MUNI
SCI

03 Seminar

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Content

1. Evaluation of global CO_2 emissions in relation to global mean surface temperature rise
2. Evaluation of the contribution of CO_2 concentrations from your state

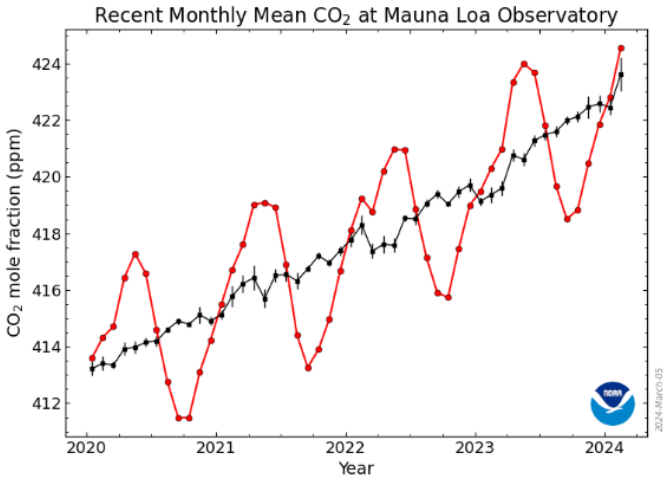
CO2 emissions

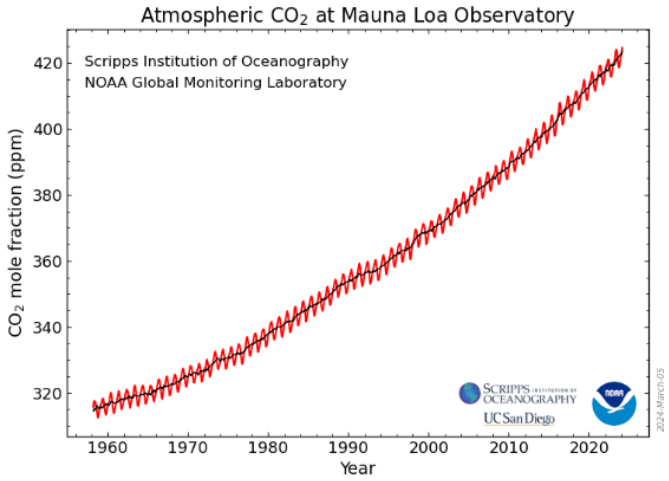
- Anthropogenic CO_2 sources are part of our everyday activities and include those from power generation, transportation, industrial sources, chemical production, petroleum production, and agricultural practices. Many of these source types burn fossil fuels (coal, oil, and natural gas), with CO_2 emissions as a byproduct.

Monthly Average Mauna Loa CO_2

February 2024: 424.55 ppm
February 2023: 420.30 ppm
Last updated: Mar 05, 2024

Monthly mean carbon dioxide measured at Mauna Loa Observatory, Hawaii. The carbon dioxide data on Mauna Loa constitute the longest record of direct measurements of CO_2 in the atmosphere.





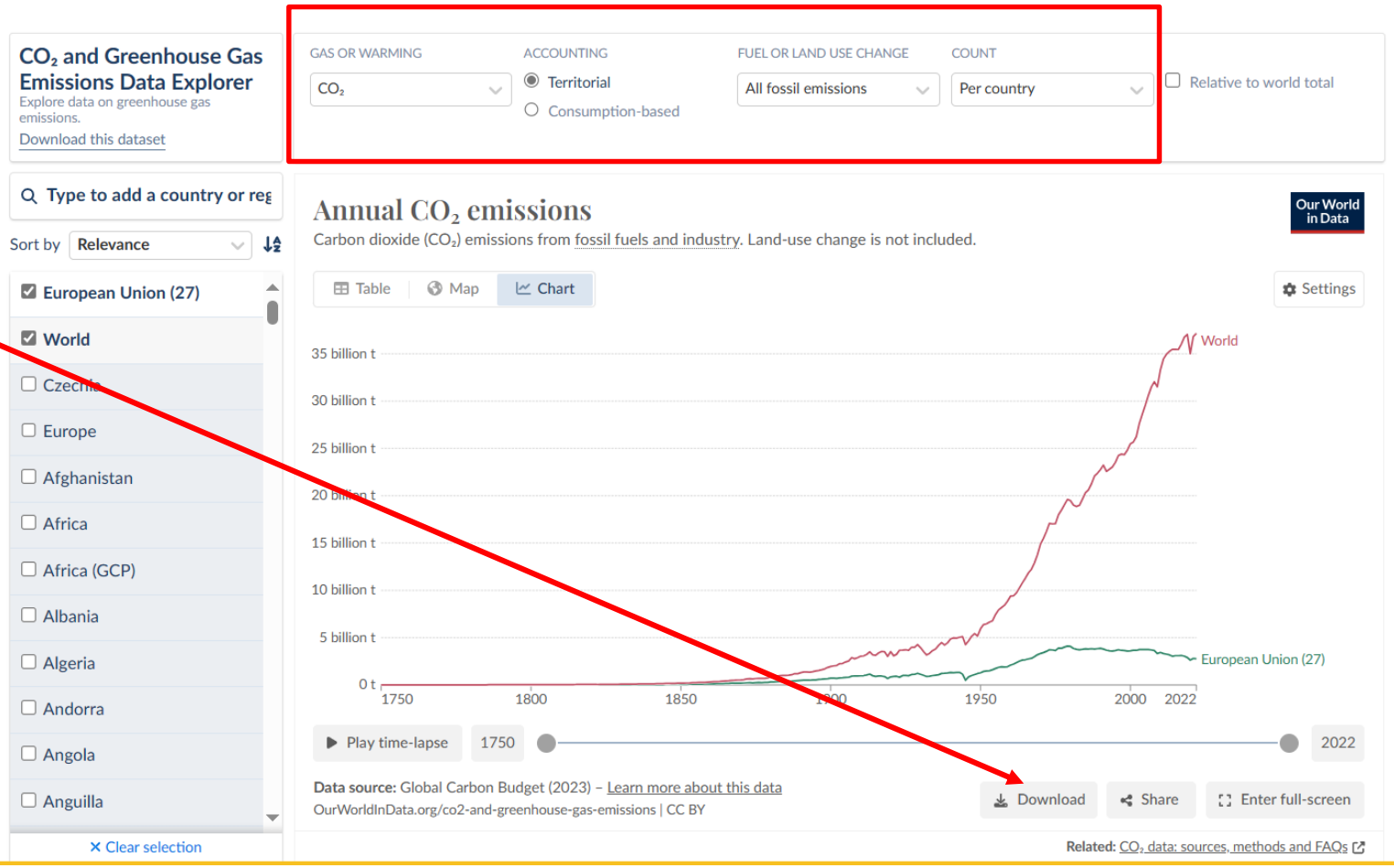
Task assignment

- In the assignment, you will create a graph in Excel according to the instructions.
- You download data on global CO_2 emissions and then create a graph from this data. You will then do the same for your state.
- You can see how your state's CO_2 emissions have contributed to global warming at the link provided.

Please upload the finished exercise (worksheet) to the Information System (Study Materials – Homework Vaults) until March 25, 2024.

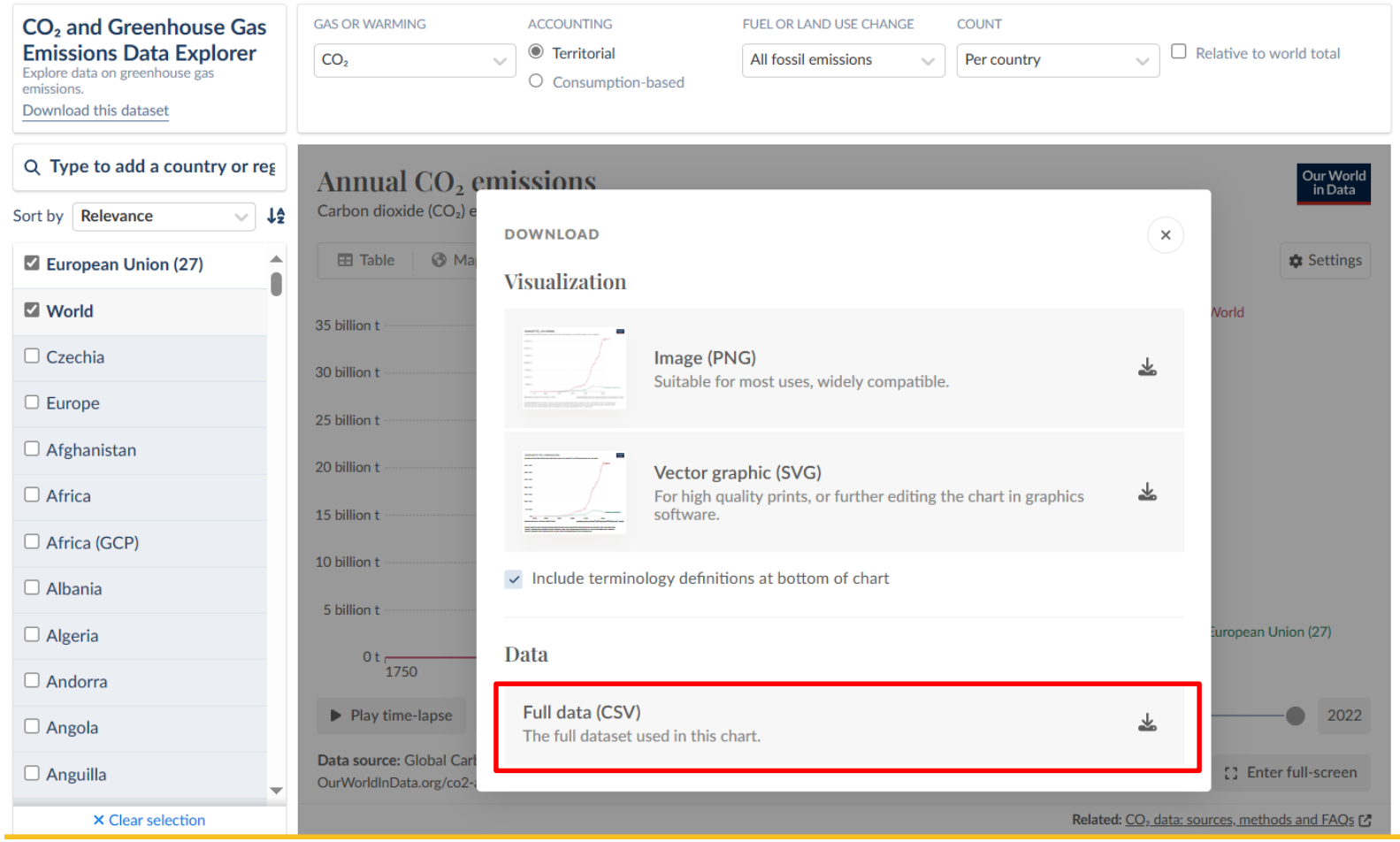
Task assignment

- open this link: [CO_2 and Greenhouse Gas Emissions Data Explorer - Our World in Data]
- choose the items in the menu as shown:
- then click on download



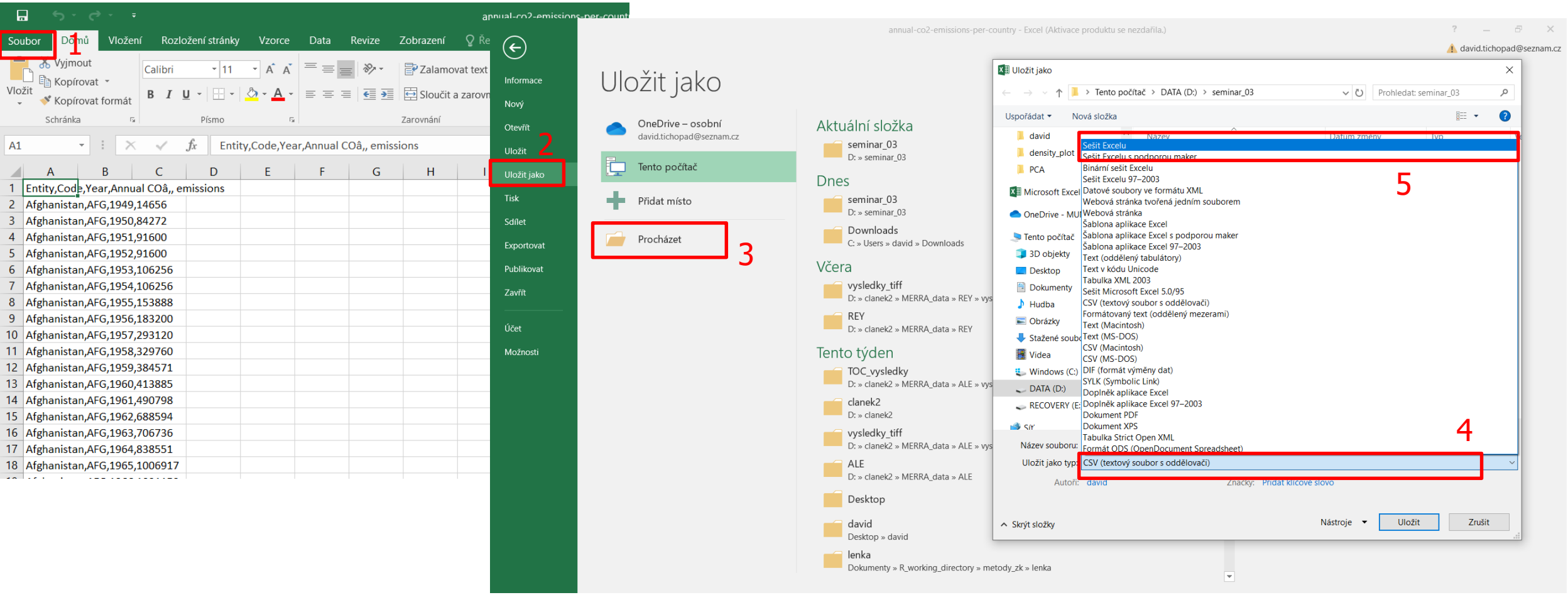
Task assignment

- a menu will open and download full data in .csv format according to the image
- save the downloaded CSV file to your chosen folder



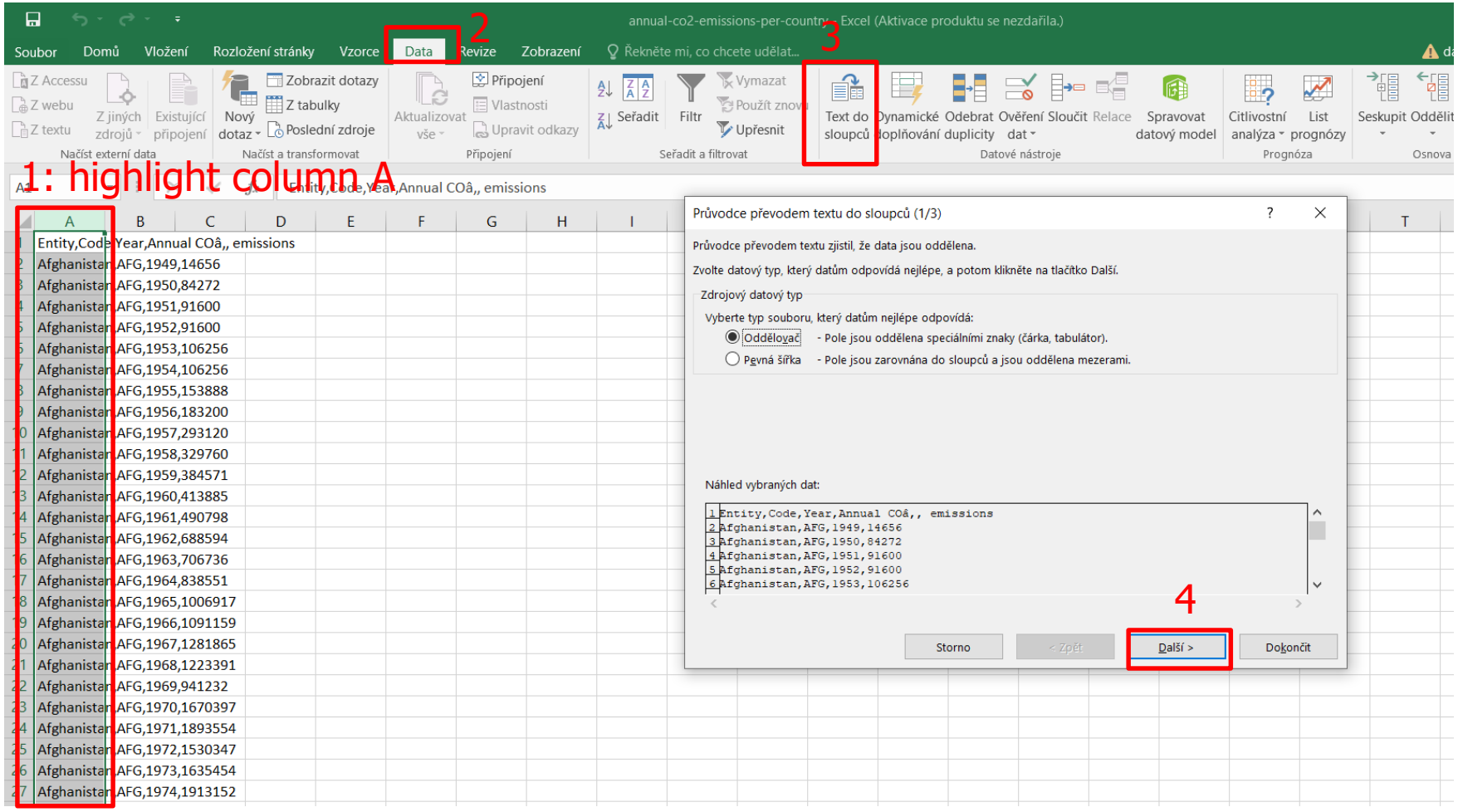
Task assignment

- open the CSV file and then save it as an Excel workbook



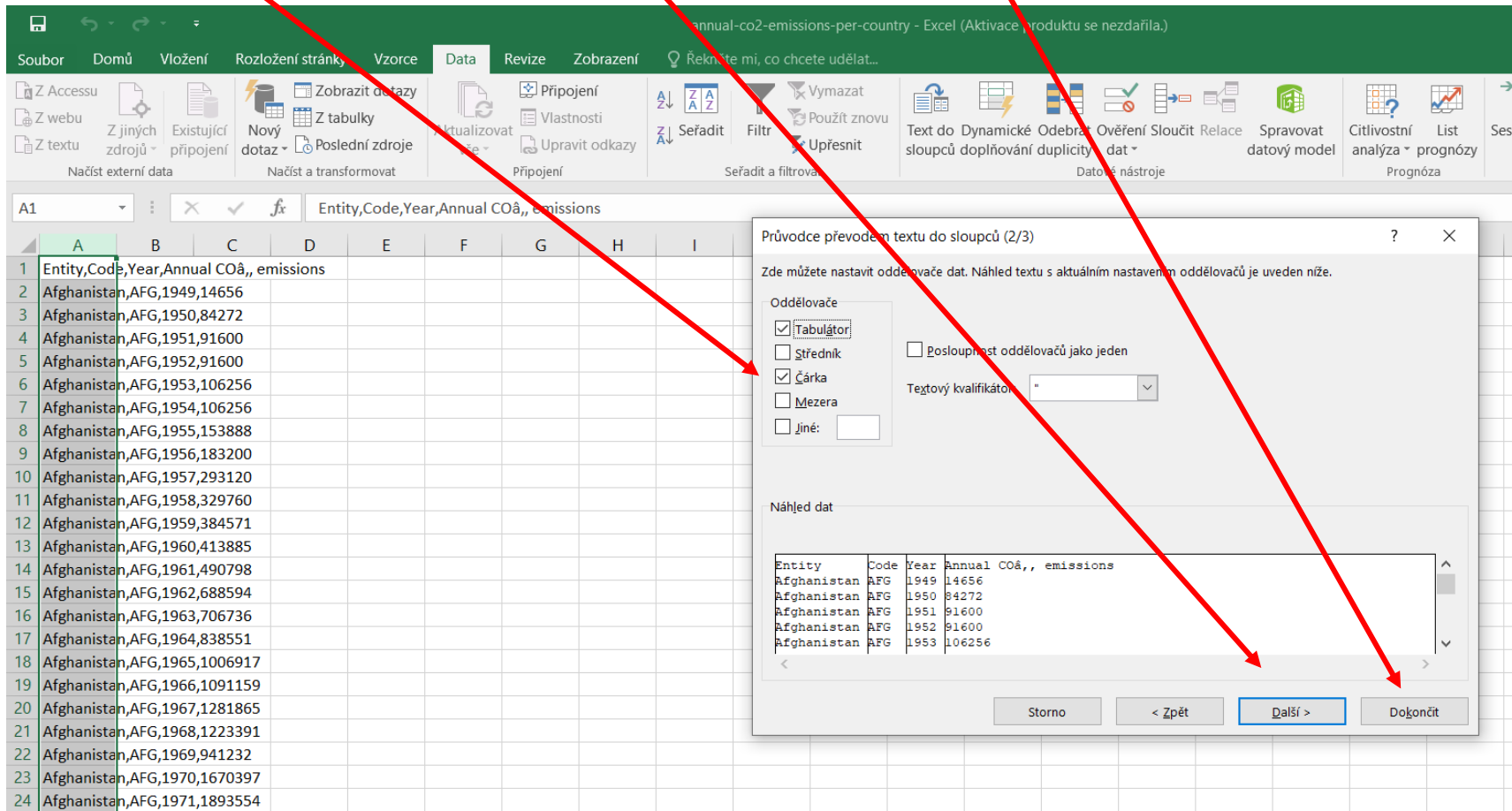
Task assignment

- open the saved Excel and follow the steps in the image



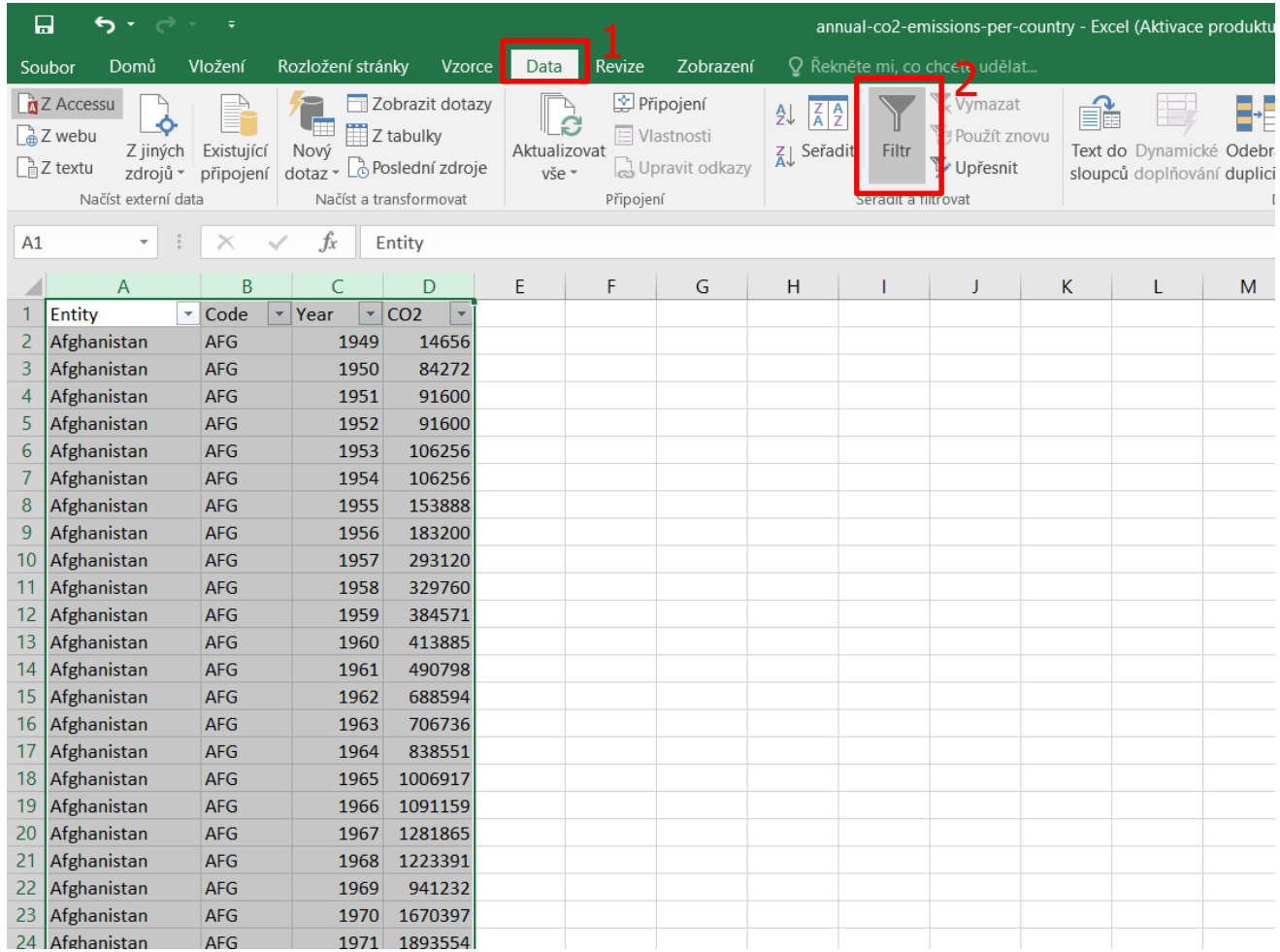
Task assignment

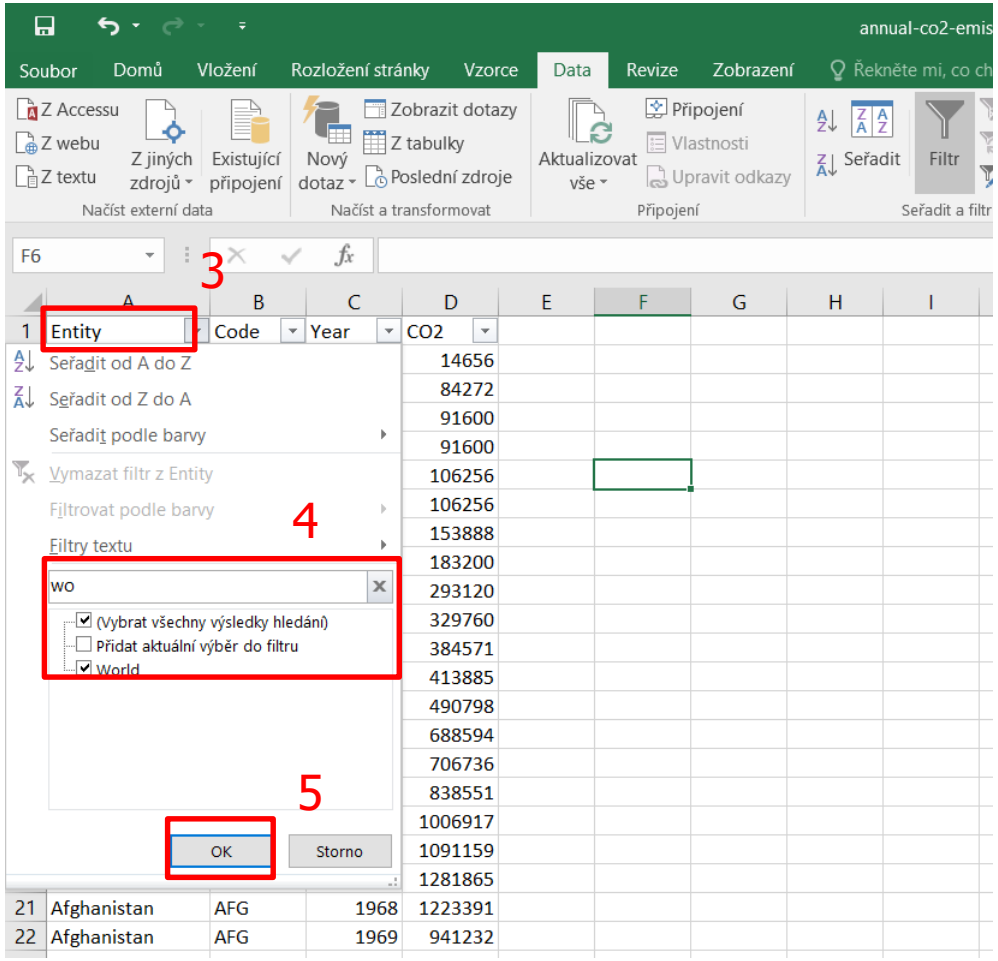
- check the comma in the menu, then click next and then finish



Task assignment

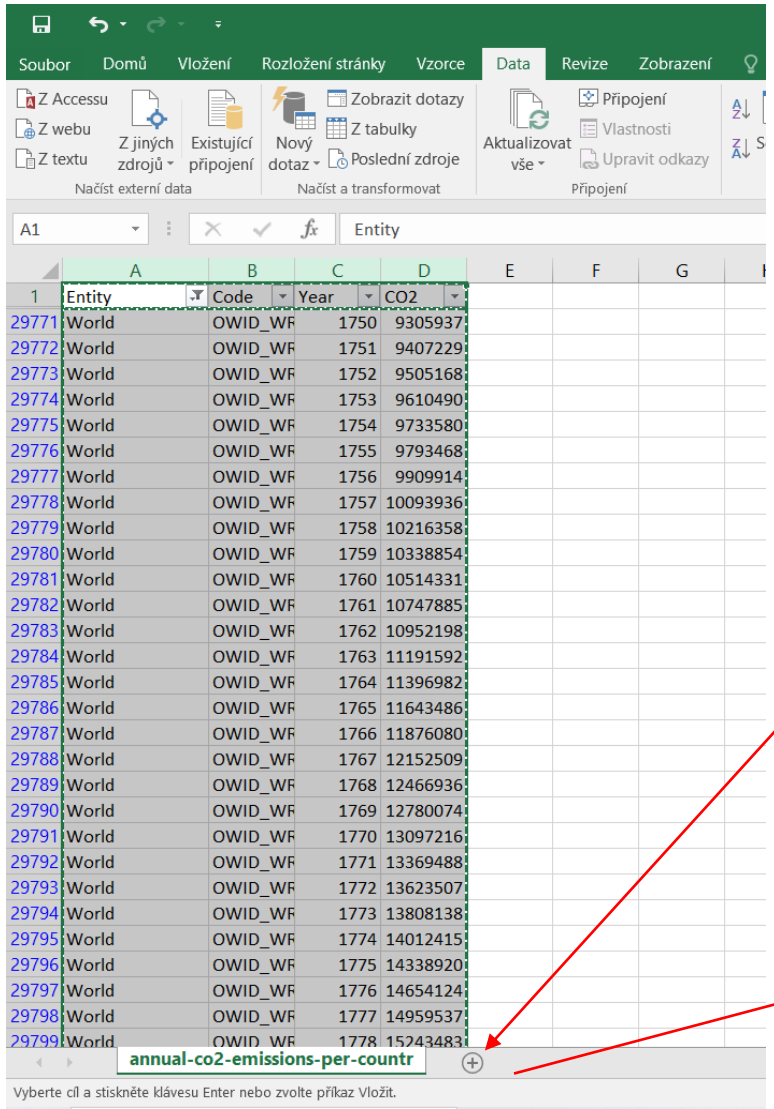
- subsequently, it is necessary to filter the world data (you can rename the columns)

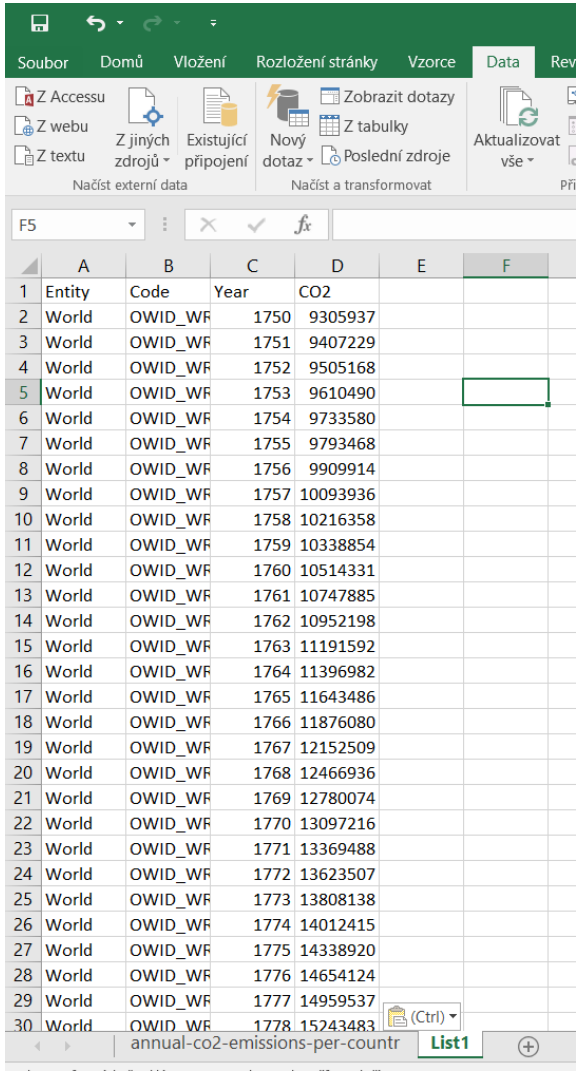




Task assignment

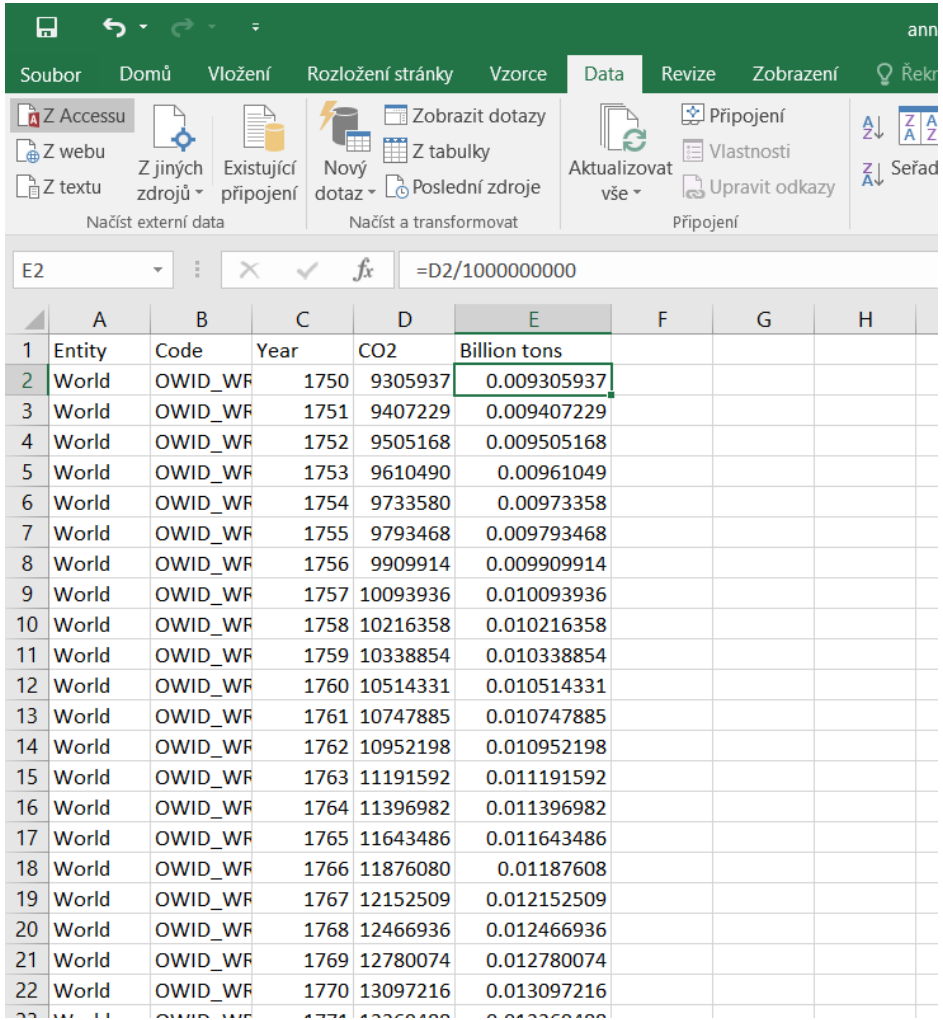
- highlight the filtered data and paste (as values) it into a new sheet





Task assignment

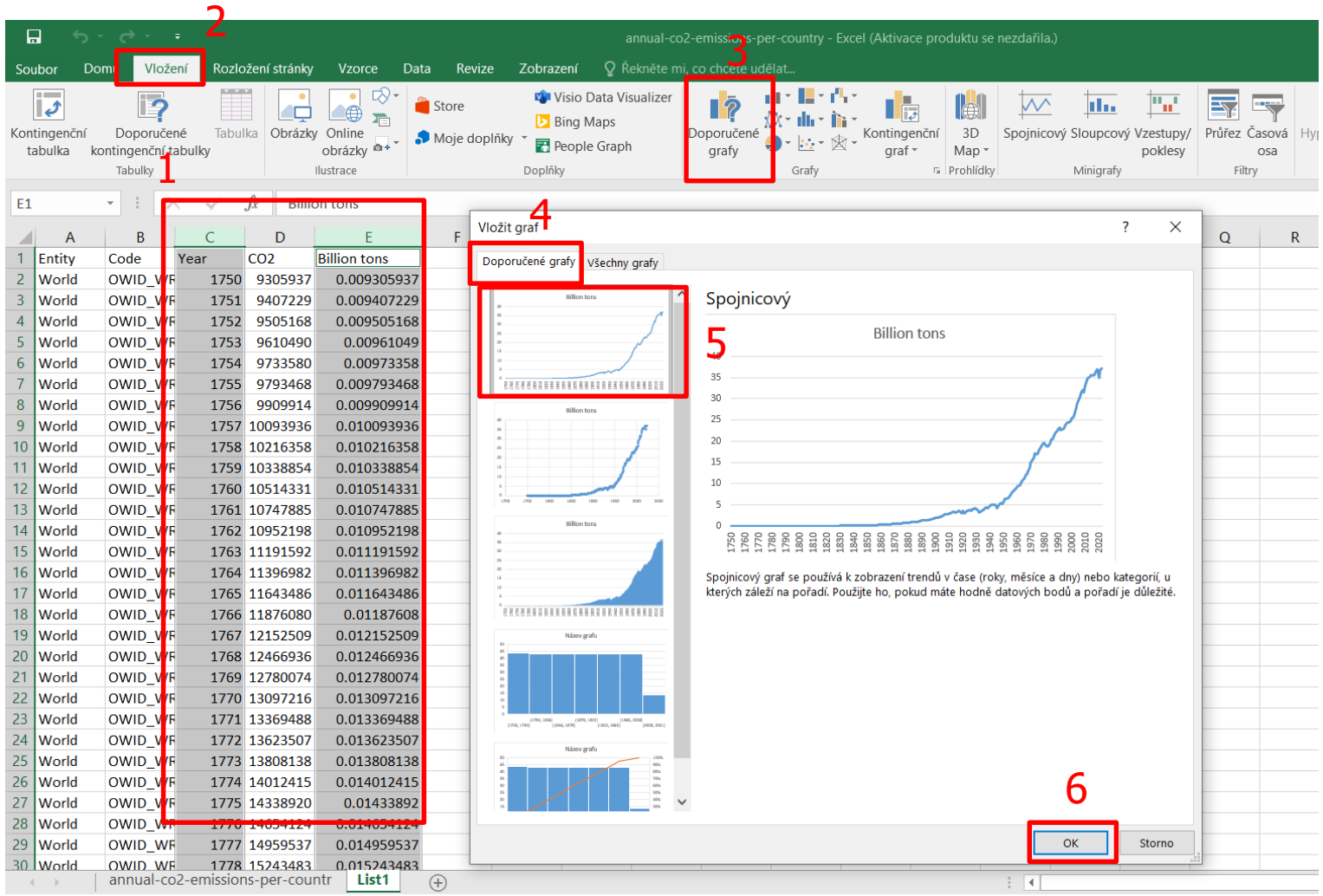
- now it is necessary to convert the values in tons to billion tons (Gt)



	A	B	C	D	E	F	G	H
1	Entity	Code	Year	CO2	Billion tons			
2	World	OWID_WR	1750	9305937	0.009305937			
3	World	OWID_WR	1751	9407229	0.009407229			
4	World	OWID_WR	1752	9505168	0.009505168			
5	World	OWID_WR	1753	9610490	0.00961049			
6	World	OWID_WR	1754	9733580	0.00973358			
7	World	OWID_WR	1755	9793468	0.009793468			
8	World	OWID_WR	1756	9909914	0.009909914			
9	World	OWID_WR	1757	10093936	0.010093936			
10	World	OWID_WR	1758	10216358	0.010216358			
11	World	OWID_WR	1759	10338854	0.010338854			
12	World	OWID_WR	1760	10514331	0.010514331			
13	World	OWID_WR	1761	10747885	0.010747885			
14	World	OWID_WR	1762	10952198	0.010952198			
15	World	OWID_WR	1763	11191592	0.011191592			
16	World	OWID_WR	1764	11396982	0.011396982			
17	World	OWID_WR	1765	11643486	0.011643486			
18	World	OWID_WR	1766	11876080	0.01187608			
19	World	OWID_WR	1767	12152509	0.012152509			
20	World	OWID_WR	1768	12466936	0.012466936			
21	World	OWID_WR	1769	12780074	0.012780074			
22	World	OWID_WR	1770	13097216	0.013097216			

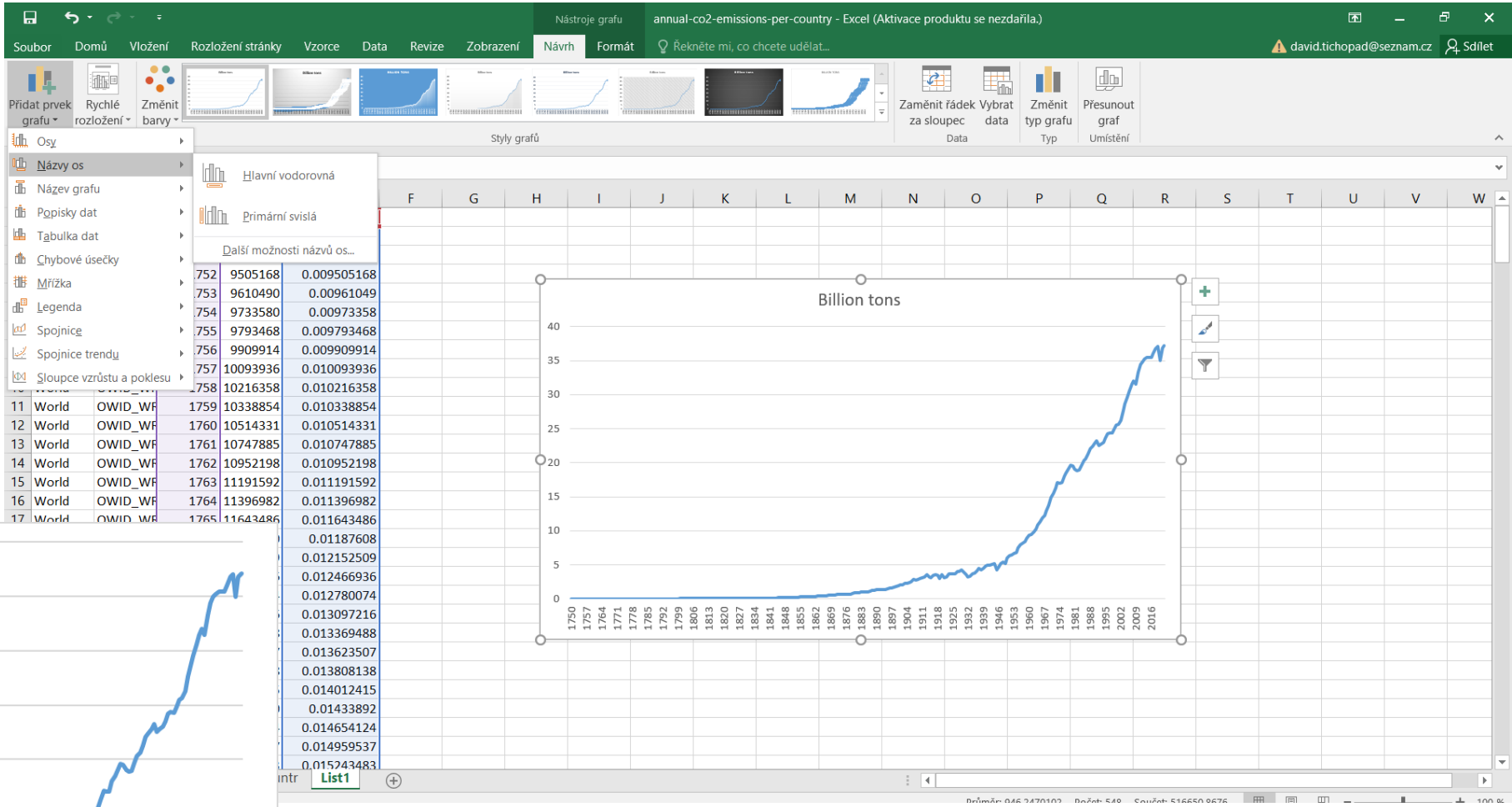
Task assignment

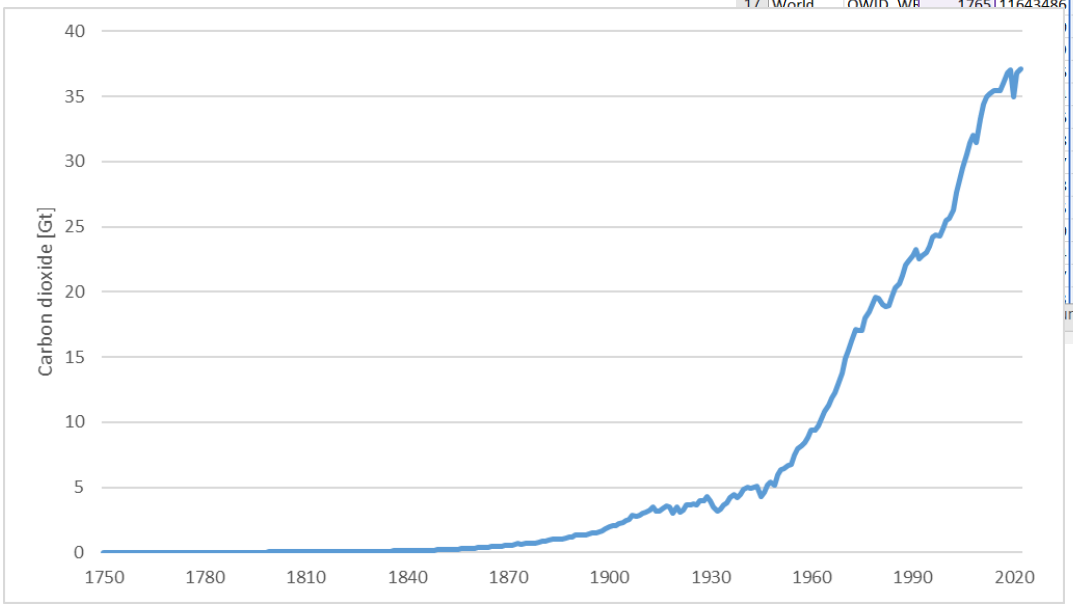
- now we will create a graph - highlight the columns according to the image via ctrl



Task assignment

- you can now further modify the graph, for example add labels as shown in the image





Task assignment

- Now also try for your country (select your country instead of world in the filter)
- Then check out the page in the link provided on how world and your country's CO_2 emissions contribute to global warming

Thank you for your attention