

BOCS Foundation

CO₂e-emission prevention

2015-2016 report

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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.^{[1][2]}

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). 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 between 2015 and 2016.

The BOCS Foundation's public benefit expenditures between 2015 and 2016 was 11 596 000 HUF. 20% of these costs is viewed as indirect costs (e.g. bookkeeping, etc.), so we only calculate with 80% of them.

2015: 7554 thousand HUF → 80%-a: 6 043 thousand HUF

2016: 4042 thousand HUF → 80%-a: 3 234 thousand HUF

Valorization

It is expedient to take inflation into consideration, which causes earlier expenditures to worth more in the present. This lets us use the findings of a recent report about the efficiency of inputs for past expenditures. This kind of inflation compensation may be calculated using the valorization multipliers. According to the Appendix 1 of the 69/2017. (III. 31.) government regulation^[3], the above values change in the following way compared to the 2016 levels:

2015: 6043 thousand HUF → $\times 1,078 = 6 515$ thousand HUF

2016: 3234 thousand HUF → $\times 1,000 = 3 234$ 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 2016 report of the Guttmacher Institute, at a global level, the average cost of preventing an accidental teenage pregnancy for a year is 128,33 USD, or 32 923 HUF.^[4] (USD-HUF exchange rate on 2017-09-01: 256,55)

If calculating using this exchange rate, the BOCS Foundation's public benefit expenditures resulted in **296 prevented accidental pregnancies in the last 2 years.**

By year:

2015: 198

2016: 98

Prevented Unwanted births

What percentage of the accidental pregnancies ends with the birth of the unwanted child? In 2008, for example, globally, out of 208 233 thousand pregnancies, 102 034 thousand resulted in the birth of the wanted child (49%), 41 million resulted in abortion (20%), **33,3 million resulted in the birth of the unwanted child (16%),** and 31 million in miscarriage (15%).^[5] The ratio of intended pregnancies was 59%, and that of the unintended pregnancies was 41% (85 375 thousand).^[6]

We can calculate the ratio by dividing the number of unwanted children born (33,3 million per year) with the number of unintended pregnancies (85,3 million per year). Based on this, 39% of the accidental pregnancies result in the birth of the unwanted child. Therefore, 39% of the 296 accidental pregnancies prevented by the work of the BOCS Foundation in the last 2 years would have resulted in the birth of the unwanted child, which means that the Foundation successfully prevented **115 unwanted births** during this period.

By year:

2015: 77

2016: 38

Calculations of prevented GHG emissions

Although the activity of BOCS has a global effect, is mainly conducted in Hungary, so in the next step, we are going to use Hungarian data. **This simplification is decreasing the result, because the world average (4,97 t/capita) is higher than the Hungarian average.** According to the World Bank, the Hungarian carbon footprint is 4,27 tons

per year (the most recent available data is from 2014).^[7] This is the amount of greenhouse gases emitted by an average Hungarian in a year, calculated in carbon dioxide equivalent. According to the most recent, 2015 data of the WHO, the average life expectancy in Hungary is 75,5 years.^[8] Based on these, the following formula may be used to assess the yearly GHG emissions prevented by the work of the BOCS Foundation in the last 2 years.

Number of unborn unwanted children x Hungarian average carbon footprint (tCO₂e/year) x average life expectancy (years)

By year:

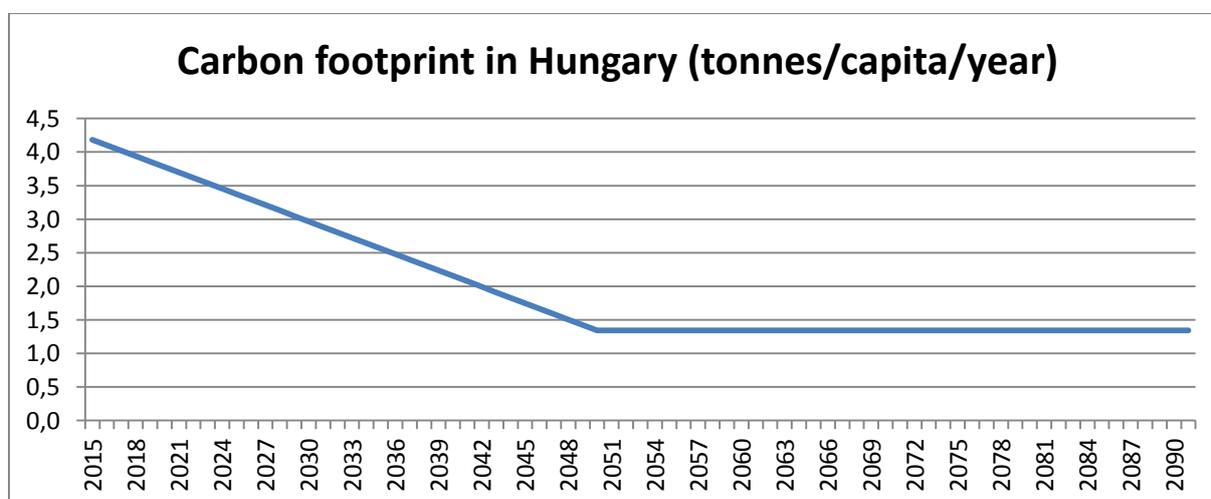
2015: 24 800 tCO₂e

2016: 12 239 tCO₂e

Total: 1 088 318 tCO₂e

Since the per capita carbon footprint changes from year to year, 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.^{[9][10]} If this objective is successfully met by Hungary as well, then by 2050, per capita emissions will drop to the third of the 2014 level.

In Hungary, the 1990 per capita carbon footprint was 6,71 tonnes, and now it is 4,27, which is 63% of the former. Thus, the current level roughly equivalent to the 2030 objective. The expected 2050 Hungarian per capita carbon footprint will be 1,34 tonnes, which is 31% of the 2014 level. Between 2014 and 2050, we are assuming that emission levels will decrease according to a linear function, from 4,27 tonnes per year to 1,34 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:



Thus, the above value changes to 17 433 tCO₂e (See: Appendix 1)

By year:

2015: 11 745 tCO₂e

2016: 5688 tCO₂e

Total: 17 433 tCO₂e

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.

- 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.

This report is not including the huge amount of voluntary work, what is a permanent driving force of the BOCS Foundation for decades. (There were even not any employee before 2003.)

Furthermore this report is not including the huge amount of costs out of the BOCS budget, financed directly by different inviting organisations and cooperative projects (e.g. travel, accommodation, lodging etc. costs of our work with them).

Sources:

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<http://www.kozlonyok.hu/nkonline/MKPDF/hiteles/MK17048.pdf>
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- [5] Singh S et al., Abortion Worldwide: A Decade of Uneven Progress, New York: Guttmacher Institute, 2009., p. 39.,
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- [8] WHO statistics of Hungary: <http://www.who.int/countries/hun/en/>
- [9] . Andreas Kraemer, Roadmap for a Low-Carbon Economy by 2050, 2011,
<http://ecologic.eu/3960>
- [10] 2050 low-carbon economy, European Commission Climate Action, Climate strategies & targets, https://ec.europa.eu/clima/policies/strategies/2050_en

Appendix 1

Year	Carbon footprint (t)	Carbon legacy of prevented unwanted births by year		Carbon legacy (t)
		2015	2016	
1990	6,71			
2015	4,18	322,23		322,23
2016	4,10	315,98	155,94	471,91
2017	4,02	309,72	152,85	462,58
2018	3,94	303,47	149,77	453,24
2019	3,86	297,22	146,68	443,90
2020	3,78	290,97	143,59	434,56
2021	3,70	284,72	140,51	425,22
2022	3,62	278,46	137,42	415,89
2023	3,54	272,21	134,34	406,55
2024	3,45	265,96	131,25	397,21
2025	3,37	259,71	128,17	387,87
2026	3,29	253,45	125,08	378,53
2027	3,21	247,20	122,00	369,20
2028	3,13	240,95	118,91	359,86
2029	3,05	234,70	115,82	350,52
2030	2,97	228,44	112,74	341,18
2031	2,89	222,19	109,65	331,84
2032	2,80	215,94	106,57	322,51
2033	2,72	209,69	103,48	313,17
2034	2,64	203,43	100,40	303,83
2035	2,56	197,18	97,31	294,49
2036	2,48	190,93	94,22	285,15
2037	2,40	184,68	91,14	275,82
2038	2,32	178,42	88,05	266,48
2039	2,24	172,17	84,97	257,14
2040	2,15	165,92	81,88	247,80
2041	2,07	159,67	78,80	238,46
2042	1,99	153,41	75,71	229,13
2043	1,91	147,16	72,63	219,79
2044	1,83	140,91	69,54	210,45
2045	1,75	134,66	66,45	201,11
2046	1,67	128,41	63,37	191,77
2047	1,59	122,15	60,28	182,44
2048	1,51	115,90	57,20	173,10
2049	1,42	109,65	54,11	163,76
2050	1,34	103,40	51,03	154,42
2051	1,34	103,40	51,03	154,42
2052	1,34	103,40	51,03	154,42
2053	1,34	103,40	51,03	154,42
2054	1,34	103,40	51,03	154,42
2055	1,34	103,40	51,03	154,42
2056	1,34	103,40	51,03	154,42
2057	1,34	103,40	51,03	154,42
2058	1,34	103,40	51,03	154,42

2059	1,34	103,40	51,03	154,42
2060	1,34	103,40	51,03	154,42
2061	1,34	103,40	51,03	154,42
2062	1,34	103,40	51,03	154,42
2063	1,34	103,40	51,03	154,42
2064	1,34	103,40	51,03	154,42
2065	1,34	103,40	51,03	154,42
2066	1,34	103,40	51,03	154,42
2067	1,34	103,40	51,03	154,42
2068	1,34	103,40	51,03	154,42
2069	1,34	103,40	51,03	154,42
2070	1,34	103,40	51,03	154,42
2071	1,34	103,40	51,03	154,42
2072	1,34	103,40	51,03	154,42
2073	1,34	103,40	51,03	154,42
2074	1,34	103,40	51,03	154,42
2075	1,34	103,40	51,03	154,42
2076	1,34	103,40	51,03	154,42
2077	1,34	103,40	51,03	154,42
2078	1,34	103,40	51,03	154,42
2079	1,34	103,40	51,03	154,42
2080	1,34	103,40	51,03	154,42
2081	1,34	103,40	51,03	154,42
2082	1,34	103,40	51,03	154,42
2083	1,34	103,40	51,03	154,42
2084	1,34	103,40	51,03	154,42
2085	1,34	103,40	51,03	154,42
2086	1,34	103,40	51,03	154,42
2087	1,34	103,40	51,03	154,42
2088	1,34	103,40	51,03	154,42
2089	1,34	103,40	51,03	154,42
2090	1,34	51,70	51,03	102,72
2091	1,34		25,51	25,51
Total carbon footprint (t)		11 745,38	5 688,43	17 433,81

Number of prevented unwanted births		Total
2015	2016	
77	38	115

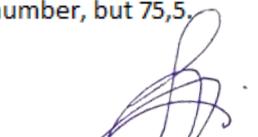
Note: Fields with the last years of carbon legacies display half of the values in the fields above them, to indicate that average life expectancy was not a round number, but 75,5.

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