



## “Carbon Footprint of Alexandria University”

(2020 / 2021)

Over the past few years, the interest in global warming and climate change has increased being significantly one of the dangers facing human life and the Earth's ecosystems because of its impact on the basic elements of life:

- ✓ Production of food and water and the impact on public health.
- ✓ Use of physical and natural capitals.
- ✓ The social consequences that may affect human well-being and impede progress and economic growth for our present and future generations.

Consequently, countries and people have realized that the time has come to work towards facing these challenges and trying to mitigate the effects of climate change.

Since the late 1990s, due to the emissions of greenhouse gases from human production and consumption activities, the term “Ecological Footprint” has become popular, from which the term “**Carbon Footprint**” was later derived, which describes the rate of carbon dioxide emission at various levels (e.g. individuals, institutions, factories and even countries), and it is usually expressed in ton of carbon dioxide emissions per year (CO<sub>2</sub> Ton/Year).

This indicator sheds light on the impact of human activities on the environment, specifically on climate change, which infers the negative contribution to increasing environmental loads.

**Carbon footprint is measured in order to:**

1. Evaluate the institution by comparing the environmental services provided with the level of demands on the biosphere, in order to save natural resources.
2. Encourage decision makers and individuals to incorporate environmental care into their daily practice to maintain a healthy and sustainable environment for a long time.

3. The carbon footprint has the ability to transform sustainability from a vague concept into a measurable goal, which is a global approach that seeks to preserve the environmental resources available to the individual from excessive consumption.

The "Sustainable Development Strategy: Egypt's Vision 2030" represents an essential station in the comprehensive development process in Egypt and is intended to improve the quality of life at the present time without prejudice to the rights of future generations to a better life. Accordingly, Egypt was one of the countries that signed the climate agreement established in Paris during the year 2015, which entered into force at the beginning of the year 2020, and thus it became necessary for Egypt to confront climate change and reduce the effects of rising temperatures by reducing the quantities of gases emitted and causing global warming to levels that can be plants, trees, soil and oceans can absorb it naturally.

Although the percentage of Egypt's contribution to global emissions of greenhouse gases is small, it has become significantly increased over the past few decades. Reports of international organizations and bodies issued during the past few years indicated that Egypt is among the most vulnerable countries in the world to the effects of climate change in the Mediterranean region. As a result, Egypt is expected to suffer from a shortage of water quotas, drought and a lack of crops productivity, increasing desertification, rising sea levels, losses in tourism resources, and so on.

The increased demand for water combined with the possibility of a decrease in the total flow of the Nile makes agriculture particularly vulnerable to climate change. Furthermore, since most of Egypt's agriculture takes place in the Nile Delta, which lies below sea level and along the Mediterranean coast, sea level rise has the potential to affect crops and their productivity. High salinity water is more likely to infiltrate the delta, which could render existing croplands unsuitable for production and significantly affect fisheries in lakes in and around the delta. Higher temperatures and changing rainfall patterns would have different effects on primary crops in Egypt. For example the yields of crops such as wheat,



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rice, maize and citrus may decrease between 10-20 % by changing the incidence of plant pathogens due to changing rainfall patterns and high temperatures, and this negatively affects local production, which is estimated at 12% of the total production.

Based on these facts, **Alexandria University**, as an effective public educational institution, is keen to perform its duty towards the local environment and believing in its responsibility towards achieving the state's vision (Egypt Vision 2030 for Sustainable Development). In this view, Alexandria University has took the initiative to work on reducing carbon emissions as one of the most important sources of greenhouse gases and has implemented a plan to record and calculate the first “**Carbon Footprint Report 2018 / 2019**” in its various colleges and administrative buildings as one of the forms of contribution in determining vision and decision-making.

**This year (2020/2021), a comparison of total CO<sub>2</sub> emission of faculties and institutes to that of the first carbon footprint report (2018/2019) has been made as follows:**

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Faculty/Institute	The total carbon footprint (2018/2019)	The total carbon footprint (2020/2021)
University Administration Building	186.2	NA
Faculty of Arts	66.46	235.887
Faculty of Commerce	47.29	412.128
Faculty of Education	27.048	21.807
Faculty of Medicine	13731.52	1817.232
Faculty of Dentistry	69.278	705.702
Faculty of Engineering	521.076	693.748
Faculty of Agriculture	4875.12	1326.267
Faculty of Pharmacy	394.462	318.059
Faculty of Science	749.7	317.362
Faculty of Nursing	169.912	122.79
Faculty of Veterinary Medicine	106.611	186.221
Higher Institute of Public Health	20.616	12.646
Medical Research Institute	203.7	555.478
Institute of Graduate Studies and Research	21.629	10.92
Faculty of Physical Education for girls	543.296	277.671
Faculty of Physical Education for boys	1679.1	214.835
Faculty of Specific Education	15.866	12.069
Saba Pasha Faculty of Agriculture	214.748	92.785
Faculty of Education for Early Childhood	13.403	33.4747
Faculty of Fine Arts	126.219	22.654
Faculty of Tourism and Hotels	47.420	9.924
Faculty of Economic studies & Political Science	26.313	NA
Faculty of Law	290.969	141.668

<b>Total footprint calculation in Faculties and Institutes of Alexandria University</b>	<b>24148 CO<sub>2</sub>e</b>	<b>7541.33 CO<sub>2</sub>e</b>
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This report came out as a result of the concerted efforts of the academic community of Alexandria University during the academic year 2018-2019 in collecting, analyzing and editing this report in accordance with international standards and controls for carbon footprint calculations.

In order to allocate the specific position of Alexandria University regarding the extent of its contribution to carbon emissions among similar institutions, it was necessary for to compare these emissions with other universities around the world.

University	Last Carbon Footprint Report	Carbon Footprint Total value
American University in Cairo (AUC)	2018	42,989
Cape Town University (Republic of South Africa)	2018	75,187
Arizona University (USA)	2017	258,088
Alexandria University (Egypt)	2018	24,148
Alexandria University (Egypt)	2020	7541.33

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2.11 Total carbon footprint (CO<sub>2</sub> emission in the last 12 months, in metric tons)

7541.33 metric tons

Justification: Due to the covid-19 pandemic, a lot of activities - consuming energy and increasing the carbon footprint- were cancelled, or replaced by an electronic alternative, thus decreasing the resultant total carbon footprint for the year (2020/2021) in comparison to (2018/2019).

2.12 Total carbon footprint divided by total campus population (metric tons per person)

7541.33 / 212403 = 0.0355

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