

# Guide for EEA map layout

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Version 8

## Version management and approval

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3	20-01-2006	Projections and extents for all map templates changed and adjusted to 52N10E (use of 52N20E stopped), Chapter 2 & 6. Changes to EEA page layout had implications for map/legend sizes, Chapter 7.	Jon Jeppesen, Mette Lund
4	22-12-2008	General revision of the text. New map extents in Chapter 6. Review comments from Thor Jessen, Ana Sousa and Sheila Cryan.	Jon Jeppesen, Andres Bastholm, Sebastián Petit, Mette Lund

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5	20-09-2011	General revision of the EEA GISguide ver. 5. The content has been divided into two documents: <ul style="list-style-type: none"> <li>• ‘Guide for EEA map layout’</li> <li>• ‘About the EEA reference grid’</li> </ul>	Sheila Cryan, Carsten Iversen
6	22-01-2018	General revision of the EEA GISguide ver. 6	Carsten Iversen
7	23-02-2021	General revision of the EEA GISguide ver. 7	Carsten Iversen
8	01-09-2023	Map templates data replaced with GISCO data. Major changes and cleaning up in the templates General revision of the EEA GISguide ver. 8	Carsten Iversen

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# Foreword

This paper provides guidance on making static maps using the EEA templates and background GIS data.

The target audience are the EEA in-house GIS operators making or re-producing static maps for EEA reports, indicators, briefings, presentation and for the web. The secondary audience are the external experts and ETC's preparing "ready-to-use" thumbnails or draft maps. The tailored background data in the templates is based on GISCO/EuroBoundaryMaps ([eurogeographics.org](http://eurogeographics.org)). Templates are free to use with proper acknowledgement: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO

Any comments and questions can be forwarded to the EEA SDI Team: [sdi@eea.europa.eu](mailto:sdi@eea.europa.eu)

# Contents

<b>1. MAP EXTENTS USED BY THE EEA .....</b>	<b>6</b>
1.1. COVERAGE OF MAP EXTENTS .....	6
1.2. ILLUSTRATIONS OF EEA MAP EXTENT SERIES .....	7
<b>2. EEA LAYOUT .....</b>	<b>15</b>
2.1. A4-STANDARD SIZE FOR MAPS .....	15
2.2. SIZE FOR MAPS PRODUCED FOR A5-FORMAT .....	16
<b>3. STANDARD ELEMENTS/FEATURES IN MAPS .....</b>	<b>17</b>
3.1. LEVEL OF GENERALISATION .....	17
3.2. BACKGROUND LAYERS .....	17
3.3. THEMATIC LAYERS .....	18
3.4. STANDARD LAYER ORDER .....	18
<b>4. COLOUR AND GRAPHICS DEFINITIONS .....</b>	<b>19</b>
4.1. LEGEND .....	20

# 1. Map extents used by the EEA

The EEA has developed a set of map extents to cover the ‘standard’ needs. The map extents are predefined in templates for ArcMap and ArcGIS Pro. Templates and data can be downloaded from here: [EEA map templates for static maps](#)

The EEA map templates are based on open and free data from these sources:

- Eurostat/GISCO (<https://ec.europa.eu/eurostat/web/gisco>)
- EuroGeographics (<https://www.mapsforeurope.org/datasets/euro-global-map>)

Administrative boundaries delivered by Eurostat/GISCO is furthermore based on data provided by FAO and TurkStat. All organisations must be acknowledged in the maps made based on these data.

The data provided by Eurostat/GISCO and EuroGeographics has been tailored to meet the EEA requirements for static maps to be used in various EEA products. For the sake of convenience, the tailored data is called “EEA map data”. The primary goal with the EEA map templates and map data is to provide a ‘ready-to-use’ layout based on cartographic principles. The EEA map data is not suitable for computation and data analysis.

The EEA handles geographic data from many institutions and sources and presents them as maps in different publications and on the web.

There are several benefits from the predefined templates:

- Harmonious and consistent appearances of maps across products and time;
- Reducing the cost for map production - map production is easier and more effective;
- Ensuring maps are made in a ‘scientific’ style rather than illustrations with personal touch;
- Map sizes fit EEA standard layouts;
- High degree of reusability – the same map and data can be used in different productions;
- The map extents cover some 90-95% of the total needs for standard maps in reports and information material;

## 1.1. Coverage of map extents

The map templates are provided in scale 1:1mio suitable for detailed mapping and in scale 1:10mio suitable for mapping at European level:

- EEAtemplate\_1\_01M Europe in scale 1:1mio
- EEAtemplate\_1\_10M Europe in scale 1:10mio
- EEAtemplate\_2\_01M Europe in scale 1:1mio + Canary Islands, Madeira, Azores, Malta, Liechtenstein, and the French Overseas territories in scale 1:1mio
- EEAtemplate\_2\_10M Europe in scale 1:10mio + Canary Islands, Madeira, Azores, Malta, Liechtenstein, and the French Overseas territories in scale 1:1mio

- EEAtemplate\_3\_01M Europe in scale 1:1mio + Canary Islands, Madeira, Azores, Malta, Liechtenstein, Svalbard, Jan Mayen, and the French Overseas territories in scale 1:1mio
- EEAtemplate\_3\_10M Europe in scale 1:10mio + Canary Islands, Madeira, Azores, Malta, Liechtenstein, Svalbard, Jan Mayen, and the French Overseas territories in scale 1:1mio
- EEAtemplate\_4\_01M Europe in scale 1:1mio + Canary Islands, Madeira, Azores, Malta, and Liechtenstein in scale 1:1mio
- EEAtemplate\_4\_10M Europe in scale 1:10mio + Canary Islands, Madeira, Azores, Malta, and Liechtenstein in scale 1:1mio

## 1.2. Illustrations of EEA Map extent series

The following pages present the series of map extents. All map extents are prepared with the legend and a map-scale placed inside the map. Outside coverage can be queried in data to cover different groupings such as EU27, EEA32, EEA38, EFTA etc. By default, the extents visualise ‘EU27\_2020’

### Extent 1-01mio:

The data and the template are defined in EPSG 3035.

Data is in 1:1mio which a suitable scale for detailed mapping e.g., by zooming in to country or region level.

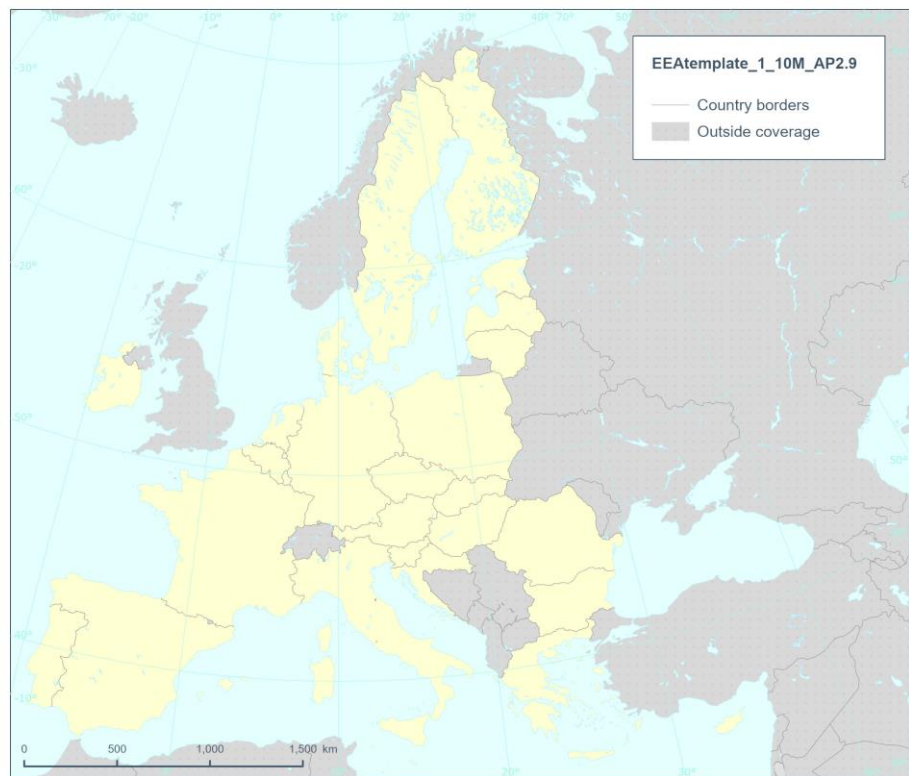


Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO

### Extent 1-10mio

The data and the template are defined in EPSG 3035.

The data is in scale 1:10mio which is suitable for mapping at European level.



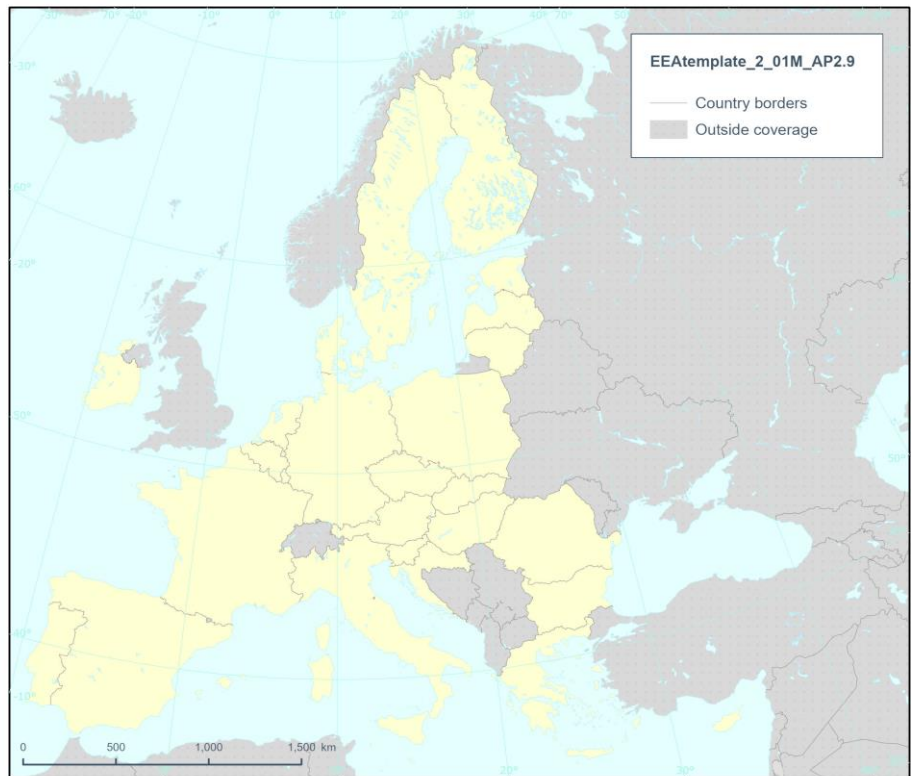
Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



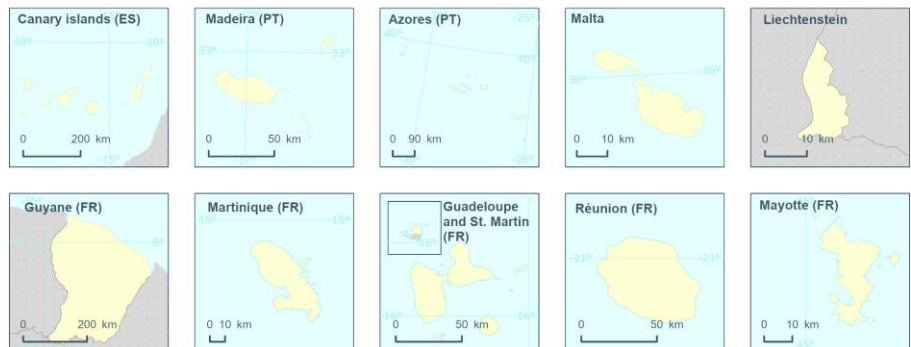
## Extent 2-01mio

The frames visualise the European countries, Grand Canaria, Azores, and Madeira are defined in EPSG 3035. The French overseas territories data and frames are defined in EPSG 4326

Data is in 1:1mio which a suitable scale for detailed mapping e.g., by zooming in to country or region level.



Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



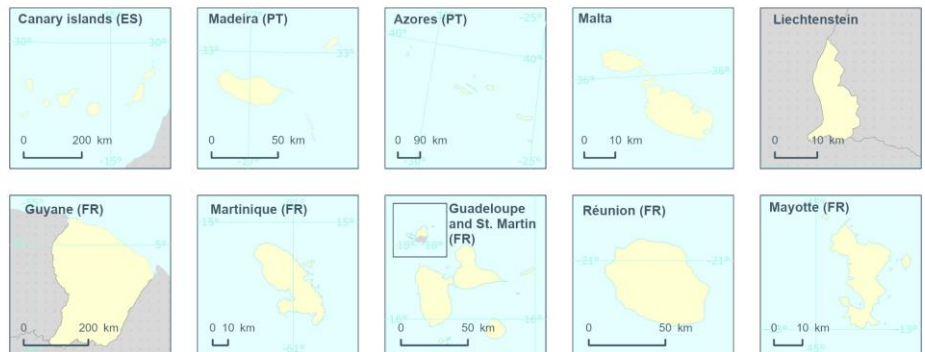
## Extent 2-10mio

The frames visualise the European countries, Grand Canaria, Azores, and Madeira defined in EPSG 3035. The French overseas territories data and frames are defined in EPSG 4326

The data is in scale 1:10mio which is suitable for mapping at European level.



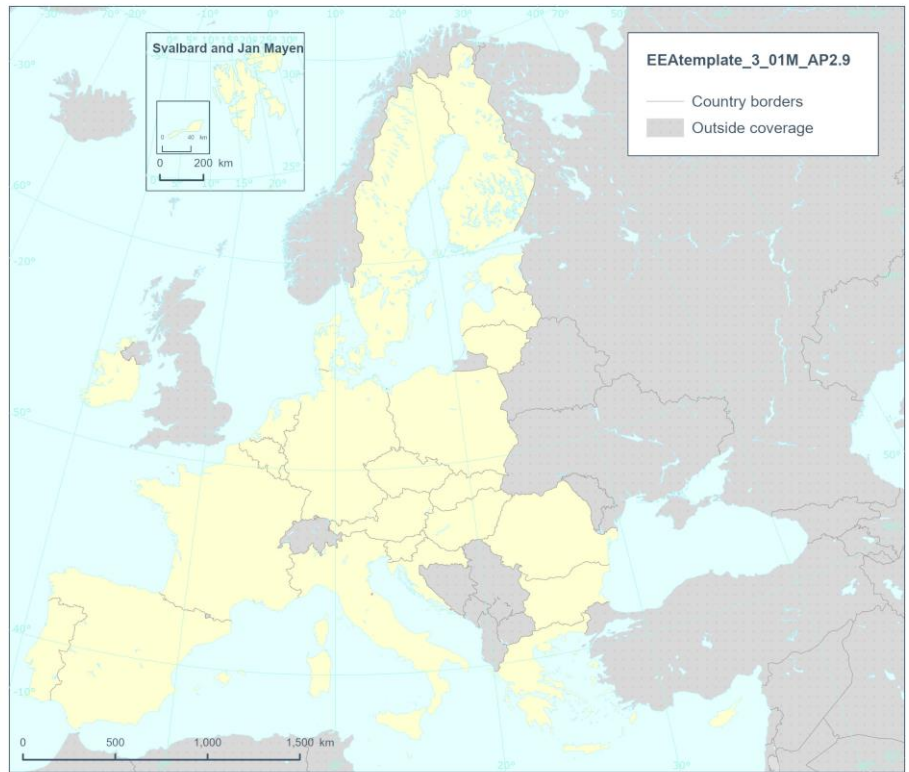
Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



### Extent 3-01mio

The frames visualise the European countries, Grand Canaria, Azores, Madeira, and Svalbard defined in EPSG 3035. The French overseas territories data and frames are defined in EPSG 4326

Data is in 1:1mio which is a suitable scale for detailed mapping e.g., by zooming in to country or region level.



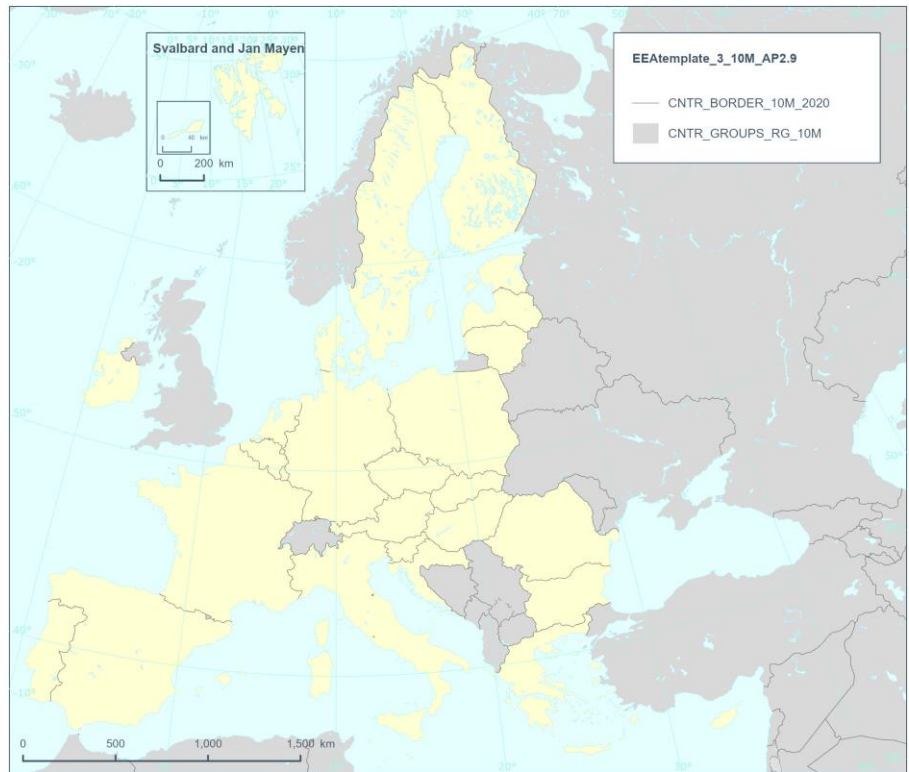
Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



### Extent 3-10mio

The frames visualise the European countries, Grand Canaria, Azores, Madeira, and Svalbard defined in EPSG 3035. The French overseas territories data and frames are defined in EPSG 4326

The data is in scale 1:10mio which is suitable for mapping at European level.



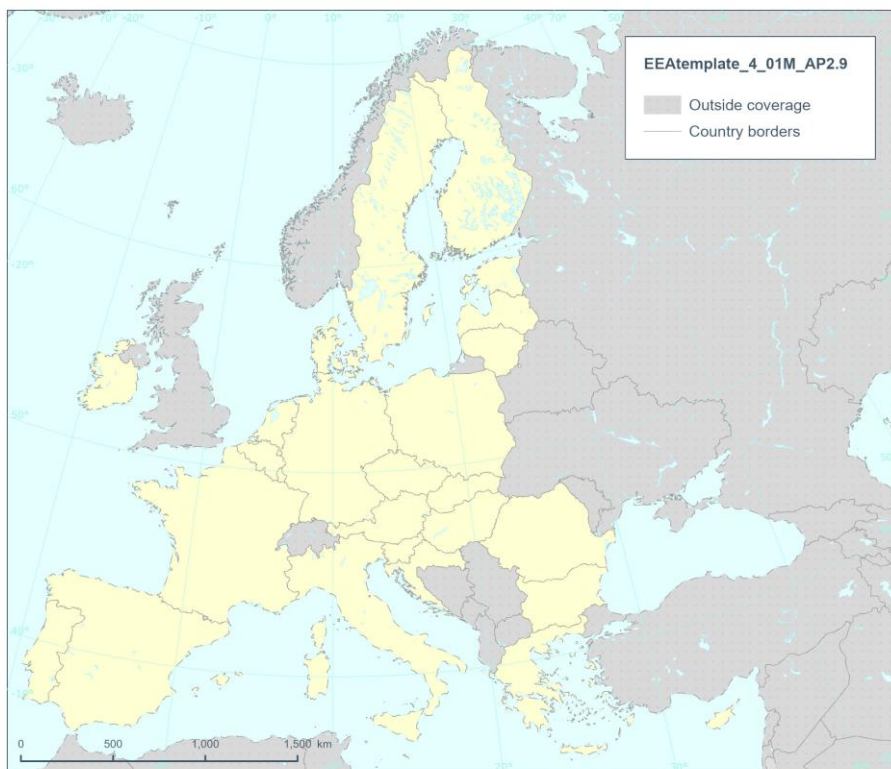
Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



## Extent 4-01mio

The frames visualise the European countries, Grand Canaria, Azores, Madeira, Malta and Liechtenstein defined in EPSG 3035.

Data is in 1:1mio which a suitable scale for detailed mapping e.g., by zooming in to country or region level.



Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



## Extent 4-10mio

The frames visualise the European countries, Grand Canaria, Azores, Madeira, Malta, and Liechtenstein defined in EPSG 3035.

The data is in scale 1:10mio which is suitable for mapping at European level.



Reference data: © EuroGeographics, © FAO (UN), © TurkStat Source: European Commission – Eurostat/GISCO



## Country designation



### Kosovo

With the respect of the 'UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence' Kosovo country borders will be visualised in EEA maps as hashed lines.



### Palestine

With the respect of the UNGA Resolution 67/19 of 29 November 2013 Palestine country borders will be visualised in EEA maps as hashed lines.

## Specification of map extents by coordinates

All values given in coordinates related to the projection specified.

Map extent	EPSG-code / projection	Bottom	Left	Top	Right
template_1_01M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_1_10M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_2_01M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_2_10M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_3_01M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_3_10M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_4_01M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
template_4_10M	3035	1 350 000 m	2 555 000 m	5 500 000 m	7 405 000 m
Inserted map frames					
Malta	3035	1 419 000 m	4 692 260 m	1 470 775 m	4 744 044 m
Liechtenstein	3035	2 653 475 m	4 269 700 m	2 691 425 m	4 307 650 m
Svalbard & Jan Meyen	3035	5 705 000 m	4 026 000 m	6 431 000 m	4 752 000 m
Grand Canaria	ETRS 1989 UTM Zone 28N_1	2 886 900 m	152 000 m	3 440 000 m	706 200 m
Madeira	ETRS 1989 UTM Zone 28N_1	3 565 000 m	273 300 m	3 686 000 m	394 400 m
Azores	ETRS 1989 UTM Zone 28N_1	4 029 000 m	-989 000 m	4 681 000 m	-337 000 m
Guyana (FR)	WGS 1984	1.9035199°N	55.6272514°W	6.3709579°N	51.1598134°W
Martinique (FR)	WGS 1984	14.2153453°N	61.5612291°W	15.1571595°N	60.6194149°W
Guadeloupe (FR)	WGS 1984	15.7529266°N	62.0082260°W	16.8321130°N	60.9290396°W
St. Martin (FR)	WGS 1984	17.9240267°N	63.2336276°W	18.2671017°N	62.8905526°W
Réunion (FR)	WGS 1984	21.5602703°S	55.0323590°E	20.6168714°S	55.9757580°E
Mayotte (FR)	WGS 1984	13.0843465°S	44.8253421°E	12.5781176°S	45.3315710°E

- EPSG code: 3035: Lambert Azimuthal Equal Area (LAEA), datum ETRS89, 52 N, 10 E, false easting: 4 321 000, false northing: 3 210 000

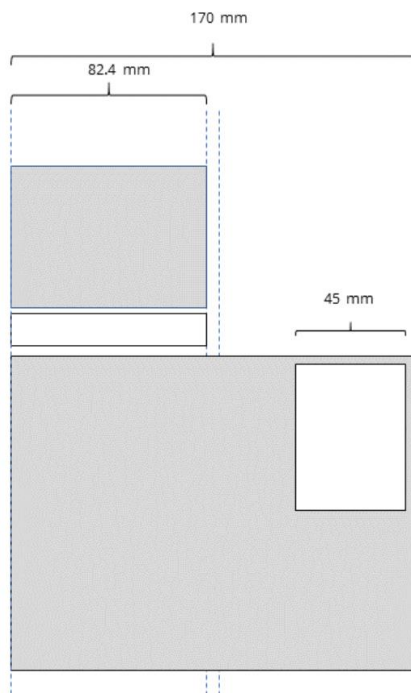
EPSG-codes are managed at <https://spatialreference.org/>

## 2. EEA layout

This chapter focuses on maps produced for reports. Much of the information is also relevant for maps produced for the Web. The EEA and ETCs are expected to use the specifications unless there are a specific reason for not doing so. Maps made for EEA reports and the like are published as standalone products in [EEA Data Service Maps and Graphs](#) and can then be used in other EEA products in addition to the report, indicator or webpage for which they were originally produced. The EEA map templates is furthermore used for thumbnails visualising dataset stored to the [EEA data and metadata catalogue](#).

### 2.1. A4-standard size for maps

The EEA has a standard A4-page layout for printed reports. Each page is divided into two columns of 82.4 mm and between the columns there is a 5 mm space. The columns can be subdivided into two 38.7 mm columns with 5 mm space. Maps produced for reports as well as for factsheets should as far as possibly follow these sizes.



*Small map (for two adjacent maps), legend placed below.*

*Standard EEA map, legend placed inside the map to the right or the legend can be placed below. The legend placed inside the map is by default 45 mm wide*

Figure 2.1: Dummy A4-page with the EEA layout standard.

- **The standard EEA map has a width of 170 mm, the legend placed inside the map.**
- Accepted widths are:
  - 82.4 mm, where two small maps are presented side by side, legend is placed below.
  - 170 mm, legend is placed inside or below the map, same width as the map.
- In a few cases, maps covering two pages are used. Contact COM Publications for sizes.

## 2.2. Size for maps produced for A5-format

With the development of tablets an increasing number of reports will be written in A5 format for optimal utilization of space. Maps produced for A5-format reports should as far as possible follow these sizes. Each page is held in one column in width 109.00 mm. The legend is placed 4.0 mm below the map.

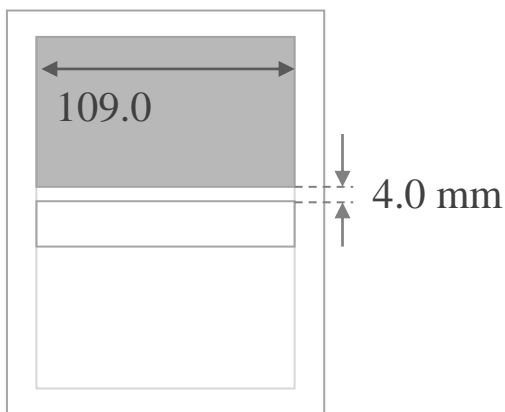


Figure 2.8: Dummy A5-page with the EEA map layout.



## 3. Standard elements/features in maps

The maps produced by the EEA for printed reports are usually very simplified. Accordingly, the “ready-to-use” draft maps delivered to the EEA should contain few elements in the small-scale maps:

- Few general elements/background features;
- Limited number of thematic issues per map – usually one issue is enough. Maps covering more than one issue usually appear overloaded and the message in the map is lost.

### 3.1. Level of generalisation

- Extracted from the GISCO- and the EuroGeographics databases EEA tailored and compiled a generalised GIS datasets adapted to make maps at small scales. ETCs and others producing maps on behalf of the EEA should use this selection. The data are labelled EEA map data. The EEA map templates created for the use in ArcMAP and ArcGIS PRO are also based on the use of these GIS data. Templates and data are available from: [EEA map templates for static maps](#)
- Data have been tailored to meet the needs for the map production related to reports, assessments, indicators, and other EEA products. Data is available in two levels of generalisation: 1:1 mio. and 1:10 mio. The data in 1:1 mio. is suitable for detailed mapping such as zooming in to country level still holding a fair level of details avoiding countries and borders becomes too angular. The template in scale 1:10 mio. is suitable for mapping at European level.

### 3.2. Background layers

Standard background features available in the EEA map data and templates to be used in map production are based on a level of generalisation comparable to 1:1 mio. or 1:10 mio. Below is a table of available features and features included in the templates by default.

EEA map data	Feature name	Default
Country polygons	Countries	
	CNTR_GROUPS_RG_01M	x
	CNTR_GROUPS_RG_10M	x
	CNTR_PALESTINE_01M	x
	CNTR_CAPT_PT_2016	
	CNTR_LB_2020_COUNTRY_NAMES	
Sea surface	Sea	
	SEA_BACKGROUND_01M	x
	SEA_BACKGROUND_10M	x
Lakes	Lakes	
	LAKE_WRLD_PL_01M	
	LAKE_WRLD_PL_10M	
	LAKE_WRLD_PL_20M	x
	LAKE_WRLD_PL_60M	
Rivers	Rivers	
	WTPT_LL_01M_2008	
	WTPT_LL_10M_2008	
	WTPT_LL_20M_2008	

	WTPT_LL_60M_2008	
Country Boarder	Boarder	
	CNTR_BORDER_01M_2020	x
	CNTR_BORDER_10M_2020	x
	CNTR_BN_EBM_KOSOVO	x
	CNTR_BORDER_PALESTINE_01M	x
	CNTR_BN_EBM_KOSOVO	
Coastline	Coastline	
	COAS_LL_01M_2020	
	COAS_LL_10M_2020	
Lat/long every 10°	latlong10	x

The above table gives a generalised picture of the EEA map data and templates that could be used in the different map sizes. A mark is only an indication of the features that should be included in the map.

### 3.3. Thematic layers

Data underpinning thematic layers in maps should be delivered to EEA as described in the ‘Data-Requirement-guide’ document.

### 3.4. Standard layer order

Feature/map element	Layer order
Frame	1
<b>Text</b>	
Grid numbers	2
Thematic text	3
Country names	4
Cities	5
Seas/lakes/rivers	6
<b>Points</b>	
Thematic point data	7
Cities	8
<b>Lines</b>	
Gridnet (lat/long)	9
Thematic boundaries/line data	10
Coast/sea shoreline	11
Country boundaries	12
Rivers, medium	13
Lake/shoreline	14
<b>Polygons/areas</b>	
Lake/river surface	15
Outside data coverage areas	16
Thematic areas	17
Countries	18
Land surface	19
Sea surface	20

The layers of the map as they come from the GIS files should be reflected as layers in the postscript file. Text should be placed in separate layers, according to the feature they are naming. If all standard layers are in use, the following layer order is recommended.

## 4. Colour and graphics definitions

The EEA defined graphic layout (colour/line size and fonts) for selected features frequently used on maps. The specifications below fit the needs for use as originals in reports, factsheets and – in most cases – the Web.

### Colour and graphics for background layers

The EEA distinguishes between polygon/area features, line features, point features and text.

Feature/map element	CMYK code	Colour	Size/pt	Font/line type/ fill type
<b>Polygons/areas</b>				
Land surface	0-0-17-0	Yellow		Fill/no line
Land surface – missing values/no data (*)	0-0-0-0	White		Fill/no line
Land surface – outside data coverage (*)	0-0-0-18	Grey		Fill/no line
Sea surface	10-0-0-0	Blue		Fill/no line
Lake/river surface	17-0-0-0	Blue		Fill/no line
<b>Lines</b>				
Coast/sea shoreline	30-5-0-0	Blue	0.2	Line
Rivers	30-5-0-0	Blue	0.2	Line
Lake/shoreline	30-5-0-0	Blue	0.2	Line
Country boundaries	0-0-0-40	Grey	0.3	Line
Thematic boundaries	No line			No line
Frame	0-0-0-100	Black	0.5	Line
Gridnet (lat/long)	37-3-10-0	Weak bluish	0.25	Line
<b>Points</b>				
Capitals	0-100-100-0	Red	6 pt	
Cities	0-0-0-100	Black	4 pt	
<b>Text (**)</b>				
Country names	0-0-0-100	Black		Verdana (***)
<b>Towns</b>	0-0-0-100	Black		Verdana (***)
Seas/rivers/lakes	100-30-0-50	Blue		Verdana (***)
Grid numbers	37-3-10-0	Weak bluish	5.25 pt	Verdana (***)

(\*) ‘No data’-colour is always white and ‘Outside data coverage’-colour is always grey in EEA products.

(\*\*) Note that the EEA advises following Eurostat’s practice for maps: the use of geographical names (especially seas, oceans, etc.) should be avoided. However, country names (capitalised) and capital names should be in English while for rivers, cities etc the EEA follows Times Atlas for naming.

(\*\*\*) For text on Web maps, the recommended fonts are Verdana, Tahoma, Geneva or Arial.

The colours defined above are used in the template files produced by the EEA.

### Colour and graphics for thematic information – use of common colour scales

General rules of map semiology, such as using a maximum of seven different colours or a maximum of five densities of grey (*The Semiology of Graphics*, Bertin, 1983), should be respected. The EEA recommends:

- When using statistical or ordinal division of data, the EEA has recommended colour scales. Please see the exact definition of colours in the EEA Cooperate design manual: (<https://www.eea.europa.eu/publications/eea-corporate-design-manual>).
- When presenting colour distribution of areas (polygons), avoid using a separate colour for the outline/boundary of each area. Maps look cleaner without thematic boundary lines.

## Colour systems – CMYK and RGB

The colours are given in:

- CMYK for printing purposes: e.g. 5-100-55-12 or 0-12-10. The K value (black shade) is commonly omitted when equal to zero;
- RGB for screen purposes: e.g. 102 47 153. RGB colours are sometimes given in hexadecimal code (often used in HTML), e.g. 66 2F 99 = 102 47 153.

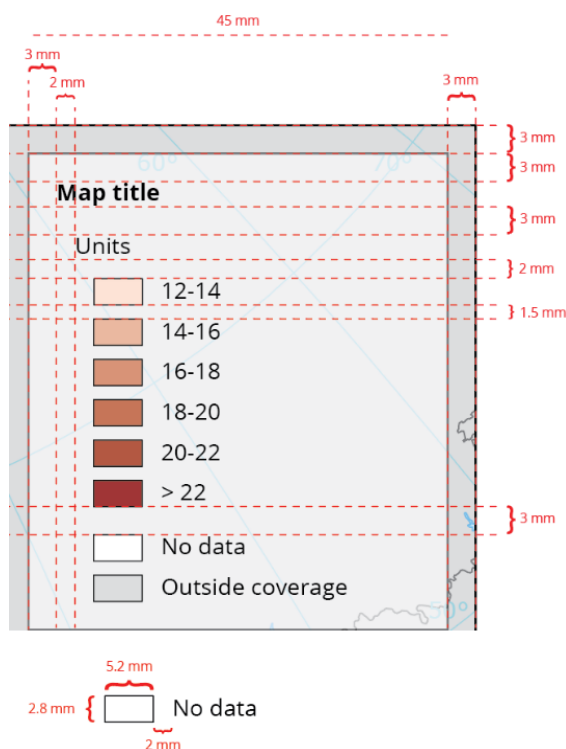
The colours defined in different colour systems may not be translated directly. Apply CMYK colour settings for maps to be displayed in paper reports and use the RGB colour settings for maps only displayed on the screen.

### 4.1. Legend

A map has a legend. The legend is placed inside the map frame, normally to the right, with a 3 mm space between map frames and legend.

The legend standards are as follows:

- **Width:** 45 mm is standard. See example to the right.
- **Fonts:** Font type is Open sans both in ordinary text and in heading for printed material. For Web, recommended font types are Verdana, Tahoma, Geneva or Arial.
- **Font size:** All text is 7 pt, headings in bold, category text is normal. Text colour is 100 % black.
- **Spacing between legend elements:** In the example, the spacing between title and legend items is 3 mm. The spacing between label patches vertically is 1.5 mm.



*Recommended settings for the legend placed inside the map*

**Other:**

- All text is left oriented;
- Where category text is longer than one line, the first line should be aligned with the label patch;

- Allow space between numbers, '%' and mathematic symbols as: =; <; >; <=; >= (> 22 %)
- Allow no space between minus and numbers (-7);
- Allow no spaces in intervals (100-250);
- Allow no space in year spans (1900-2000);
- Use one space as thousand delimiter (1 000-1 500);

#### Text: translation implications

A number of EEA reports are translated into the languages of the member countries. Text in maps and graphs are also translated and the text parts need to be easily accessible to the translation process. Therefore, the EEA makes the following recommendations:

- Place text in separate layers;
- Define text with the prescribed fonts and sizes;
- Do not outline text;
- Text that will be translated later should be black or grey (use only the K parameter in CMYK). Other text, such as numbers or 'IDs' on locations, could have other colours. Note that the EEA advises following Eurostat's practice for maps, that the use of geographical names (especially seas, oceans, etc.) should be avoided.

#### Postscript export settings in ArcGIS

Postscript format (eps, pdf or ai) is required for high quality printing. The export of maps to postscript format is done from ArcGIS.

Resolution of the output is set in Options (figure 2.7):

- *Resolution* to '300 dpi'
- The *colorspace* is 'CMYK'
- *PS language level* is '2'
- The *image compression* is 'RLE'
- The *Picture symbol* is set to 'Rasterize layers with bitmap markers/fils'
- The '*Convert marker symbols to polygons*'
- The '*Embed all document fonts*' should be check marked.

It is recommended to examine the output file in Adobe or other image editing software to verify that the resulting map is satisfactory.

In the case of external experts preparing a map for use by EEA, the output file in eps, pdf- or ai-format should be delivered to the EEA QC-team together with the relevant underpinning GIS data and metadata.