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# BOCS Foundation

## CO<sub>2</sub>e emission prevention

### 2016 report

Date: 2018. October 21.

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## Table of contents

<b>INTRODUCTION</b>	<b>3</b>
<b>REPORT</b>	<b>4</b>
Inputs	4
Valorization	4
Prevented accidental pregnancies	5
Prevented Unwanted births	5
Calculations of prevented GHG emissions	5
<b>POSITIVE EFFECTS BEYOND EMISSION PREVENTION</b>	<b>7</b>
Sources:	8
Appendix 1	9

## Introduction

The BOCS Foundation (registration 1994-10-24 Fejér County Court, Judicial register number: 341. Pk 61.745/1994., Tax number: 18481862-1-07, seat: H-8000 Székesfehérvár, Jókai str. 18.) received the public benefit organization qualification promptly after the introduction of this legal category, on 1999-03-24., for its environmental, educational, etc. activities.

The projects of BOCS, its global education trainings, its public awareness raising work, and its international partnerships help Hungary to fulfill its international obligations to support poor countries, and to contribute to the UN's Cairo Programme of Action, the Millenium Development Goals between 2000 and 2015, and the Sustainable Development Goals ever since. Thanks to all of this, it contributes significantly to the protection of human-, and civic rights, to women's rights and children's rights, alleviation of poerty, nature conservation and environmental protection, peace and security, and to the long-term solution of the migration crisis.

In the field of nature conservation and environmental protection, BOCS has been dealing with climate change since 1992 (the year the United Nations Framework Convention on Climate Change (UNFCCC) was adopted). Its activity primarily helps in the prevention of GHG emissions, in the spirit of the 1997 Kyoto protocol, which entered into force in 2005, and that of the 2015 Paris Agreement.

Since 2006, BOCS is a member of the EuroNGOs.org, which is a European network that helps the still ongoing Programme of Action of the UN's 1994 International Conference of Population and Development. It is a founding Hungarian member of the EuropeanPopulationAlliance.org European network. In 2009, it received the Hungarian Scientific Association of Ecologists (MÖTE) award by the Hungarian Academy of Sciences for the popularization of Ecology. Gyula Simonyi, the president of BOCS received invitation to the Balaton Group in 1998, which is the global network of researchers of sustainability, who annually meet at Lake Balaton since 1982. In the last decade, BOCS has worked in multiple African countries as a partner of big Western organizations. The foundation itself continuously offsets its carbon emission.

At the 2009 Copenhagen Climate Summit, the emission-reducing efficiency of the human right of contraception (UN, 1968) was already discussed at a political level. Using carbon footprint and the average life expectancy, the emission reduction from prevented accidental pregnancies due to **public awareness raising** activity becomes measurable.<sup>[1][2]</sup>

The lack of family planning opportunities is not only about the lack of means, but also, women might not have the right or knowledge to use them, or the socioeconomic structure they live in might not make them accessible or affordable. Persuasion of education, media and policy makers, lobbying, technological development, liberating women, starting movements, changing the mentality of

healthcare, etc. all promote that only prepared couples conceive children, as a responsible decision.

The Hungarian international development (ODA, Official Development Assistance) means that according to the expectations of the UN, Hungary has to help the poor countries by 0,7% of its GNI every year. For years, not even a penny from the Hungarian ODA budget went to contraception aid. Since 2003, the BOCS Foundation has been the member of the advisory board of the Foreign Affairs (until it was dismantled after a decade). After a few years, several millions of HUF were spent on contraception. In 2015, about 50 million forints went for contraception aid, but this is still only 0,12% of the ODA (The ratio was ten times this much in the case of Britain or the Scandinavian countries). The significance of our lobbying activity is suggested by the fact that the downsizing of the budget of BOCS after 2014 is paralleled by the decrease of the contraception-related part of the Hungarian ODA: it was merely 0,02% in 2016. This means that there is still a lot to do when it comes to helping people realize that contraception aid in the poor world is not only philanthropy, but also a fundamental Hungarian interest. For making the means of responsible family planning available in poor countries is the most efficient way of climate protection, improving security, achieving peace, facilitating gender equality and children's rights, as well as preventing unemployment and mass migration <http://euromapping.org/>

## Report

### Inputs

This report assesses the amount of carbon dioxide equivalent emissions prevented by the work of the BOCS Foundation in 2016.

20% of these costs is viewed as indirect costs (e.g. bookkeeping, etc.), so we only calculate with 80% of them.

2016: 4 042 thousand HUF → 80%: 3 234 thousand HUF

### Valorization

In order to calculate the efficiency of our inputs, we are using the figures of a new, 2017 UNFPA report. Because of this, it is expedient to take inflation into consideration in the case of earlier expenditures. This kind of inflation compensation may be calculated using the valorization multipliers. According to the Appendix 1 of the 35/2018. (III. 7.) government regulation,<sup>[3]</sup> the above values change in the following way compared to the 2017 levels:

2016: 3 234 thousand HUF → x 1,129 = 3 651 thousand HUF

### Prevented accidental pregnancies

Since there is no data available for the cost efficiency of efforts aimed at preventing accidental pregnancies in the case of Hungary, we are going to use the data of a global study in the next step. According to the 2017 report of the UNFPA, they could prevent 7,5 million pregnancies from 303 million USD in that year. According to this, at a global level, the average cost of preventing an accidental pregnancy for a year is 40,4 USD.<sup>[4]</sup>

The related expenditures of the BOCS Foundation in 2016 were 12 815 USD, calculated at the 2016.07.01. exchange rate (284,88 HUF/USD).<sup>[5]</sup> If calculating using this exchange rate, the BOCS Foundation's public benefit expenditures resulted in **317 prevented accidental pregnancies in 2016.**

2016: 317

### Prevented Unwanted births

What percentage of the accidental pregnancies ends with the birth of the unwanted child? According to the latest data, annually, there were 99 100 thousand unintended pregnancies of 227 000 thousand total pregnancies between 2010 and 2014,<sup>[6]</sup> and 32% of unintended pregnancies ended in the birth of the unwanted child.<sup>[7]</sup>

Therefore, 32% of the 317 accidental pregnancies prevented by the work of the BOCS Foundation in 2016 would have resulted in the birth of the unwanted child, which means that the Foundation **successfully prevented 102 unwanted births in 2016.**

2016: 102

### Calculations of prevented GHG emissions

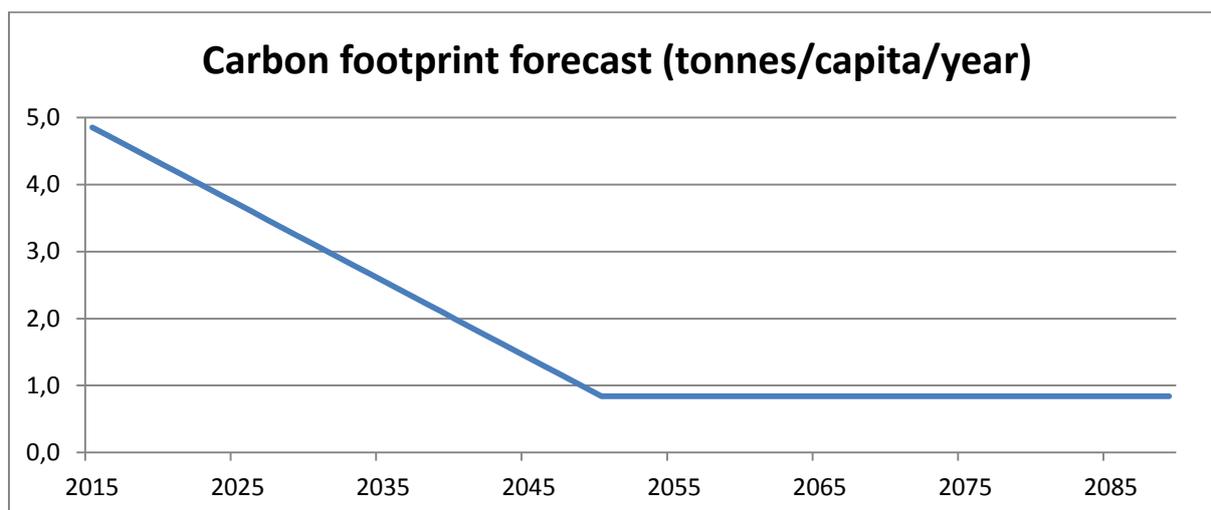
The activity of BOCS is conducted in multiple countries, and has a global effect, so in the next step, we are going to use global data. According to the World Bank, the global carbon footprint is 4,97 tons per year (the most recent available data is from 2014).<sup>[8]</sup> This is the amount of greenhouse gases emitted by an average human in a year, calculated in carbon dioxide equivalent. According to the data of the World Bank, the average life expectancy in the world in 2016 was 72 years.<sup>[9]</sup> Based on these, the following formula may be used to assess the yearly GHG emissions prevented by the work of the BOCS Foundation in 2016.

**Number of unborn unwanted children x average carbon footprint (tCO<sub>2</sub>e/year) x average life expectancy (years)**

2016: 36 520 tCO<sub>2</sub>e

Since the per capita carbon footprint may be predicted to decrease, we take the following into consideration to make our calculations more precise: in 2011, the European Communities agreed that compared to the levels of 1990, they will reduce their carbon emissions by 20% by 2020, by 40% by 2030, by 60% by 2040, and by 80% by 2050.<sup>[10][11]</sup> According to the IPCC's Fourth Assessment Report, this level of reduction has to be reached on a global scale in order to achieve the main goal of the Paris Agreement, which is limiting global average temperature increase at 2°C, compared to pre-industrial levels.<sup>[12]</sup>

Globally, the 1990 per capita carbon footprint was 4,19 tonnes, and now it is 4,97, which is 119% of the former. The expected 2050 global per capita carbon footprint will be 0,84 tonnes, which is 17% of the 2014 level. Between 2014 and 2050, we are assuming that emission levels will decrease according to a linear function, from 4,97 tonnes per year to 0,84 tonnes per year, and then it will stabilize at that level. If we would like to express these values in a geometric way, we would get the following graph:



**Therefore, the above value changes to 13 204 tCO<sub>2</sub>e (See: Appendix 1)**

## Positive effects beyond emission prevention

**Preventing accidental pregnancies has further beneficial effects, which we haven't taken into consideration, since we have only calculated its climate protection potential:**

- Prevention of the unwanted births not only decreases the carbon footprint, but the other components of ecological footprint as well. We haven't taken into consideration the additional 40% of the per capita ecological footprint above the carbon footprint, and the easing that is bound to be experienced in the case of natural protection and environmental protection (e.g. less poison and pollution in the biosphere, and overburdening eases in the fields of biodiversity, soils, forests, water bodies, infrastructure, energy, etc.).

- We haven't taken into consideration that besides preventing the unwanted births, a lot of abortions, miscarriages, maternal and infant deaths are also prevented, while maternal and infant health is improved at the same time. According to the UNFPA, preventing 1000 unintended pregnancies also prevents 306 abortions, 15 child deaths, and 2 maternal deaths.<sup>[13]</sup>

- We haven't taken into consideration the beneficial effects of preventing accidental pregnancies on the quality of life and society: less unwanted children and overburdened parents suffering from psychological pain and stress, reduced crime rates and occurrences of violent conflicts, reduced poverty and gender inequality, more girls are able to learn and acquire an income, and besides all of these, democracy and communication works more reliably in a smaller population.

- We haven't taken into consideration its positive economic effects: suppressing the population explosion eases the budgetary burdens of public health, education, social safety net, infrastructure, law enforcement and environmental protection. According to the UNFPA, every dollar spent on family planning, the health service of the given country directly saves one and a half dollars (which would have been spent on delivering birth and prenatal care related to the unintended pregnancies).<sup>[13]</sup>

### Sources:

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- [7] Ibid, p. 37.
- [8] CO<sub>2</sub> emissions (metric tons per capita), The World Bank Group,  
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<https://data.worldbank.org/indicator/SP.DYN.LE00.IN>
- [10] Andreas Kraemer, Roadmap for a Low-Carbon Economy by 2050, 2011,  
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- [12] Gupta, S.; et al., "Chapter 13: Policies, instruments, and co-operative arrangements", Box 13.7 The range of the difference between emissions in 1990 and emission allowances in 2020/2050 for various GHG concentration levels for Annex I and non-Annex I countries as a group , in IPCC AR4 WG3 2007
- [13] UNFPA Supplies Annual Report 2017, UNFPA, 2017, 9. o.,  
[https://www.unfpa.org/sites/default/files/pub-pdf/UNFPA\\_Supplies\\_Annual\\_Report\\_2017\\_FINAL.pdf](https://www.unfpa.org/sites/default/files/pub-pdf/UNFPA_Supplies_Annual_Report_2017_FINAL.pdf)

### Appendix 1

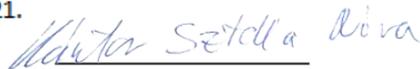
Year	Carbon footprint (t)	Carbon legacy of prevented unwanted births by year (t)			Carbon legacy (t)
		2015	2016	2017	
1990	4,19				
2015	4,86	1 000,17			1 000,17
2016	4,74	976,53	483,52		1 460,05
2017	4,63	952,88	471,82	240,53	1 665,23
2018	4,51	929,24	460,11	234,57	1 623,91
2019	4,40	905,59	448,40	228,60	1 582,59
2020	4,28	881,95	436,69	222,63	1 541,27
2021	4,17	858,30	424,98	216,66	1 499,95
2022	4,05	834,66	413,28	210,69	1 458,62
2023	3,94	811,01	401,57	204,72	1 417,30
2024	3,82	787,37	389,86	198,75	1 375,98
2025	3,71	763,72	378,15	192,78	1 334,66
2026	3,59	740,08	366,45	186,82	1 293,34
2027	3,48	716,43	354,74	180,85	1 252,01
2028	3,36	692,78	343,03	174,88	1 210,69
2029	3,25	669,14	331,32	168,91	1 169,37
2030	3,13	645,49	319,61	162,94	1 128,05
2031	3,02	621,85	307,91	156,97	1 086,73
2032	2,90	598,20	296,20	151,00	1 045,40
2033	2,79	574,56	284,49	145,03	1 004,08
2034	2,67	550,91	272,78	139,07	962,76
2035	2,56	527,27	261,07	133,10	921,44
2036	2,44	503,62	249,37	127,13	880,12
2037	2,33	479,98	237,66	121,16	838,79
2038	2,22	456,33	225,95	115,19	797,47
2039	2,10	432,69	214,24	109,22	756,15
2040	1,99	409,04	202,53	103,25	714,83
2041	1,87	385,40	190,83	97,28	673,51
2042	1,76	361,75	179,12	91,32	632,18
2043	1,64	338,10	167,41	85,35	590,86
2044	1,53	314,46	155,70	79,38	549,54
2045	1,41	290,81	144,00	73,41	508,22
2046	1,30	267,17	132,29	67,44	466,90
2047	1,18	243,52	120,58	61,47	425,57
2048	1,07	219,88	108,87	55,50	384,25
2049	0,95	196,23	97,16	49,53	342,93
2050	0,84	172,59	85,46	43,57	301,61
2051	0,84	172,59	85,46	43,57	301,61
2052	0,84	172,59	85,46	43,57	301,61
2053	0,84	172,59	85,46	43,57	301,61
2054	0,84	172,59	85,46	43,57	301,61
2055	0,84	172,59	85,46	43,57	301,61
2056	0,84	172,59	85,46	43,57	301,61
2057	0,84	172,59	85,46	43,57	301,61
2058	0,84	172,59	85,46	43,57	301,61
2059	0,84	172,59	85,46	43,57	301,61
2060	0,84	172,59	85,46	43,57	301,61
2061	0,84	172,59	85,46	43,57	301,61

2062	0,84	172,59	85,46	43,57	301,61
2063	0,84	172,59	85,46	43,57	301,61
2064	0,84	172,59	85,46	43,57	301,61
2065	0,84	172,59	85,46	43,57	301,61
2066	0,84	172,59	85,46	43,57	301,61
2067	0,84	172,59	85,46	43,57	301,61
2068	0,84	172,59	85,46	43,57	301,61
2069	0,84	172,59	85,46	43,57	301,61
2070	0,84	172,59	85,46	43,57	301,61
2071	0,84	172,59	85,46	43,57	301,61
2072	0,84	172,59	85,46	43,57	301,61
2073	0,84	172,59	85,46	43,57	301,61
2074	0,84	172,59	85,46	43,57	301,61
2075	0,84	172,59	85,46	43,57	301,61
2076	0,84	172,59	85,46	43,57	301,61
2077	0,84	172,59	85,46	43,57	301,61
2078	0,84	172,59	85,46	43,57	301,61
2079	0,84	172,59	85,46	43,57	301,61
2080	0,84	172,59	85,46	43,57	301,61
2081	0,84	172,59	85,46	43,57	301,61
2082	0,84	172,59	85,46	43,57	301,61
2083	0,84	172,59	85,46	43,57	301,61
2084	0,84	172,59	85,46	43,57	301,61
2085	0,84	172,59	85,46	43,57	301,61
2086	0,84	172,59	85,46	43,57	301,61
2087	0,84	153,60	85,46	43,57	282,62
2088	0,84		85,46	43,57	129,02
2089	0,84			43,57	43,57
<b>Total carbon legacy (t)</b>		<b>27 476,43</b>	<b>13 204,46</b>	<b>6 528,75</b>	<b>47 209,64</b>

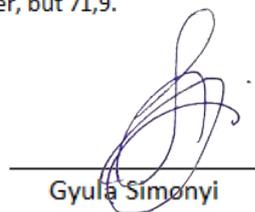
Number of prevented unwanted births			Total
2015	2016	2017	
206	102	52	360

Note: In the case of year 2015, the field with the last year of carbon legacies display 90% of the value in the field above, to indicate that average life expectancy in 2015 was not a round number, but 71,9.

Date: 2018. October 21.



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