	Identical	**66.4**
Enterprises with at least 10 persons employed with web site or a homepage (%) (Istat, 2018, %)	Proxy	71.4

* Please see the data table.

Three of the statistical measures correspond exactly to those provided by the SDGs: both of those related to official development assistance as a share of gross national income (17.2.2) and the percentage of individuals using the Internet (17.8.1). The proxies are indicators 17.1.1 (Total government revenue as a proportion of GDP), 17.3.2 Foreign workers' remittances (released for the first time), 17.6.2 related to households and enterprises with broadband connections, and 17.8.1 on enterprises with web site or a homepage (see Goal 9). At this stage of progress, in this section we concentrate only on financial aspects, although the concept of cooperation for development goes beyond the provision of monetary flows.

Focus

SDG 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)

The 2030 Agenda Target 17.2 focuses on Official Development Assistance (ODA), defining specific Targets for overall assistance and for that directed to the Least Developed Countries (LDCs).

Over the years, a lively debate has been going on the topic of the effectiveness of international aid and with respect to the need to reach a more balanced relationship between donor and recipient countries, abandoning a purely welfare approach. A long process led to the recognition of the need to base development aid on the principle of global cooperation, with internationally coordinated operations, respectful of the actual development priorities of the partner states and devoid of business interests by the donor states[2]. Fundamental milestones were the Monterrey International Conference on Financing for Development (2002), the Paris Declaration on Aid Effectiveness (2005), the third International Conference in Accra (2008), the Doha Conference (2008), the 4th Busan High-Level Forum (2012), the third International Conference on Financing for Development in Addis Ababa. The second High Level Meeting of the Global Partnership for Effective Development Co-operation (GPEDC), held in Nairobi in 2016, focused in particular on the strategies and the organization to adopt to implement the commitments of the 2030 Agenda and realize the SDGs.

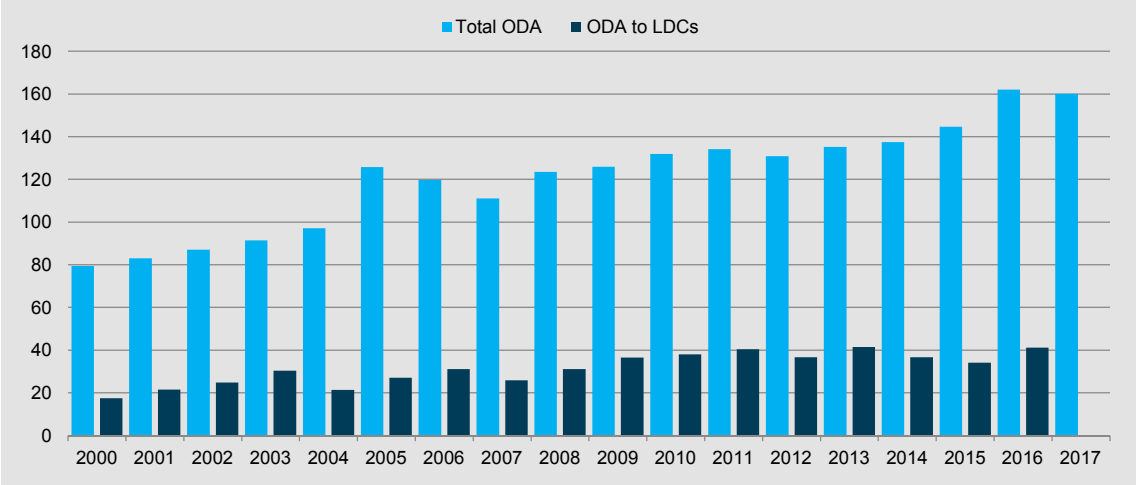
In this context, the Development Assistance Committee (DAC) of the OECD[3] plays a significant role. The DAC has been monitoring financial flows to developing countries since 1961, the year it was established, paying special attention to the official, facilitated part of these flows, defined as ODA. According to the OECD's official definition, ODA consists of transfers to the countries and territories in the DAC list (http://oe.cd/dac-list) and to multilateral institutions, performed by governmental agencies with the main Goal of promoting economic development and well-being in developing countries[4]. ODA comprises the key measurement of the public contribution to cooperation for development and a tool for evaluating the participation of the various donor countries.

2 For the EU, see the 'Communication from the Commission to the European Council and Parliament - Untying: Enhancing the Effectiveness of Aid' (COM(2002) 639 final).

3 DAC is an international forum consisting of many of the major aid funders (including the European Union), with the participation of the World Bank, the International Monetary Fund and the United Nations Development Programme (UNDP) acting as observers.

4 These resources are provided as loans with favourable terms, with a non-repayable portion of at least 25% until 2017, raised to 45% for low income countries (including LDCs) and lowered to 10-15% for middle income countries starting from 2018 ('http://www.oecd.org'; https://www.un.org/ldcportal/when-should-concessional-loans-be-reported-as-oda/). In Italy, international cooperation for development is governed by Law 125/2014.

Figure 17.1 - Total ODA and ODA to LDCs. Years 2000-2017 (billions of constant 2016 USD)



Source: https://unstats.un.org/sdgs/indicators/database/

Between 2000 and 2017, total net ODA from the countries of the DAC grew consistently up to 160.1 billion dollars at constant prices, that is a doubled volume compared to 2000 (Figure 17.1). The component of ODA directed to the least developed countries more than doubled, rising from 17.5 billion dollars in 2000 to 41.2 in 2016. As regards recent years, the significant increases recorded by total ODA in 2015 and 2016 (7.3 billion dollars for the first year and 17.3 for the second) were partially due to the growth in aid for refugees in donor countries[5] that followed the European migrant crisis. In 2017, however, there was a 1.9 billion dollars drop in the total sum allocated to ODA.

The indicator adopted to monitor Target 17.2. (SDG 17.2.1) is the ratio between net disbursements for ODA of the DAC donors and their gross national income, separately for total ODA and for ODA to LDCs, allowing quantification of the progress compared to the 2030 Targets. In 2017, the countries that reached or exceeded the 0.7% ODA/GNI ratio were Sweden (1.01%), Luxembourg (1.00%), Norway (0.99%), Denmark (0.72%), and the United Kingdom (0.7%) (Figure 17.2). On the other hand, the indicator assumed low values in Hungary (0.11%), Slovakia (0.12%), Poland and Czech Republic (0.13%), the Republic of Korea (0.14%), Greece and Slovenia (0.16%), Portugal and the United States (0.18%). However, not all countries in the EU must meet a Target of 0.7%, as various Member States contribute to the overall EU Target of 0.7% with different national Targets[6].

Although on the rise compared to 2005, the European Union ODA/GNI ratio still is well below the 0.7% Target, although that commitment was established in 2015 (Figure 17.3). After the 2007-2010 increase, the economic/financial crisis also had consequences on global cooperation, at first stopping the growth of ODA/GNI (after the peak recorded in 2010) and then resulting in a drop. From 2015, the ratio began rising again, also due to the

5 Spending reserved for refugees in donor countries can, in fact, be counted as ODA for the first year after their arrival. In 2016, the share of ODA designated for reception of refugees exceeded 20% in our country, as it did in Austria, Germany and Greece. Even excluding that share, ODA has seen a remarkable increase (7.1% in the last year; http://www.oecd.org/).

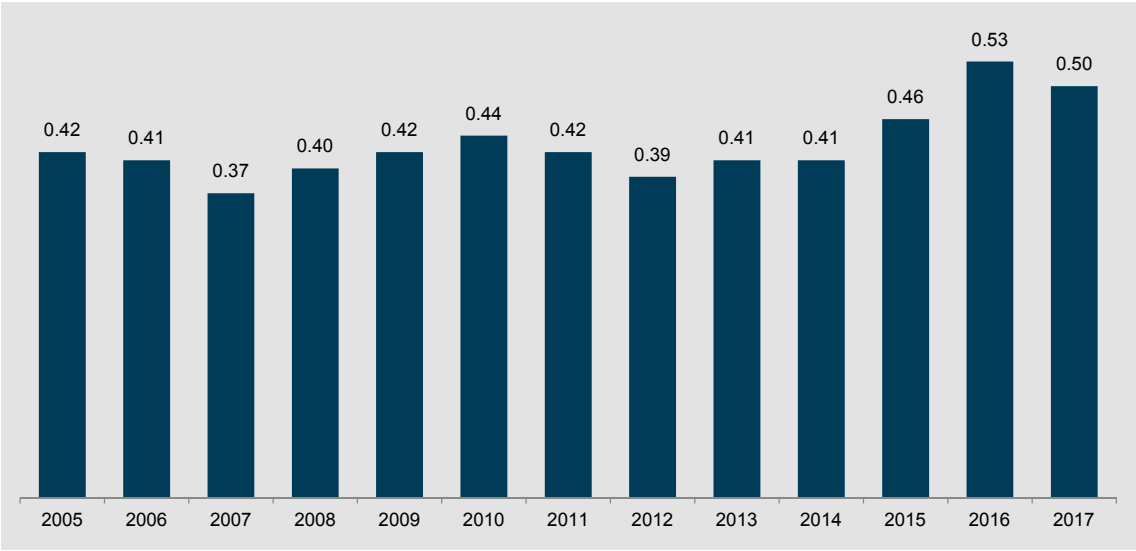
6 For the countries in the EU before 2002, the Target is 0.7% or higher (if achieved), while for the countries that joined the EU after 2002 the Target is 0.33% (see 'A new global partnership for poverty eradication and sustainable development after 2015', European Council conclusions 9241/15).

Figure 17.2 - Total ODA, by DAC donor country. Year 2017 (percentage of gross national income)

Source: https://unstats.un.org/sdgs/indicators/database/

mentioned growth in aid for refugees, reaching 0.50% in 2017. After missing the 0.56% Target in 2010 and the 0.7% Target in 2015, the European Council reaffirmed in 2015 its commitment to 0.7% for the EU, making it subject to the timing set by the 2030 Agenda (European Council Conclusions 9241/15).

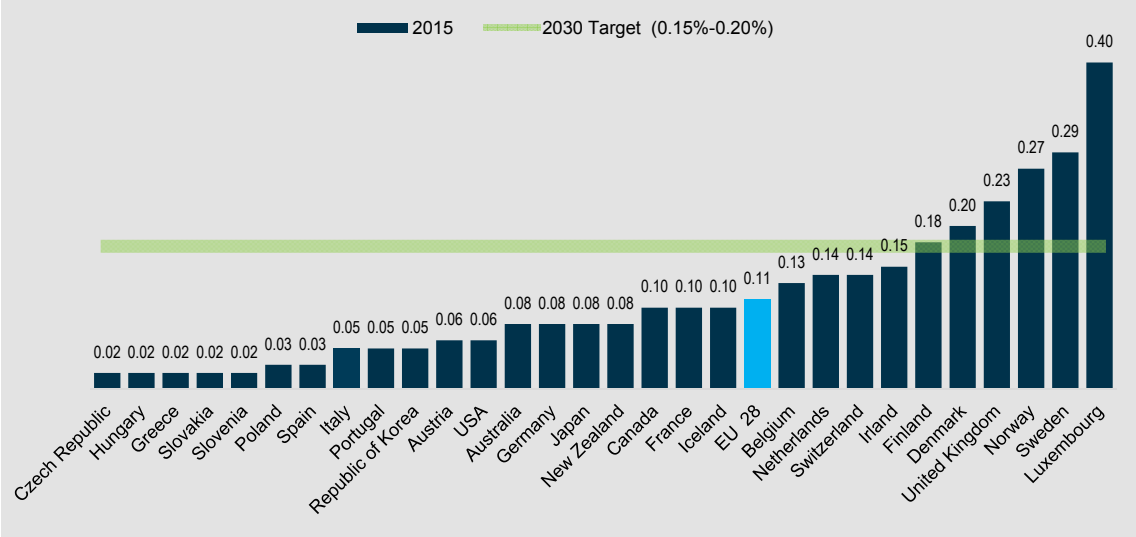
Figura 17.3 - EU-28 Total ODA. Years 2005-2017 (percentage on gross national income)



Source: http://ec.europa.eu/eurostat

As part of the post-2015 planning, the European Council adopted the Targets of the 2030 Agenda also with reference to official development assistance to LDCs. Specifically, the commitment for the Union is to reach a collective Goal of 0.15%-0.20% of the share of gross national income for ODA to LDCs, in the short term, and 0.20% by 2030. In 2015, the European Union was still below the minimum Target of 0.15%, with an overall ratio of 0.11% (Figure 17.4). The countries that reached or exceeded the minimum Target were Ireland (0.15%) and Finland (0.18%), while those that reached or exceeded the 0.20%

Figure 17.4 - ODA to LDCs, by DAC donor country. Year 2015 (percentage of gross national income)

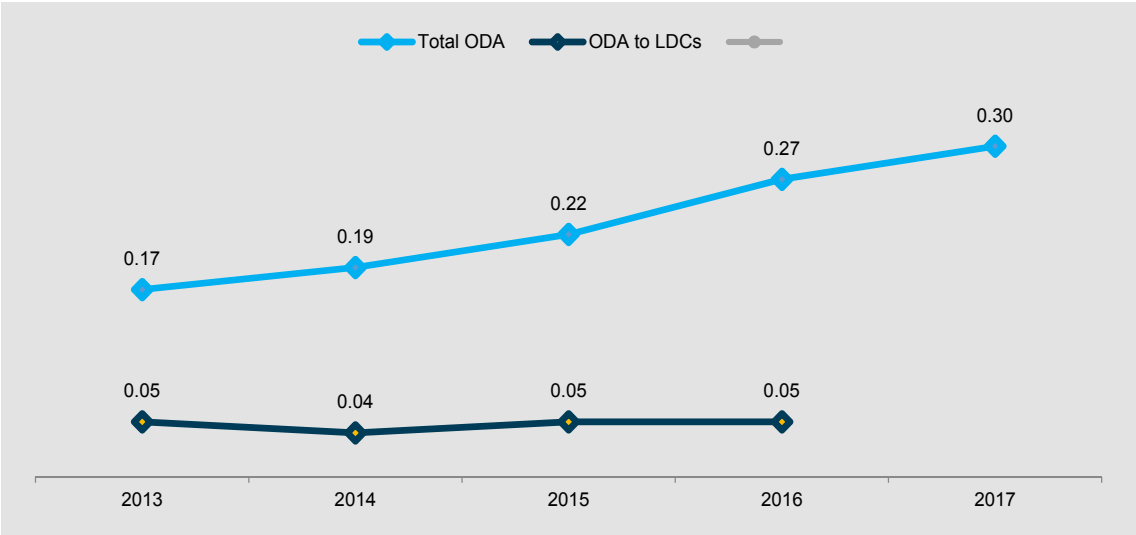


Fonte: http://ec.europa.eu/eurostat

Target were Denmark (0.20%), United Kingdom (0.23%), Norway (0.27%), Sweden (0.29%) and Luxembourg (0.40%).

In our country, the ODA share of GNI shows an increasing trend (Figure 17.5): the indicator increased by 0.02 percentage points in 2013 (0.17%) and 2014 (0.19%) and reached 0.22% (+0.03) in 2015. 2016, in particular, saw a significant increase (+0.05 percentage points) which allowed Italy to reach a share of 0.27%. In the last year, in contrast with the decline recorded by the EU average, our country attained a further increase up to 0.30%. Unfortunately, ODA to LDCs did not experience such a positive trend: between 2013 and 2016, in fact, the share of GNI remained stable (0.05%). As a result, Italy lies below the average contribution from DAC countries in terms of both total ODA and ODA to the least developed countries.

Figure 17.5 - Total ODA and ODA to LDCs in Italy. Years 2013-2017 (percentage of gross national income)



Source: Ministry of Foreign Affairs and International Cooperation

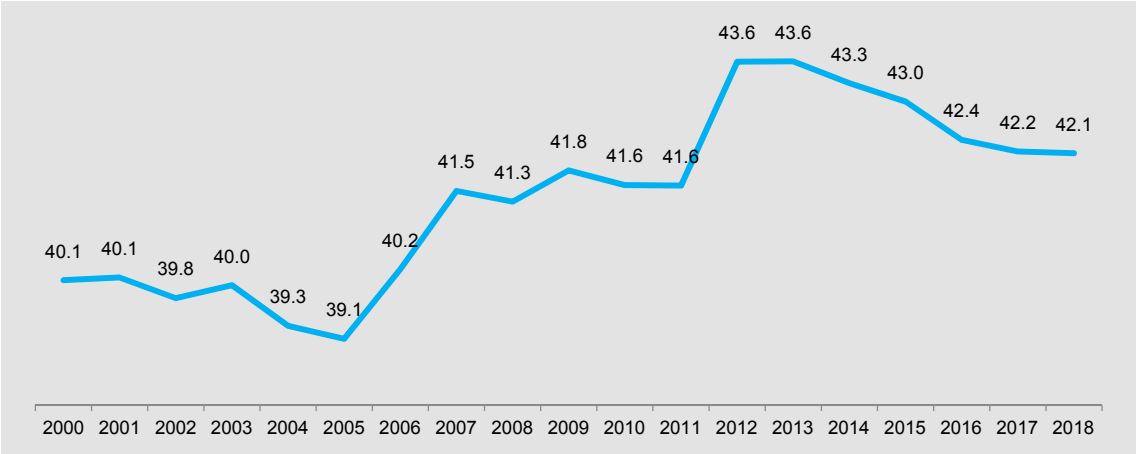
Other indicators

SDG 17.1.1 - Total government revenue as a proportion of GDP, by source

Target 17.1 aims at strengthening the domestic capacity for tax and other revenue collection by Government in order to achieve such objectives as the stabilization of the economy, the reallocation of resources and the redistribution of income. The indicator selected for monitoring fiscal policies is the ratio between total tax revenue and GDP. Tax revenues include taxes (direct, indirect and capital) and social contributions (actual and imputed).

In the period between 2000 and 2018, the share of tax revenues on GDP showed a discontinuous but overall increasing trend (Figure 17.6). In the years 2000-2005 the indicator followed a slightly decreasing tendency, except for 2003 (when the proceeds for the introduction of the severance pay reform increased tax revenues in the form of capital taxes), touching 39.1% in 2005 (-1 percentage point compared to 2000). Between 2006 and 2011, an initial phase of intense growth was observed, peaking in 2007 when the tax burden reached 41.5%, and then fluctuating around this value for the rest of the period. The slight rebound in 2009 is due to the extraordinary tax on capital returned from abroad (tax shield). In 2012, the indicator showed a level shift, reaching 43.6% due to the combined effect of the contraction in GDP and the growth in tax revenues generated by a restrictive fiscal policy. After a year of stability, the indicator started to decline again since 2014. In 2018, government revenue accounted for 42.1% of GDP, 2 percentage points higher than in 2000.

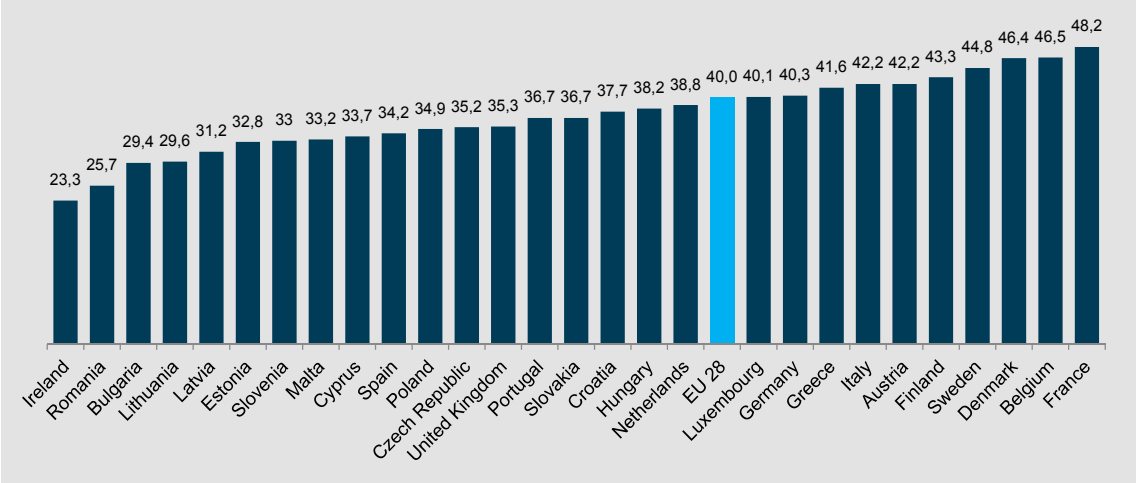
Figure 17.6 - Total government revenue as a proportion of GDP. Years 2000-2018



Source: Istat, Analisi dei contributi alla produzione, imposte sulla produzione e importazioni, Iva (PSN: IST-00577); Conti della protezione sociale per funzione e per regime (SESPROS) (PSN: IST-00578)

In 2018, most of the tax revenues derived from indirect taxes (14.5% of GDP) and direct taxes (14.2%). Actual social contributions represent a share of GDP equal to 13.2%, while figurative ones and capital taxes have a low weight (0.2 and 0.1% respectively). In 2017, Italy showed an incidence of general government revenues on GDP above the average of the 28 EU member countries (Figure 17.7). The countries with the highest incidence of tax revenue (taxes and social contributions) are Sweden (44.8%), Denmark (46.4%), Belgium (46.5%) and France (48.2%), while the indicator is much lower in countries such as Ireland (23.3%), Romania (25.7%), Bulgaria (29.4%) and Lithuania (29.6%).

Figure 17.7 - Total government revenue as a proportion of GDP by country. Year 2017



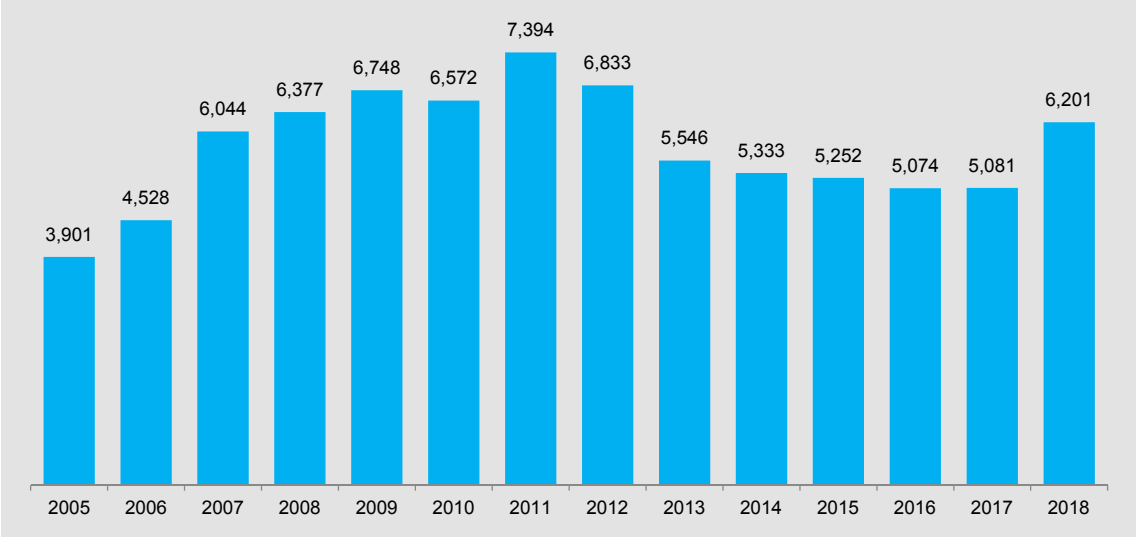
Source: Eurostat (http://ec.europa.eu/eurostat)

SDG 17.3.2 - Volume of remittances (in United States dollars) as a proportion of total GDP

Among the Targets of the global partnership for sustainable development, 17.3 is to mobilize financial resources for developing countries other than foreign direct investments and ODA. Foreign workers' remittances, defined as cross-border transfers of money between natural persons, help with economic inclusion of migrants in the host countries, but also provide an important financial contribution to the countries of origin, constituting a lever for investment growth and sustainability of development, and often a primary source of income for households. The 2009 G8, on the initiative of Italy, adopted the so-called "5x5 program", in order to facilitate and enhance the contribution of remittances to economic development and stability in the countries of destination. It is an international agreement coordinated by the World Bank for the reduction, on a global average level, of the transaction cost of remittances from 10% to 5% in five years, a Target adopted in 2014 G20 summit as well. The 2030 Agenda envisages as a means of implementation of Goal 10, the Target of reducing the costs of migrants' remittances to below 3% and eliminating remittance corridors with costs above 5% (Target 10.c).

Over time, the role of remittances has grown considerably, due not only to the increase in the volume of financial flows, but mostly to the growing weight of remittances compared to other international flows and to the national GDP of many destination countries, especially low-income ones. Furthermore, personal remittances represent a more direct source of income than other financial flows, with an immediate impact on the population, less volatile and subject to economic cycles. In 2016, at global level, the volume of remittances to low-middle and low-income countries was more than five times the amount of ODA, and higher than the sum of ODA and foreign direct investment. Between 2000 and 2016, the share of remittances on global GDP doubled; the growth was much more significant in countries such as Kyrgyzstan, Slovakia, Estonia, Mongolia, Laos, Guinea, Malawi, Nepal, Tanzania, Ghana and many others. In 2016, the ratio between remittances and GDP exceeded 30% in Nepal and Kyrgyzstan, reaching values between 20 and 30% in Haiti, Tajikistan, Moldavia, Gambia and Comoros.

Figure 17.8 - Foreign workers' remittances. Years 2005-2018 (millions of euros)

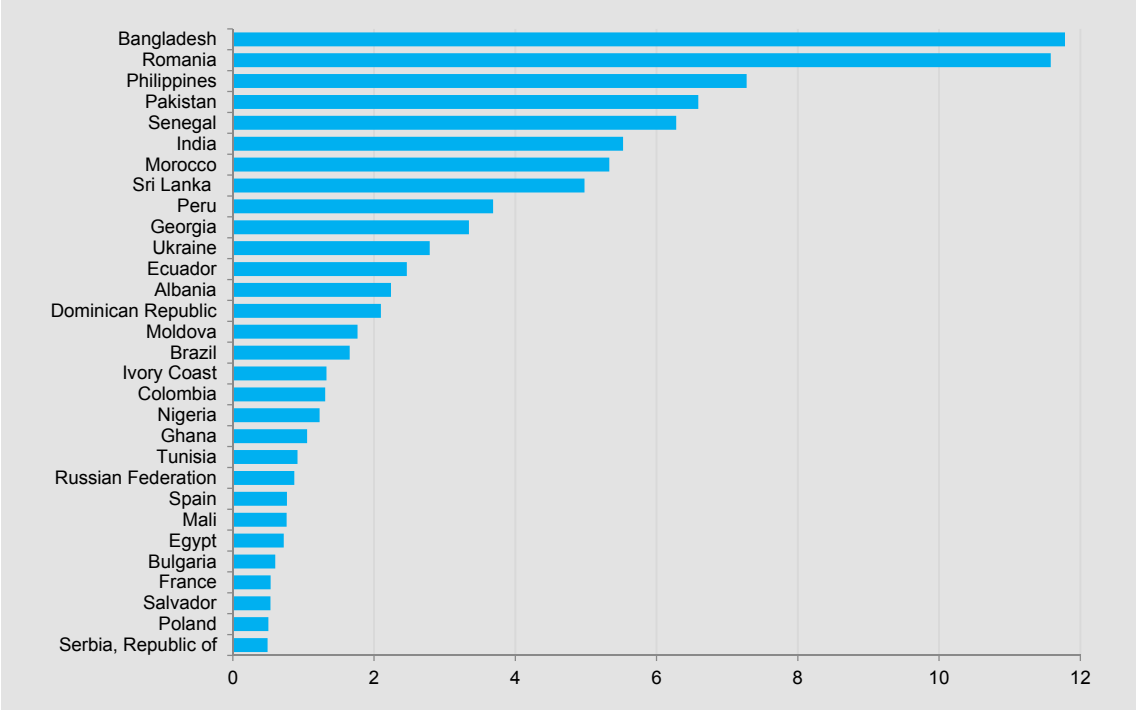


Source: Istat processing of Bank of Italy data

In Italy, migrants' remittances grew from 3.9 to 6.2 billion euros between 2005 and 2018 (+59%) (Figure 17.8). This increase is the result of two sub-periods marked by opposite trends. Excluding the decline recorded in 2010 (-2.6%), the volume of remittances presented a progressive growth in the period 2005-2011. The year 2011 was characterized by a peak of 7.4 billion euros, after which the trend showed a reversal. The decline was particularly significant in 2013, when the volume of money sent to the origin countries by immigrants in our country dropped to 5.5 billion (almost -20% compared to the previous year). The following years stood out for smaller decreases, up to 2017, which was stable compared to the previous year. The overall loss in the volume of remittances between 2011 and 2017 was almost 2.5 billion (-31.4%). 2018 marked a new significant increase of over 20% (+1.1 billion): remittances reached 6.2 billion, thanks to the contribution of Bangladesh (+198 million or +37%), Pakistan (+176 million, +76%) and the Philippines (+126 million, +39%).

In 2018, the country receiving the largest share of remittances from Italy was Bangladesh, collecting 11.8% of the total volume of remittances, closely followed by Romania (11.6%), then the Philippines (7.3%), Pakistan (6.6%), Senegal and India (around 6%), Morocco and Sri Lanka (around 5%). Overall, these countries collected about 60% of total remittances (Figure 17.9).

Figure 17.9 - Foreign workers' remittances as share of the total by receiving country. Year 2018 (%)



Source: Istat processing of Bank of Italy data

In brief

The incidence of government revenues on GDP slightly decreased in the last years.

In 2018, government revenue represented 42.1% of GDP. The percentage was slightly decreasing form 2016, but 2.1 percentage points higher than in 2000.

Official Development Assistance still very far from 2030 Targets.

Despite the growth recorded, for 2017 as well, in the share of gross national income allocated by Italy to ODA, the 2030 Targets are still far off and our country is below the average contribution of the DAC donor countries.

Foreign workers' remittances in Italy return to growth in 2018.

Migrants' remittances, down since 2012, increased in 2018, reaching 6.2 billion euro, with a percentage increase of 22% compared to the previous year (+60% approximately compared to 2005).

Broadband Internet connection in expansion, but the territorial variability is still high.

The incidence of households with broadband access to the Internet grew from 43% in 2010 to 73% in 2018; that of enterprises, from 31% in 2003 to 94% in 2018.

The regional differences in the use of ICT are still wide.

The percentage of the population using the Internet has grown rapidly, as well as the incidence of enterprises with a website, but territorial disparities remain significant.

4. SDGs MAPPING: INTERLINKAGES AND NETWORKS[1]

4.1 Statistical measures for SDGs: complexity, interlinkages and networks

The Sustainable Development Goals refer to different domains of analysis - social, economic, environmental and institutional - and consider as catalysts elements: integration, universality and participation. The interconnection between human systems and natural systems must therefore be integrated into a global perspective, considering the possible synergies between national and international institutions.

To facilitate the analysis of the Istat SDGs information system, an approach that considers the links and interactions between Goal and Target is useful, making the "interlinkages" between the related statistical indicators and thus building the possible related "mappings" dedicated to specific topics.

At both international and national level, attention is paid to the analysis of interlinkages: the analysis of the links helps to define the critical points and the nodes of sustainable development and, at the same time, to identify the interrelations between the statistical indicators, to support of active processes and policies.

The analyses related to interlinkages have three main purposes.

The first one is to facilitate the production of statistical information, aimed at bridging information gaps, identifying the most appropriate proxy indicators or the most relevant specific national indicators. The explanation and analysis of the interrelationships can help to understand the philosophy underlying the statistical measures to be developed and to identify the critical dimensions. This allows to focus attention on the fundamental dimensions of each target, trying to make the most of available statistical information.

The second purpose is to make complex statistical information more accessible, through the integrated analysis of social, economic and environmental dimensions and their interrelations, making explicit, for example, the interconnections related to climate change, the urban dimension, the possible development drivers, or aspects related to cross-cutting issues such as gender or citizenship inequalities or issues related to disability.

The third purpose proposes the use of the identified links to facilitate the use of statistical measures for monitoring, even cross-referencing, of sustainable development objectives to support policies. The integrated statistical systems, such as the current statistical platform SDGs Istat, as well as the study of the interactions between the different domains of the SDGs and the clarification of the links between the indicators, can support the monitoring and the choices on the synergistic actions to be developed, the definition of priorities, the identification of the trade-offs and of the relevant dimensions to be monitored, contributing to an overall improvement in the consistency of the policies to be implemented. Policies aimed at improving

1 This chapter was edited by Angela Ferruzza e Barbara Baldazzi, with contributions from Luigi Costanzo, Giovanna Tagliacozzo and Paola Ungaro.

a specific dimension could generate impacts in other dimensions with possible positive or negative effects in the short and long term cascade. The analyses can help identifying key variables that could be used to define more precisely the main targets to be pursued.

In this chapter, some of the analyzes aimed to explore the nature of interlinkages between Goals and finalized to take into account the different purposes, referring to statistical measures, used as a tool to identify such interactions, are described. It will therefore be highlighted how much the Istat SDGs Information System approaches the theoretical intentions set out in the UN-IAEG-SDGs system for the analyzed phenomena and what, instead, is additionally available, both for specific interests matured over the years and for the wealth of data sources.

The results are shown using a visualization through the graphs which helps to identify the main nodes related to the identified interconnections.

4.2 The SDGs network: UN-IAEG-SDGs metadata

Reading the interconnections and the interactions between themes, domains and objectives is useful to consider the indicators in a global perspective, navigating among the statistical measures useful for the construction of indicators for monitoring sustainable development. The analyzes start from the information contained in the metadata system of the Inter-agency and Expert Group on Sustainable Development Goals Indicators (UN-IAEG-SDGs): the links defined between the indicators and between the statistical measures explain the interactions between the targets.

A specific Working Group on Interlinkages was established in which Istat participates as part of the activities currently underway of the UN-IAEG-SDGs.

The pictures present the information contained in the UN-IAEG-SDGs metadata, according to the latest updates, which define the possible links with indicators of other Goals. Specifically, for each of the indicators that have well-defined metadata, the targets with which there are interrelations are indicated. These links were accounted for in matrices and visualized by graphs.

The links defined between the indicators make the interactions between the objectives explicit; a network in which some thematic areas are closely linked together and are often also “comprehensive and mature” in terms of structured statistical information (many Tier I indicators).

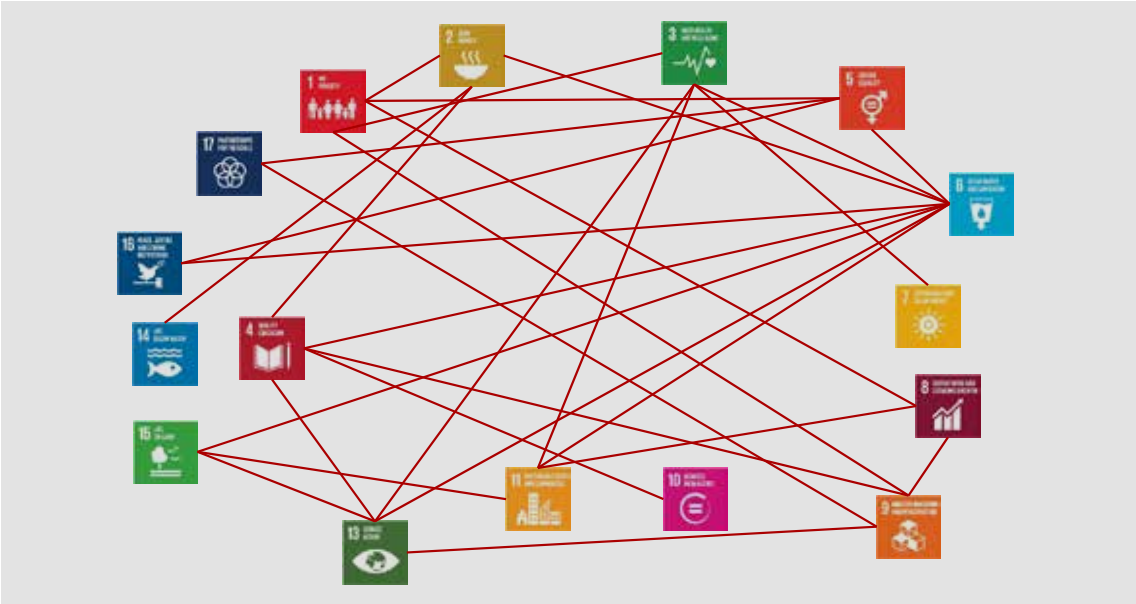
The synthetic representations of the relationships between the Goals are realized through the sum of the number of links indicated, without taking into account their direction: therefore, there are graphs relative to the light links (from 1 to 3 connections), medium links from 4 to 10) and strong links (more than 10).

The analysis carried out shows that the network based on the UN-IAEG-SDGs metadata is connected and inclusive, leaving no development goals excluded. In fact, there are no isolated nodes that cannot be reached through the paths that can be developed.

Widely connected and central to the network are the Goal 1 (No Poverty) and 11 (City) with 15 links, the Goal 4, (Quality education) with 14 links, the Goal 5 (Gender Equality) and 6 (Clean water), with 13 links, the Goal 8 (Work) with 12 links.

Figure 4.1 - Statistical indicators for SDGs monitoring by typology of links - Light (1-3 links)

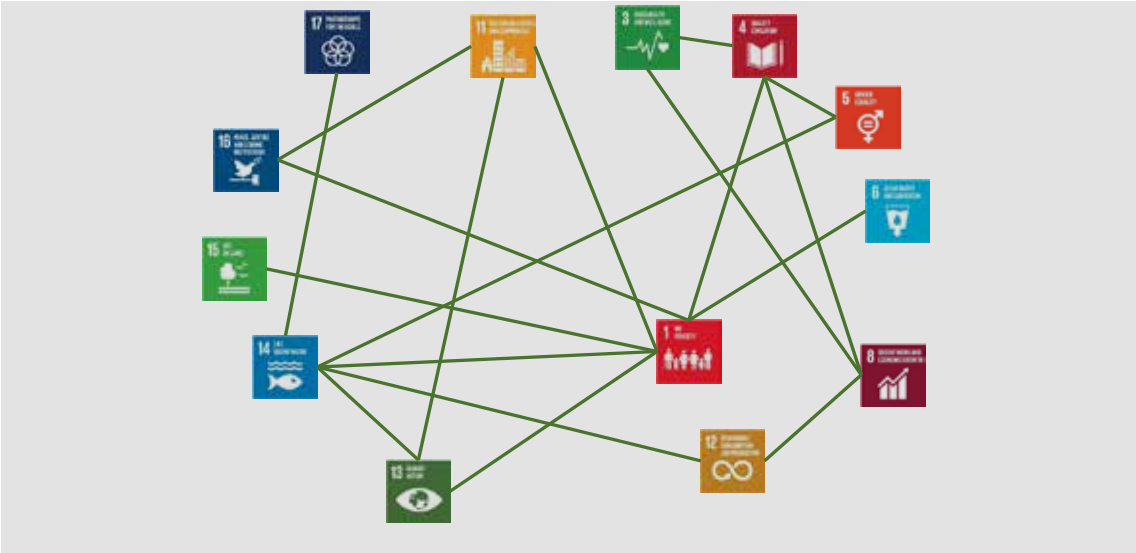
Figure 4.2 - Statistical indicators for SDGs monitoring by typology of links - Medium (4-10 links)



The analysis by intensity (strong, medium, light) of the relations shows how, while for medium and light links, the network of objectives concerns all 17 objectives, the strong ties currently exclude only four Goals: the 2 (Food) , 7 (Energy), 10 (Equality), 9 (Innovations and infrastructures).

Identifying the connections between objectives and targets through the links of the statistical measures underlying the indicators, included in the global SDGs framework, is a valid support to promote the subsequent integrated analyzes to be tested at national level, identifying specific thematic areas to study the paths for groups of objectives, considering the purposes related to production, analysis and monitoring.

Figure 4.3 - Statistical indicators for SDGs monitoring by typology of links - Strong (more than 10 links)



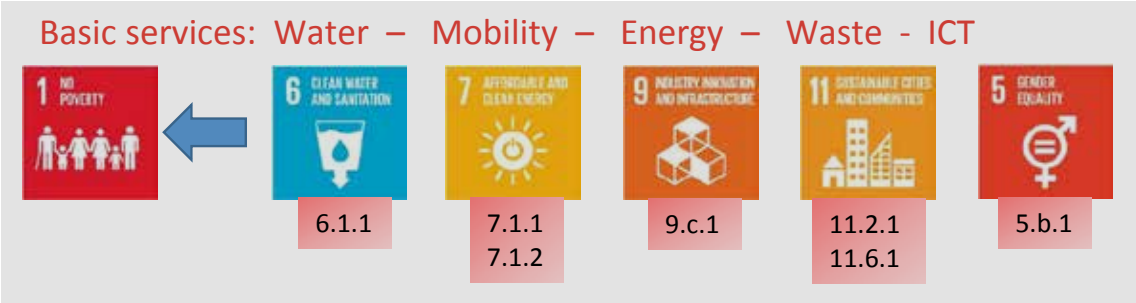
4.3 The SDGs network: indicators production

The statistical indicators for the Istat SDGs Information System are chosen, also thanks to a close collaboration with various Sistan institutions, through a continuous selection process that takes into account the interlinkages between Goals, Targets, indicators. By way of example and to highlight the importance of interconnection analyzes, the path taken for the selection of Goal 1 measures is described. For the current 2019 release, with reference to Target 1.1, the percentage of persons employed that are at risk of income poverty, an indicator closely linked to the Target 1.2, was chosen.

The Target 1.2 is expressed through the Indicator 1.2.1 - proportion of the population living below the national poverty line - which is developed through: absolute poverty and relative poverty. In the Istat SDGs Information System there are three indicators: two for absolute poverty measurement and one for relative poverty measurement. For indicator 1.2.2 - Proportion of men, women and children of all ages living in poverty in all its dimensions - the indicator relating to “people at risk of poverty or social exclusion” is released with its sub-dimensions of “poverty of income”, “low labor intensity” and “severe material deprivation”.

The Target 1.3 is expressed by the indicator 1.3.1 “Proportion of the population covered by social protection plans / systems”. For the national context, it was decided to focus attention on obstacles to access to health services due to economic difficulties and an Eu-Silc source indicator was inserted. The Target 1.4 analyzes access to basic services and land ownership. For indicator 1.4.1 - Proportion of population living in families with access to basic services - the recently released UN-IAEG-SDGs metadata led to a review of national indicators. The basic services provided in the metadata concern access to drinking water, sanitation, sustainable energy and mobility, housing, education, health care, etc. The indicator 1.4.1 is, therefore, a typical example of interconnection between different Goals because it considers that the achievement of access to different basic services in a country can be monitored by analyzing different components drawn from SDGs indicators present in other Goals. In fact, the “house cost overloading rate” is an indicator only present in 1.4.1, while the other components are borrowed from other goals (see Figure 4.4).

Figure 4.4 - Indicators in 1.4.1 "Percentage of population/households with access to basic services" new metadata from UN-IAEG-SDGs and present in other goals



The Target 1.5 expresses the theme of the statistical measurement of extreme events and disasters: in this case the indicator is present, in the same formulation also in the Goals 11 and 13 to which it is, therefore, interconnected. Currently, partial indicators are available concerning the proportion of the population in areas with hydrogeological problems and the number of deaths and injuries due to floods and landslides. For objectives 1.a.1 and 1.b the metadata is being defined. For indicator 1.a.2, Istat uses the "Share of expenses for health, education and social protection divisions on total public administration costs" and the "Proportion of bilateral official development assistance (APS) expenditure on essential services for developing countries (education, health and social protection)". In 2019, therefore, the Istat-SDGs Information System presents for the Goal, 25 measures covering 7 SDGs indicators with 6 identical measures, 14 partial and 5 contextual ones, produced working on the interconnection analysis.

4.4 SDGs network: the analyses

4.4.1 Analytical approach

The approach adopted in the SDGs on sustainable development is based on the idea that economic prosperity, environmental protection and social well-being are interconnected elements that cannot be addressed separately.

It is therefore an integrated approach, according to which: human well-being is intrinsically linked to the health of natural ecosystems; failure to protect them also poses a threat to long-term prosperity in development; addressing the inequalities in the distributive benefits of development is fundamental for global sustainable development; the management, maintenance and preservation of natural capital are essential aspects to guarantee a sustainable use of resources.

Consistent with the "no one left behind" principle and following what is required by the target 17.18, the possible disaggregations for each Goal were extended: by region, by city, by degree of urbanization, by gender, by citizenship, by presence of disability.

Gender, citizenship, disability can be explained in the analysis of the interconnections between objectives, targets and indicators: their potential information can improve the consistency of the analyses, making synergies and complementarities explicit.

Cross-sectional analyses related to the urban dimension, climate change, innovations and infrastructures as development engines, can explain further aspects related to interconnections, conceptual and due to coherence also with other international frameworks, such as the Sendai Framework or those related to Changes climate.

The interrelationships are analyzed by comparing the hypothesized by UN-IAEG-SDGs with the statistical information currently available in the Istat-SDGs Information System, making the links explicit through graphs.

4.4.2 Disability

In the 2030 Agenda, a concrete application of the "no one left behind" principle is represented by the inclusion of disability among the topics considered. According to the UN-IAEG-SDGs metadata, people with disabilities are explicitly mentioned in goals and targets six times: in education targets (target 4.5 and 4.a), growth and employment (target 8.5), inequalities (target 10.2), accessibility to green spaces in urban environments (target 11.7), as well as data collection and SDG monitoring (target 17.18). To highlight the importance of inclusion in order to ensure equal opportunities for quality of life and development, it was deemed appropriate to consider other words as well: nine times the word "vulnerability" occurs, six times the need for "universal access" and 31 times the access and availability of goods, services "for all".

Figure 4.5 - Statistical indicators for SDGs monitoraring. Interrelations to monitor according to 2030 Agenda to give information on people with disabilities

Istat has therefore integrated the information relating to people with disabilities into the current dissemination: in addition to the nine indicators producedin 2018 with the differentiation between presence of disabilities and non-disabilities, three other indicators have been added, for a total of 16 measures disaggregated also due to the presence of

disabilities. The classification variable used, chosen as a proxy for the condition of disability, is the Global Activities Limitations Indicator (GALI), currently used in population surveys in Europe, which makes it possible to estimate the number of people with severe limitations in daily activities.

For indicators on the possibility of attendance in schools of students with disabilities (4.3.1) and on schools with students with disabilities equipped with adapted computer workstations (4.a.1) students with disabilities are those who have a certification based on Law 104/92 and who have the support teacher.

The current availability of interconnected statistical information on disability is explained in the following graph.

Figure 4.6 - Statistical indicators for SDGs monitoring according to 2030 Agenda and available indicators to give information on people with disabilities

4.4.3 Migrations

In the 2030 Agenda, specific indicators classified "for migrants" are identified: the indicator 4.b.1, Volume of public development aid for scholarships by sector and type of study); 10.7.1, Cost for the employment of the employee in relation to the monthly income achieved in the destination country; 10.7.2, Number of countries with migration policies that facilitate migration and orderly, safe, regular and responsible mobility; 10.c.1, Costs of remittances as a percentage of the amount remitted; 16.2.2, Number of victims of trafficking in human beings per 100,000 inhabitants, by sex, age and form of exploitation. Two other indicators explicitly indicate a disaggregation related to migrations: 8.8.1 Frequency rates of fatal and non-fatal injuries, by gender and migrant status and 8.8.2 National compliance level of labor rights (freedom of association and collective bargaining), by gender and migrant status. A further 22 indicators, which do not explicitly require disaggregation by migration status, are however considered relevant by the UN to understand the condition of migrants in the host countries.

Figure 4.7 - Statistical indicators for SDGs monitoring according to 2030 Agenda and available indicators to give information related to migration

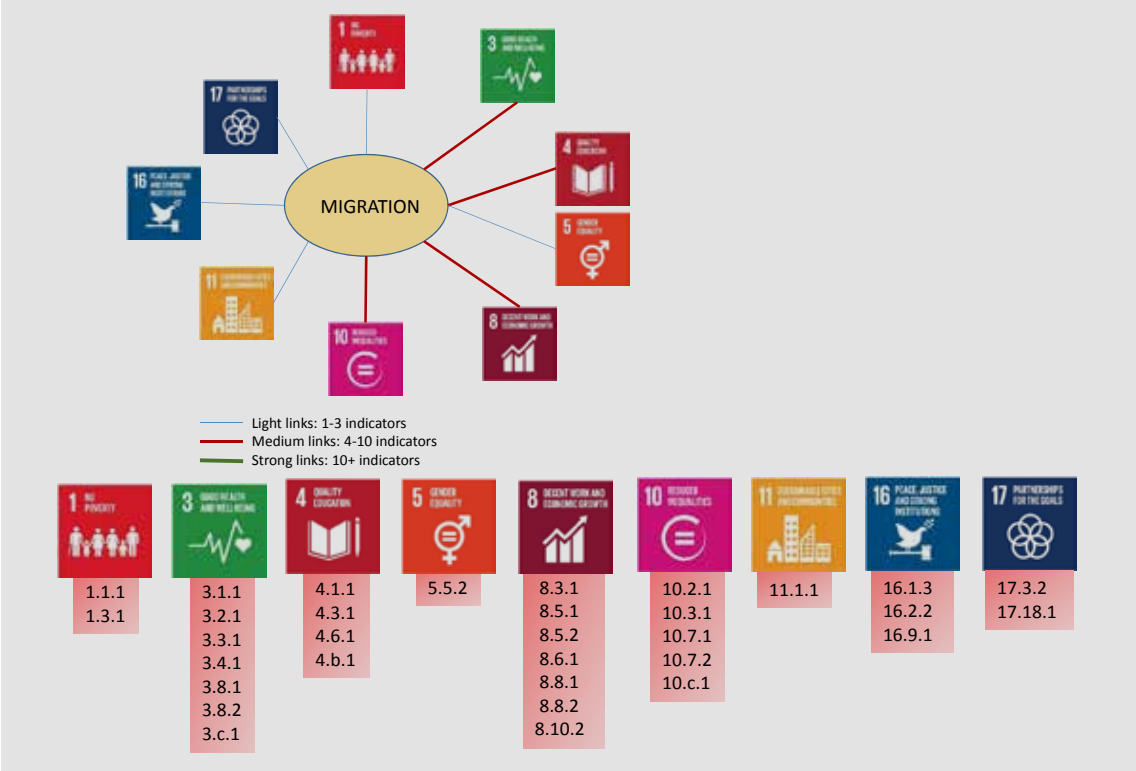
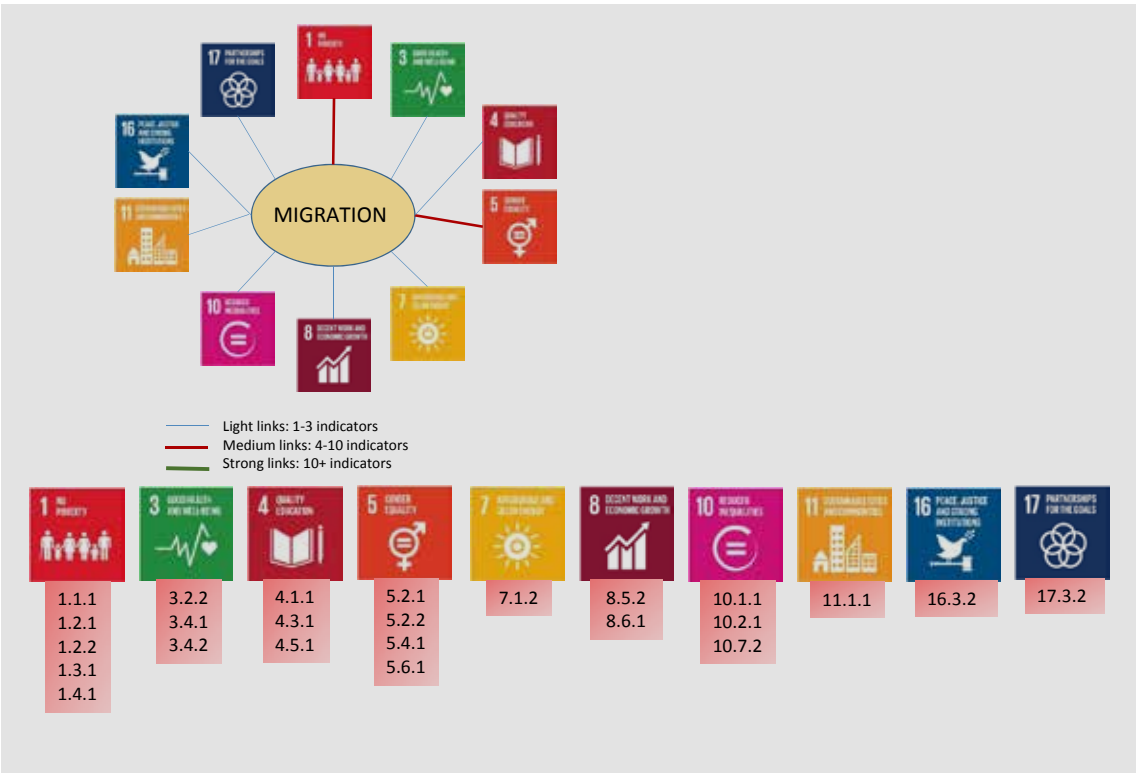


Figure 4.8 - Statistical indicators for monitoring SDGs. Interlinkages in the Istat SDGs Statistical System related to migration



The information available in the Istat SDGs Information System has been integrated through the insertion of specific indicators (the measures of 10.7.2 on permits issued and the acquisition of citizenship and the measures introduced on this occasion for 17.3.2, i.e. remittances to foreigners in Italy in millions of euros and in percentage terms) and with the most frequent use of breakdowns by citizenship. Soon, the breakdown by country of birth will also be considered. It was also considered appropriate to distinguish between first generation migrants and second generation migrants, using the variable (called in the "nationality" database) used by the Invalsi Statistical System to differentiate native students (born in Italy from Italian parents), the first generation students (born abroad from foreign parents) and second generation students (born in Italy from foreign parents). In the SDGs Istat information system there are a total of 52 measures that take into account the theme, corresponding to 24 UN-IAEG-SDGs indicators.

As suggested by the United Nations, in the statistical measures, aspects related to access to basic services - such as education, health services and social protection - are made available to consider how much migrants are integrated into the host society and whether they suffer any violence or discrimination.

4.4.4 Gender

Gender equality is a goal of considerable power to support the main promise of the 2030 Agenda: don't leave anyone behind.

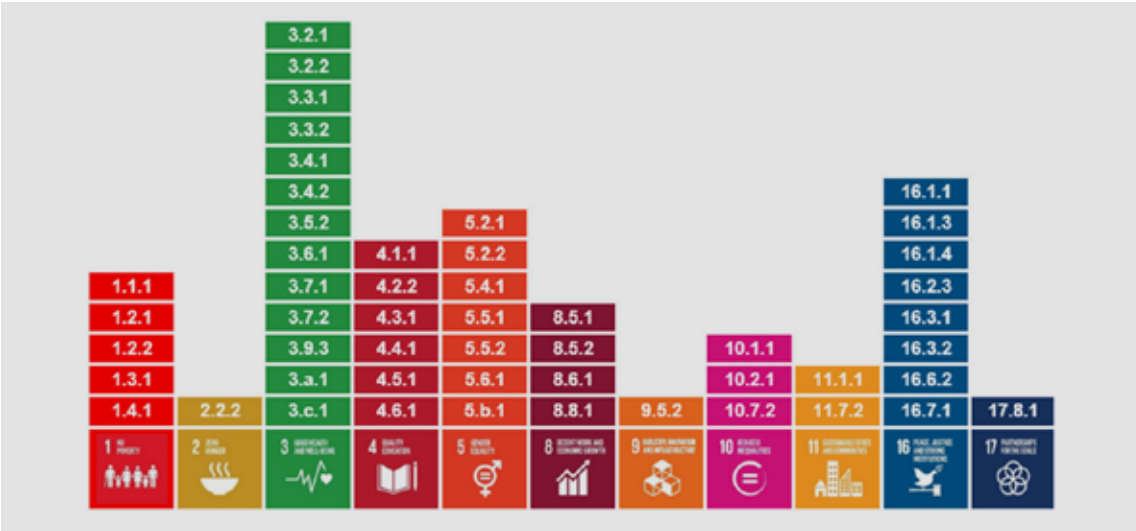
It is therefore essential to integrate the analysis and monitoring of sustainable development objectives into a gender perspective, making the necessary investments for the progress of gender statistics. In the following graph the "gender specific indicators" are identified, i.e. those indicators for which the UN-IAEG-SDGs metadata explicitly require the disaggregation by sex and/or for which they refer to gender equality.

Figure 4.9 - Statistical indicators for SDGs monitoring, gender specific indicators according to UN-IAEG-SDGs

In Italy, attention to gender equality in the production of statistical information declined by gender or linked to the issue of gender equality has long been a peculiar feature of Istat's activity. This has allowed that, since December 2016, on the occasion of the first dissemination of the SDGs information system for Italy, the classification variable "gender" is expected on a large number of indicators: 28 of the 66 published indicators, in fact, were gender specific indicators, of which 7 indicators in Goal 3 and 6 in Goals 5 and 16.

Thanks to the continuous expansion of the system, the updating of the indicators, and the constant attention to a greater disaggregation useful to monitor in a more precise manner the dynamics of the phenomena, today's publication can count, on 123 indicators provided, as many as 51 specific indicators by gender, which develop more than 80 gender-specific measures (Figure 4.10). Great importance for gender analyzes is set by the Objective 3 on Health with 13 indicators, the one on Justice and the Institutions with 8 indicators, the specific Goal on gender equality with 7 indicators and 4 on education with 6 indicators. The analysis of the dynamics and interrelations of these indicators can be the starting point for future integrated reflections on gender equality.

Figure 4.10 - Statistical indicators for SDGs monitoring, gender specific indicators according in the Istat SDGs Statistical System



4.4.5 Urban Sustainability

The theme of urban sustainability is fundamental for the 2030 Agenda. The concentration of the population in urban areas gives rise to substantial shares of energy consumption and carbon emissions and to the increasing pressure on the environment. Urban space is therefore a crucial development factor. The analysis of the theme does not only concern the Goal 11, but must be understood in a transversal manner considering, where possible, the degree of urbanization also for other indicators connected to sustainable development. Therefore, there are many dimensions to consider in a systemic, inclusive and integrated way, in order to analyze the issue of urban sustainability. According to the United Nations metadata related to the Goal 11 indicators, the network of connections between this and almost all the others is, in fact, very dense, with strong connections too. The most frequent connections are with the Goal 1 (Poverty), the Goal 13 (Climate change), the Goal 6 (Water)

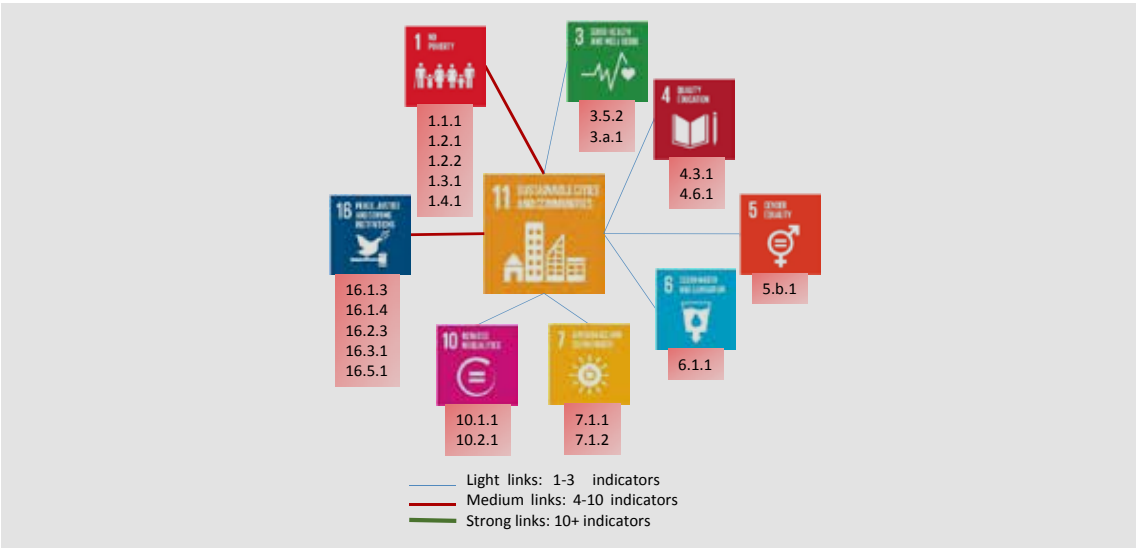
and the Goal 16 (Strong institutions and justice). Also important are the connections with the Goal 3 (Health), Goal 8 (Work and growth) and Goal 15 (Land) indicators.

Figure 4.11 - Statistical indicators for SDGs monitoring, Urban sustainability indicators and interlinkages according to UN-IAEG-SDGs

Widening the statistical information made available on the occasion of the current dissemination has allowed the development of indicators at the most detailed territorial level possible: from the country, to the regions, to the cities. By provincial capital there are 10 measures included in the Goal 11; there are 17 measures in Goal 1, 4, 7, 10 and 11 which consider the degree of urbanization; 15 measures are widespread in Goals 1, 5, 6, 7, 11 and 16 which consider the municipal typology subdivided according to metropolitan areas and the number of the population.

Further analytical insights will be developed in this regard in future editions.

Figure 4.12 - Statistical indicators for SDGs monitoring, urban sustainability indicators and interlinkages in the Istat SDGs Statistical system



4.4.6 Climate Change

To respond to the information challenge posed by the 2030 Agenda, it is essential to consider in an integrated and transversal manner also the statistical measurement issues related to climate change. The Goal 13 refers to urgent and substantial impact issues to combat climate change and its consequences. Rising temperatures in the atmosphere and the ocean, changes in precipitation regimes, rising sea levels and acidification are climate changes that have consequences for the environment and ecosystems, but also for the socio-economic system, damaging the territory with significant consequences in productive activities, in infrastructures, for people. The anthropogenic pressures generated by both economic activities - such as agricultural and forestry practices, industrial processes and service activities - and those of transport and household heating have concrete effects. Climate change is also the cause of the escalation of some climatic and hydro-meteorological calamities. To act against climate change, the transition to a greener economy must be guaranteed, combining social well-being, environmental protection and economic competitiveness.

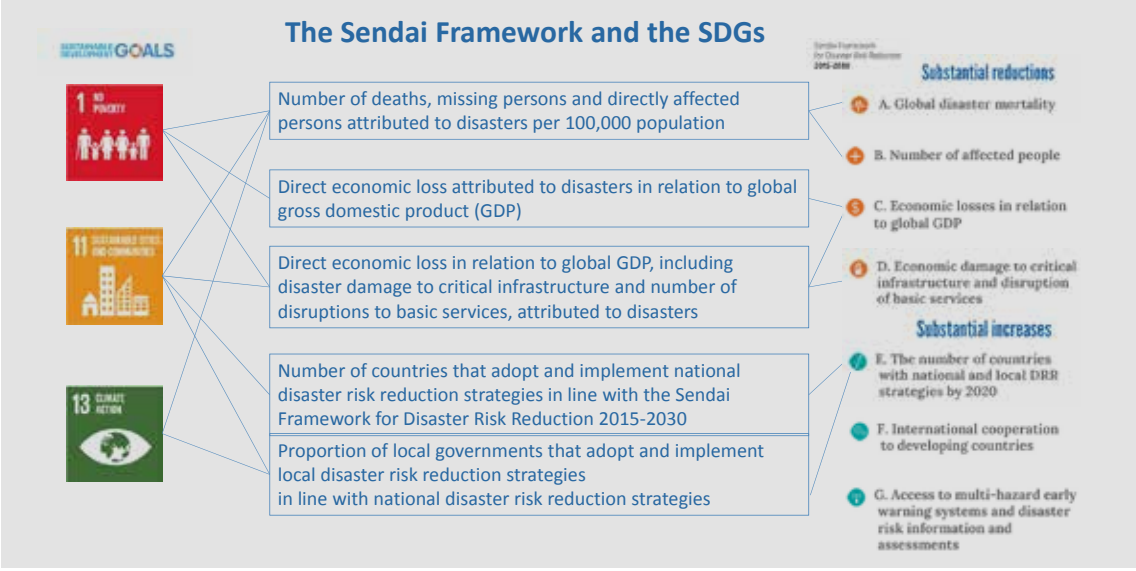
The United Nations Framework Convention on Climate Change and related agreements, such as the Kyoto Protocol and the Paris Agreements, the Sendai Framework for Disaster Risk Reduction 2015-2030 have translated, in terms of information demand, into different frameworks international statistical indicators that have strong interconnections with the UN-IAEG-SDGs indicators.

In terms of cause or effect, issues related to climate change are, therefore, present in almost all sustainable development objectives.

Goal 13 targets are aimed at developing and integrating measures to combat climate change into national policies, strategies and plans, to increase the resilience of the territories to climate-related risks and natural disasters.

Three of the objectives of 2030 Agenda include some of the indicators of the Sendai Framework for risk reduction from disasters, as well as in Goal 13, present in the Goal 1

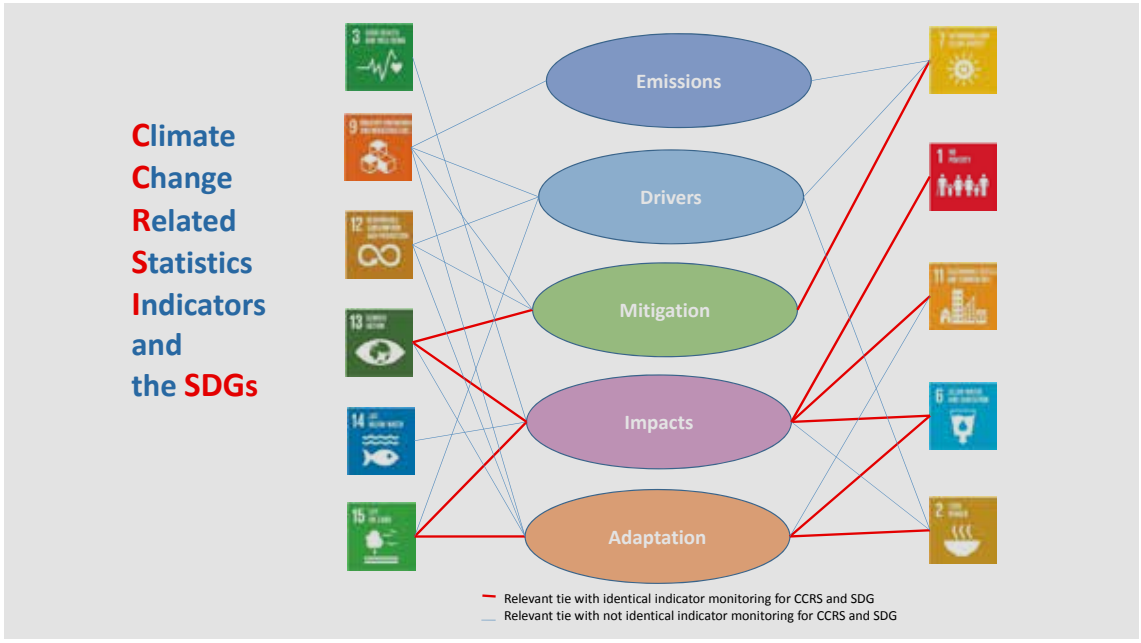
Figura 4.13 - Interlinkages among SDGs and Sendai Framework



(Poverty), to consider the vulnerability connected to environmental risks and in Goal 11 (City) to consider degraded, cemented and densely populated urban areas.

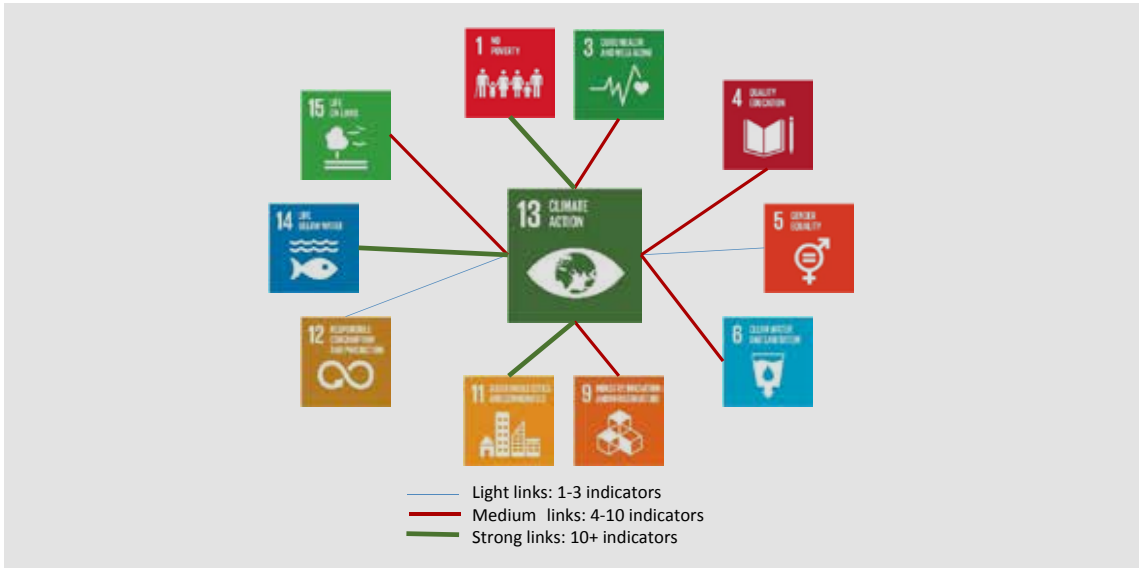
Seven Goals are interlinked to UNECE statistical indicators for Climate Change monitoring.

Figure 4.14 - Interlinkages among SDGs and UNECE Climate Change Related Statistics indicators



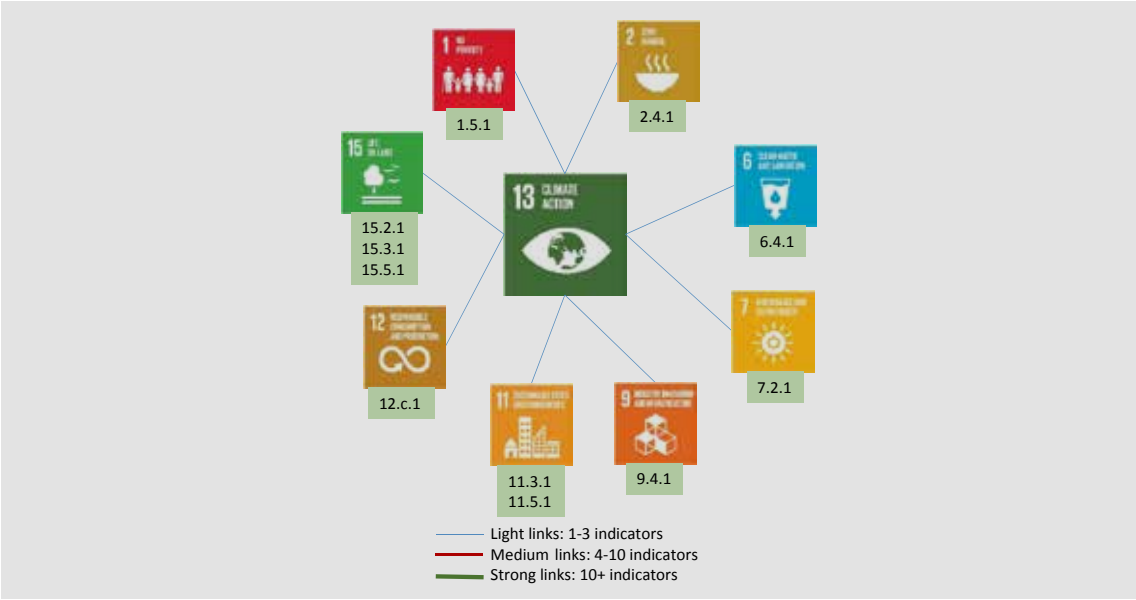
According to the UN-IAEG-SDGs metadata, the network of connections between the Goal 13 and the others highlights numerous links, of which the most frequent are the Goal 1 (Poverty), the Goal 11 (City) and the Goal 14 (Sea). Also important are the interrelations with the indicators of the Goal 15 (Earth), of the Goal 6 (Water), of the Goal 9 (Infrastructure and industry) and with the Goal 4 (Education) and 3 (Health), which concern the well-being of people.

Figure 4.15 - Statistical indicators for SDGs monitoring, Climate Change indicators according to UN-IAEG-SDGs



In the Istat-SDGs information system, there are 11 indicators that develop 27 statistical measures. Although a considerable effort has been made so far in this regard, it is certainly a domain in which the development of quality statistical information offers the possibility of having significant areas for improvement.

Figure 4.16 - Statistical indicators for SDGs monitoring, Climate Change indicators and interlinkages in the Istat SDGs statistical system



4.4.7 Research, Innovation and Infrastructure

The Goal 9 has links with a multiplicity of objectives and targets, given that it focuses on elements - infrastructure, industrialization, research and innovation - that can be considered the engine of economic growth and a lever for competitiveness, as well as enabling factors for social and environmental development.

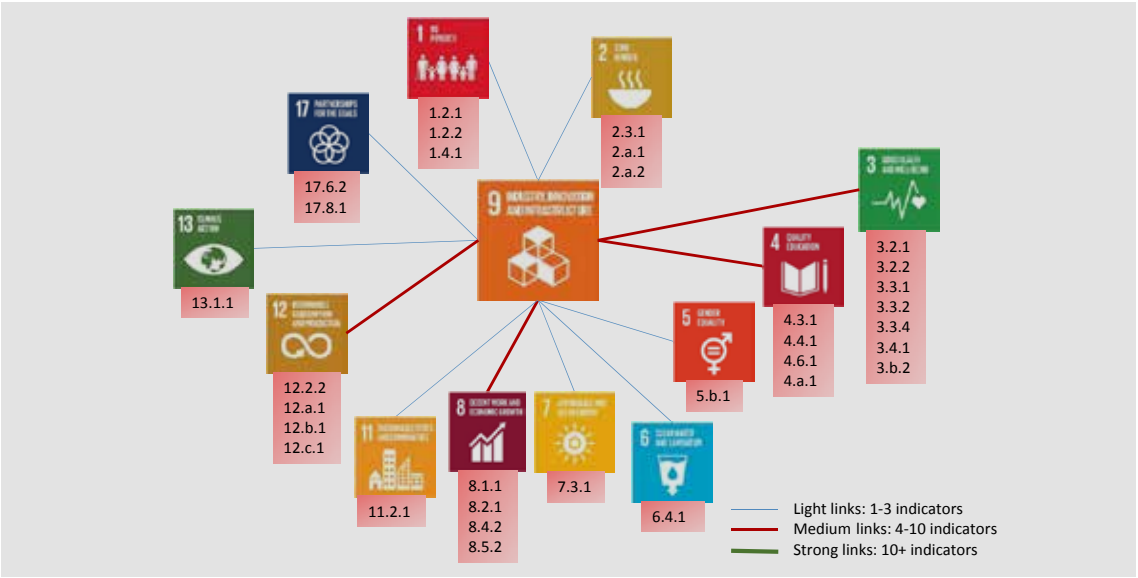
The most important role is represented by the indicators associated with scientific research, technological development and innovation (target 9.5), since these represent the tools through which to achieve many of the objectives of sustainable development: from the improvement of morbidity and mortality to the lengthening of the life expectancy thanks to the results of medical research (Goal 3), the expansion of technological innovation in agriculture (Goal 2), energy (Goal 7) and marine (Goal 14) to the promotion of cooperation for capacity building and extension of scientific and technological knowledge, particularly in developing countries (Goal 12 and 17). Development of quality infrastructures (target 9.1) and increase in productivity and efficiency in the use of resources (target 9.4) are connected with many indicators relating to Goals 1 and 11 (access to transport), 2 (rural infrastructure and agricultural productivity), 6 (efficiency of water distribution networks), 7 (energy intensity and energy distribution infrastructures), 8 (labor productivity), 12 (material consumption). The adoption of technologies and production processes that are less harmful to the environment, referred to by the 9.4 target, impacts, in terms of CO2 emissions (indicator 9.4.2), on the indicators concerning air quality (Goal 11) and the climate change (Goal 13). The support

and strengthening of the industry (target 9.2), an important source of income and work, is functional to combat poverty (Goal 1) and to economic growth and employment (Goal 8), while ICT and, in in particular, the Internet (to which the 9.c target audience is targeted), in addition to providing those basic services for citizens and the education required by the Goals 1 and 4, are tools to allow fair and inclusive access to information, to knowledge, market and financial services, as called for by the Goals 2, 4, 5, 11 and 16.

Figure 4.17 - Statistical indicators for SDGs monitoring, Innovation, research, infrastructure indicators and interlinkages according to UN-IAEG-SDGs

The abundance of interconnections exposed, which could be exploited for statistical purposes in order to better illustrate and monitor the political aims of the Agenda, characterizes the Goal 9

Figure 4.18 - Statistical indicators for SDGs monitoring, Innovation, research, infrastructure indicators and interlinkages in the Istat SDGs statistical system



4.5 SDGs network: monitoring the Italian National Sustainable Develpoment Strategy

The network of the SDGs of 2030 Agenda can be analyzed considering the interrelations expressed in the National Sustainable Development Strategy (NSDS). It is useful, in fact, to consider how national SDGs can be achieved in a systemic way, and how it is possible to identify actions that take into account the multiple relationships existing between the different dimensions of sustainability.

The available Istat SDGs information system measures , in fact, constitute the natural input for the measurement of the NSDS and were considered in the activities carried out by the Working Technical Table on Indicators for the implementation of the National Sustainable Development Strategy, with the objective to define a small and representative core subset of indicators for its monitoring.

The Technical Table defined and agreed upon the criteria and the methodological approach necessary to identify a set of indicators relevant for the monitoring of the NSDS.

In order to highlight the interconnections in a systematic way and to take into account the key principles guiding the 2030 Agenda, a first experimental application has been represented in the following graph, in compliance with the methodological approach and the identified criteria illustrated in Chapter 2.

Figure 4.19 - The Network of Istat SDGs Information System to monitor the NSDS

Sustainability, in fact, must be considered, in a global and national, integrated perspective, making explicit the interactions between the social, economic, environmental and institutional domains also for monitoring: the graph highlights its complexity. The steps taken to achieve progress in a Goal can be reinforced or can compete with those established for another Goal.

In perspective, the analysis, given as example, of the interrelations between objectives, targets and national quantitative indicators, can help to consider synergies and trade-offs between adopted policy measures and to render explicit any “reinforcement or balancing” actions between thematic areas and interconnected issues.

4.6 Future analyses

Sustainability is intrinsically complex and there is not only one way to define sustainability paths.

Interconnected strategies are needed for regions, cities, citizens, communities, businesses and civil society: the transition from a linear economy to a circular economy, in order to re-use resources, reduce recourse to natural capital of the planet and at the same time the emissions of greenhouse gases; the guarantee of sustainability from the producer to the consumer; energy and mobility issues; technological, structural and demographic evolution in a more interconnected world that guarantees sustainable equality.

For this reason, the systemic and integrated approach seems to be the most appropriate one, declined considering sustainable urban development, climate change, factors of economic growth and social and environmental development, issues related to sustainable equality.

Explaining, highlighting, analyzing the interconnections between Goal, Target and indicators can facilitate in understanding the dimensions and complexity of sustainable development, it can help in making the best use of the statistical information available by exploiting interconnections to ensure the highest possible coverage of all Targets of Goals; it can facilitate choices related to competing strategies or actions.

The activities planned by Istat foresee a further development of this type of analysis, to consider further specific thematic routes and to continue the current analyzes. After completing the conceptual analysis aimed at mapping the existing interconnections considering other thematic paths not yet represented, further studies will be carried out using historical and geographical data, and analysis of the existing interconnections will be activated, taking into account the statistical correlations between the indicators.