H2020/NAP indicator assessment

Waste

Libya

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European Environment Agency

H2020 / NAPs Indicators	
Thematic area Waste	**Date:** 27/04/2020, 10/07/2020 **Author(s):** Mohamed Hamouda, Emanuele Bigagli
Policy theme 1. Municipal Waste Generation	
Indicators: 1.1 Total Municipal Solid Waste (MSW) generation 1.A Municipal waste composition 1.B Plastic waste generation per capita 1.C % of population living in Coastal Areas 1.D % of Time of Tourist visitors in Coastal Areas / Population in Coastal Areas	

Key policy question: *What is the status of municipal waste generation in Libya*?

Key messages

- Municipal solid waste (MSW) generation in Libya has almost doubled in the last decade, from about 1,973 thousand tonnes/year in 2010 to about 3,532 thousand tonnes/year in 2019, driven by population growth. Accordingly, MSW generation per capita increased from about 347 kg/year to about 540 kg/year during the same period.
- MSW in Libya is mainly composed of organic waste (about 70%), followed by paper and carton (about 7.5%) and plastic waste (about 5.50%).
- Plastic waste generation has been increasing in the past decade in Libya, to reach 216.2 thousand tonnes/year in 2019, corresponding to about 33 kg per capita/year. So far, there are no laws or legislation prohibiting the manufacture, import, marketing and use of plastic bags.
- The majority of MSW is generated in highly populated coastal areas, which host about 72% of total national population. Due to the current political instability, since the outbreak of the Arab spring in 2010, the number of tourists and their impact on MSW generation have been insignificant.

Key figures/Tables

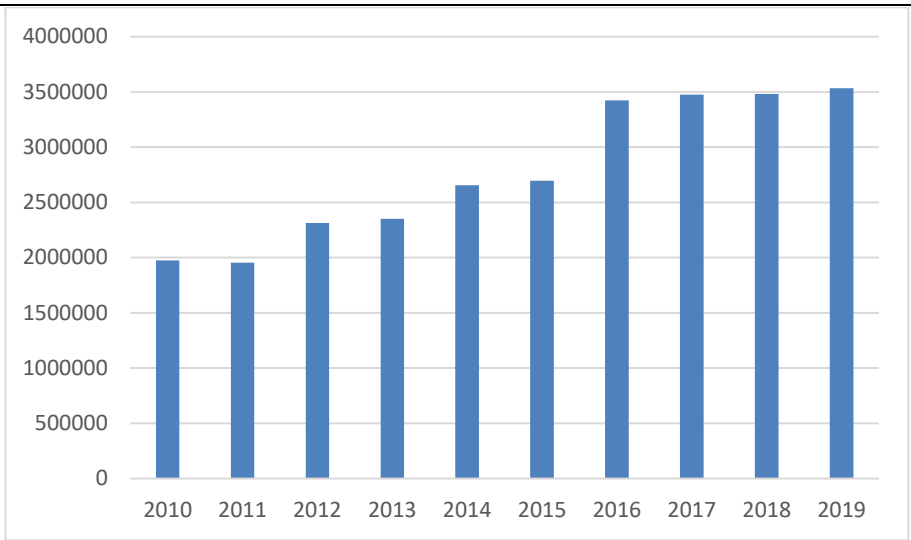

Figure 1. Municipal Solid Waste (MSW) generation in Libya from 2010 to 2019 (in tonnes).

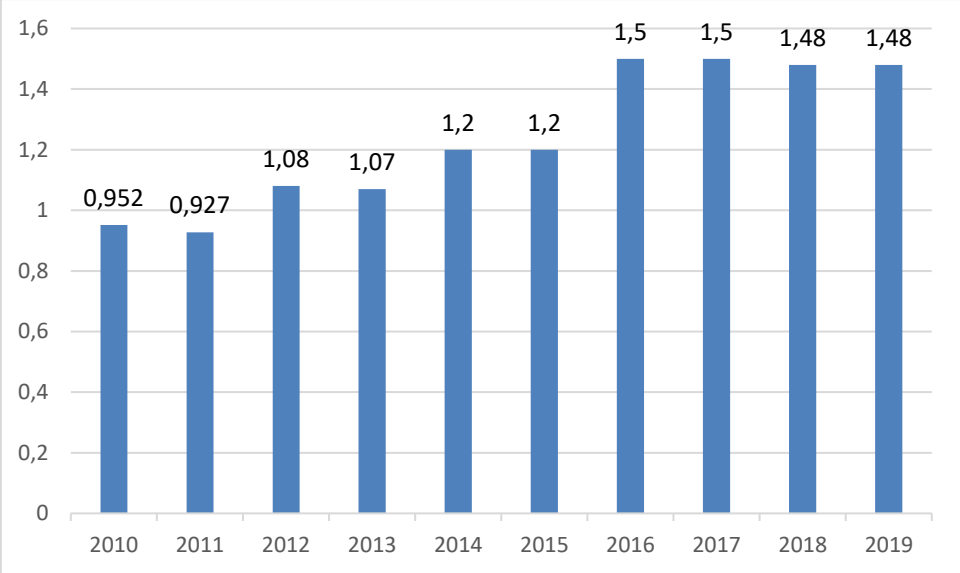

Figure 2. MSW generation per capita/day from 2010 to 2019 (in kg).

Specific assessment text

Municipal solid waste (MSW) generation has increased in the last decade in Libya, driven by growing population, from about 1,973 thousand tonnes in 2010 to 3,532 thousand tonnes in 2019. This increase is even more evident in the period 2016-2019. Accordingly, MSW generation per capita ranged from 0.95 kg/day (corresponding to about 347 kg per capita/year) in 2010 to 1.48 kg/day (corresponding to about 540 kg per capita/year) in 2019. The majority of MSW is generated in areas with a high concentration of population, more specifically in the coastal cities, which account for 72% of the national population.

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The values of MSW generation per capita for the years 2017-2019 have been stable at around 1.48-1.5 kg/day. This was due to the unstable political situation and the war around the city of Tripoli and in the southern part of the country.

Bashir's report (November 2004) indicated a generation of MSW in rural areas of 0.375 kg per capita/day, based on the average values of the two rural cities of Tajoura and Jfara.

References in key assessment text

Methodology for indicators calculation

All data were calculated based on the results of several studies, and the results of the census published by the National Bureau of Statistics.
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:
https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment

Data issues

The values of MSW generation per capita were estimated, due to the limited availability of data especially for the years 2017-2019 (given the unstable political situation and the war).

Specific policy questions: *What is the composition of municipal solid waste in Libya?*

Specific figure(s)

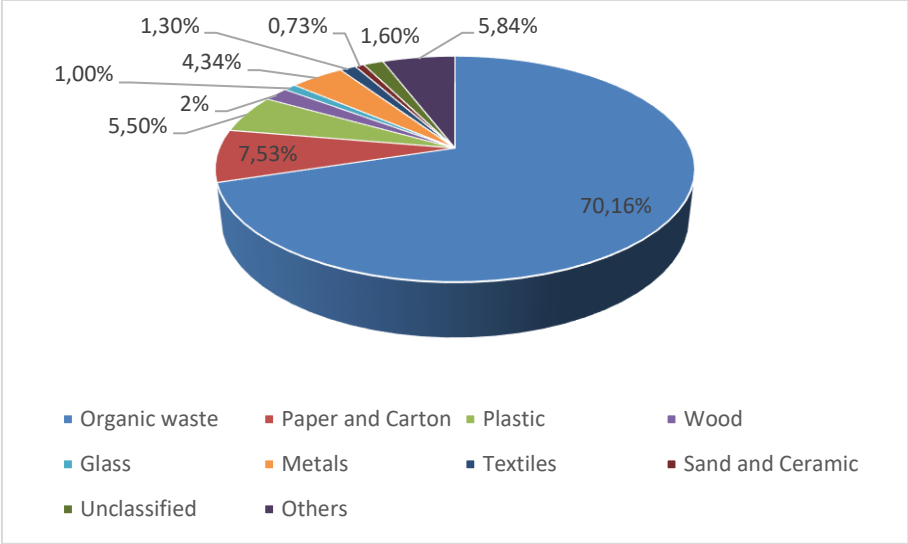


Figure 3. MSW composition in Libya.

Specific assessment text

A breakdown of MSW composition in Libya shows the predominance of the organic fraction, corresponding to about 70% of all the MSW generated, followed by paper and carton (about 7.5%) and plastic waste (about 5.50%).

References in specific assessment text

Environmental study on waste in Libya, submitted by: Blunt Co., Ltd. in cooperation with Iman, commissioned by the Environment Public Authority. Libya. June 27, 2002.
Draft Report on Municipal Solid Waste Management in Tripoli, EGA, 2010.

Methodology for indicators calculation

Data issues

The temporal coverage of the data available is limited to the years 2002 and 2010.

Specific policy questions:

Is generation of plastic waste per capita decreasing/ increasing?

Specific figure(s)

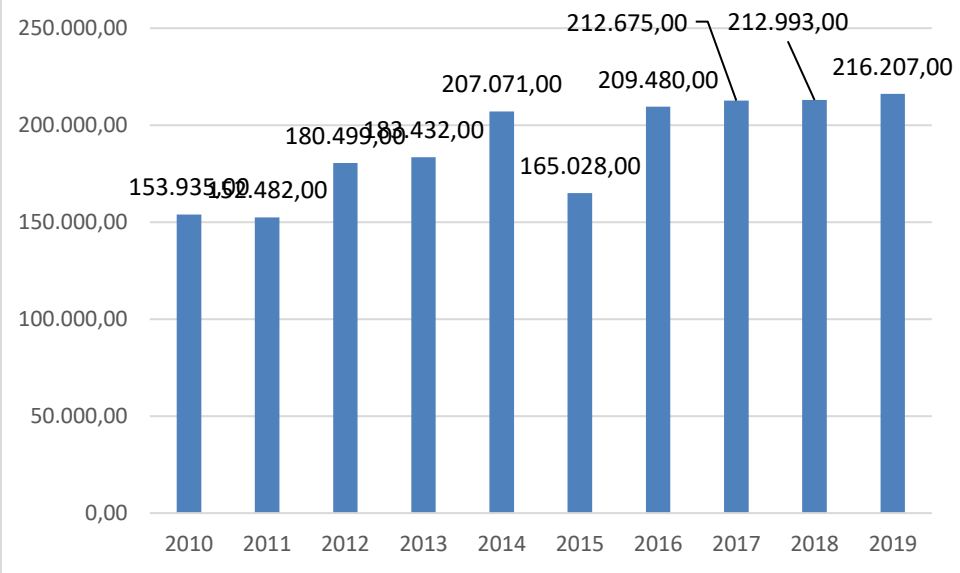


Figure 4. Plastic waste generation in Libya from 2010 to 2019 (in tonnes).

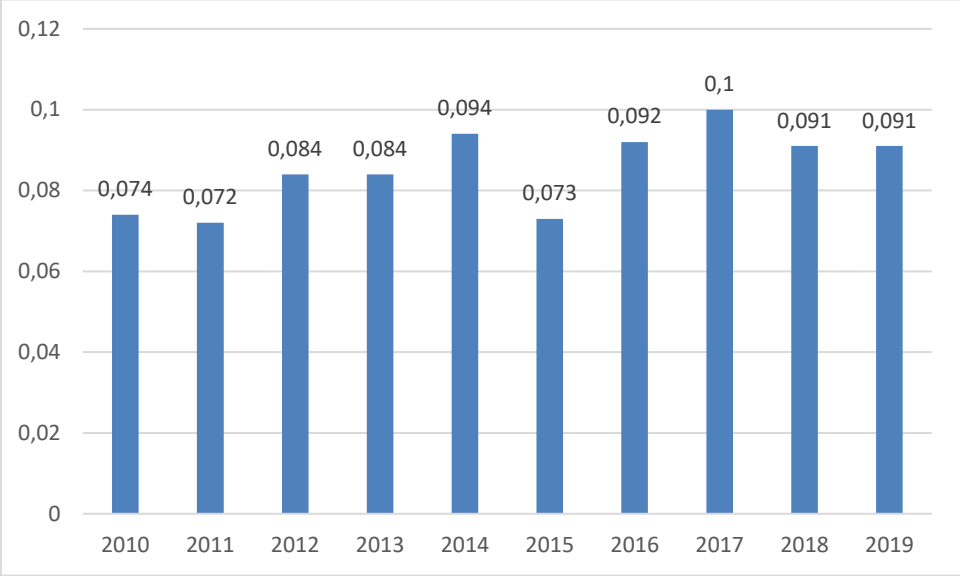


Figure 5. Plastic waste generation per capita in Libya from 2010 to 2019 (kg/day).

Specific assessment text

Plastic waste generation has been increasing in the past decade in Libya from 153.9 thousand tonnes in 2010 to 216.2 thousand tonnes in 2019. Accordingly, plastic waste generation per capita increased from 0.07 kg/day (corresponding to about 26 kg/year) in 2010 to 0.09 kg/day (corresponding to about 33 kg/year) in 2019. This increase could be explained by the wide spread of small factories producing cheap plastic bags, the increase in the consumption of drinking bottles, and the reopening of beaches during the long summer season in 2017. In parallel, the decrease in 2015 to 0.73 kg/day could be due to the start of recycling programmes where plastic waste is not mixed with MSW.

So far, there are no laws or legislation prohibiting the manufacture, import, marketing and use of plastic bags.

References in specific assessment text

Data were calculated by the EGA based on several publications by EGA and scientific studies.

Methodology for indicators calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:
https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment

Data issues

The data were calculated based on specific studies, and not as part of systematic data collection activities.

Specific policy questions:
What is the percentage of people living by the coast? vs total population in Libya?

Specific figure(s)

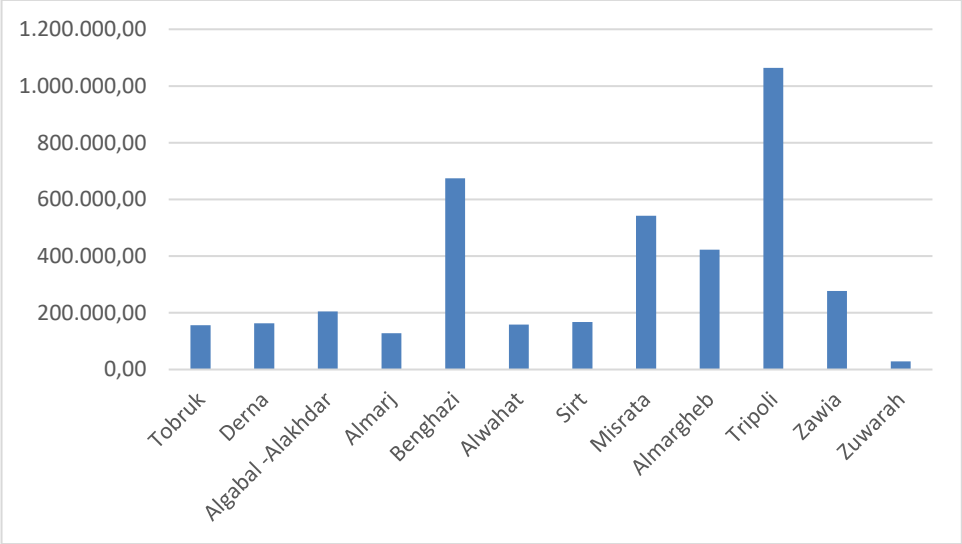


Figure 6. Population in coastal cities.

Specific assessment text

Figure 6 shows the population of coastal cities in Libya. As reported by Al-Afas et al. (2019), the population of the coastal cities was 4,245,964, corresponding to about 72% of the total national population, equal to 5,907,149 according to the National Census data of 2006.

References in specific assessment text

Measuring Sustainable Development Indicators in Libya. Al-Afas (Team Leader). Study presented with support and follow-up from the Natural Sciences and Technology Research Authority, 2010.

Methodology for indicators calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:
https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment

Data issues

Specific policy questions: *Is the number of tourists increasing?*

Specific figure(s)

Specific assessment text
Since the outbreak of the so-called "Arab Spring" in 2010, the number of tourists in Libya is insignificant.
References in specific assessment text
Methodology for indicators calculation
Data issues
No data availability from 2010 onwards, due to the unstable political situation.

H2020 / NAPs Indicators	
Thematic area WASTE	**Date:** 10/07/2020 **Author(s):** Mohamed Hamouda, Emanuele Bigagli
Policy theme 2. "Hardware" of waste management	
Indicators: 2.A Waste collection 2.A.1 Waste Collection Coverage 2.A.2 Waste Captured by the system 2.B Environmental control 2.B.1 % of waste to uncontrolled dumpsites 2.B.2 Uncontrolled dumpsites in Coastal Areas 2.B.3 Waste going to dumpsites in Coastal Areas 2.C Resource recovery 2.C.1 % of plastic waste generated that is recycled	

Key policy question: *is municipal solid waste management improving?*

Key messages

- The current war and political instability are having a negative impact on MSW management in Libya. The MSW collection coverage in Libya has been decreasing in the last years from about 66% of MSW generated in 2010, to about 50% in 2018.
- MSW management in Libya is performed at local level, and MSW is normally dumped in one of the 28 landfill sites that exist in the country, and covered with sand. There are no sanitary landfills in Libya. The unsanitary disposal of waste has led to significant problems such as soil and groundwater pollution
- The recycling rate of plastic is estimated to be at 4% of all plastic waste generated. Cardboard and paper are collected and sent for recycling to Tunisia.
- The ongoing disposal of MSW to poorly engineered dump sites is unsustainable, and will not meet the growing demands of the increasing population and urbanization, currently experienced in the coastal cities. The lack of resources and services is the main factor impacting operational MSW management processes, and is worsened by the ongoing civil war/conflict.

Specific policy questions: *what is the progress of municipal solid waste collection? How much solid waste is collected?*

Specific figure(s)

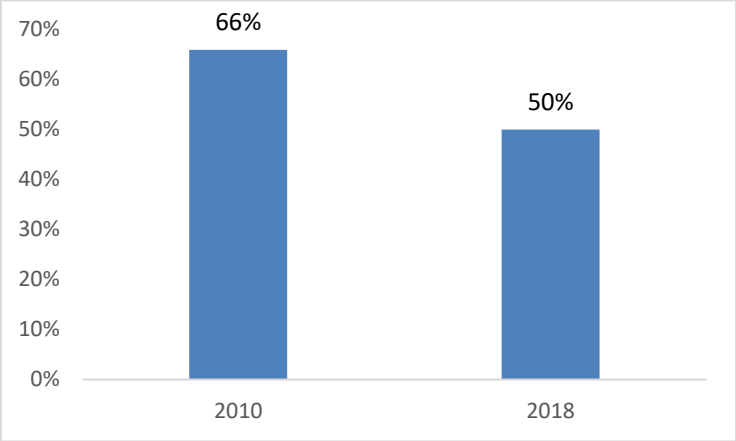


Figure 7. MSW collection rate in Libya in selected years.

Specific assessment text

MSW collection rate in Libya was approximately 66% of MSW generated in 2010, and dropped significantly in 2018 to about 50%, mainly due to the current political situation.
Each municipality has started their own strategies and set their own targets to manage their own waste. There might be some problems in the future related to finding suitable sites for disposal. In fact, the ongoing war has postponed the works for a disposal site in the Great Tripoli area, which is designed to serve about 15 municipalities.

References in specific assessment text

Data provided by the EGA.

Methodology for indicators calculation

The methodology followed for indicator calculation is described in the H2020 indicator specification sheets:
https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment

Data issues

Specific policy questions: *Amount of municipal solid waste captured by the management system and delivered to controlled landfills.*

Specific figure(s)

Specific assessment text

All the collected waste in Libya goes to dumpsites, and there are no sanitary landfills.

References in specific assessment text

Data provided by the EGA.

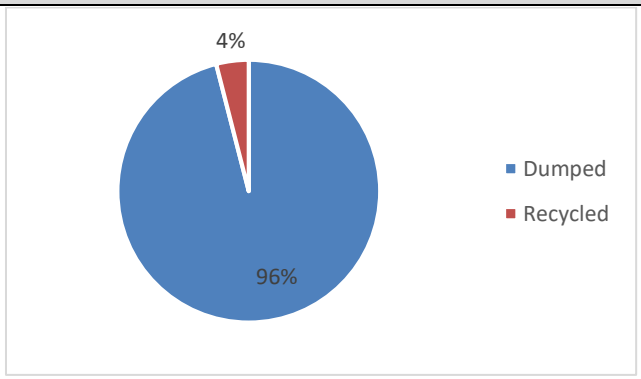
Methodology for indicator calculation

Data issues

Specific policy questions: *what are the quantities of municipal solid waste going to uncontrolled dumpsites?*
Specific figure(s)
Specific assessment text
All the collected waste in Libya goes to dumpsites, and there are no sanitary landfills.
References in specific assessment text
Methodology for indicators calculation
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment
Data issues

Specific policy questions: *how many uncontrolled dumpsites in the coastal area-relevant to Mediterranean?*
Specific figure(s)
Specific assessment text
In Libya there are a total of 28 dumpsites active during the period 2002-2019.
References in specific assessment text Environmental study on waste in Libya, submitted by: Blunt Co., Ltd. in cooperation with Iman, Commissioned by the Environment Public Authority. Libya. June 27, 2002. DRAFT REPORT on Municipal Solid Waste Management in Tripoli, EGA, 2010.
Methodology for indicators calculation
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment
Data issues

Specific policy questions: *how much municipal solid waste is dumped in uncontrolled dumpsites in the coastal area relevant to the Mediterranean?*
Specific figure(s)
Specific assessment text
In Libya, the MSW collected goes to dumpsites; there are no sanitary landfills, rather dumping sites where waste is covered with sand. The quantity of MSW dumped in uncontrolled dumpsites in the coastal areas in Libya depends on the time and efficiency of MSW collection, which is currently very weak due to the security situation in the country. It can be estimated that about 10-20% of the MSW generated in about 20 coastal cities is disposed of in uncontrolled dumpsites in coastal areas, shared by more than one city.
References in specific assessment text Environmental study on waste in Libya, submitted by: Blunt Co., Ltd. in cooperation with Ima, Commissioned by the Environment Public Authority. Libya. June 27, 2002. DRAFT REPORT on Municipal Solid Waste Management in Tripoli EGA n 2010.
Methodology for indicators calculation
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment
Data issues

Specific policy questions: *Are recycling rates of municipal solid waste in your country increasing?*
Specific figure(s)
 Figure 8. Share of plastic waste generated that is recycled (%).

Specific assessment text
The recycling rate of plastic is increasing and is estimated to be 4% of all plastic waste generated. Cardboard and paper are collected and sent for recycling to Tunisia.
References in specific assessment text Draft Report on Municipal Solid Waste Management in Tripoli EGA n 2010.
Methodology for indicators calculation
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment
Data issues
Limited temporal coverage of the data available.

Specific policy questions: *what is the progress in plastic waste generated and that is recycled (formal and informal)?*
Specific figure(s)
Specific assessment text
As mentioned above, the recycling rate of plastic were estimated to be at 4% of all plastic waste generated. There is a marked progress in the separation of waste and recycling. The Municipality of Tripoli is currently distributing containers for waste separation, and special containers for collecting plastic waste, thanks to the support of both the government and NGOs.
References in specific assessment text Draft Report on Municipal Solid Waste Management in Tripoli EGA n 2010. Dr. Basir's Report on "Management of Solid Waste in the Great Jamahiriya" Presented in a workshop "Recent Trends in the management of contaminating waste" November 2004 in Egypt
Methodology for indicators calculation
The methodology followed for indicator calculation is described in the H2020 indicator specification sheets: https://eni-seis.eionet.europa.eu/south/areas-of-work/indicators-and-assessment
Data issues
The temporal coverage of the data available is limited to the year 2010.