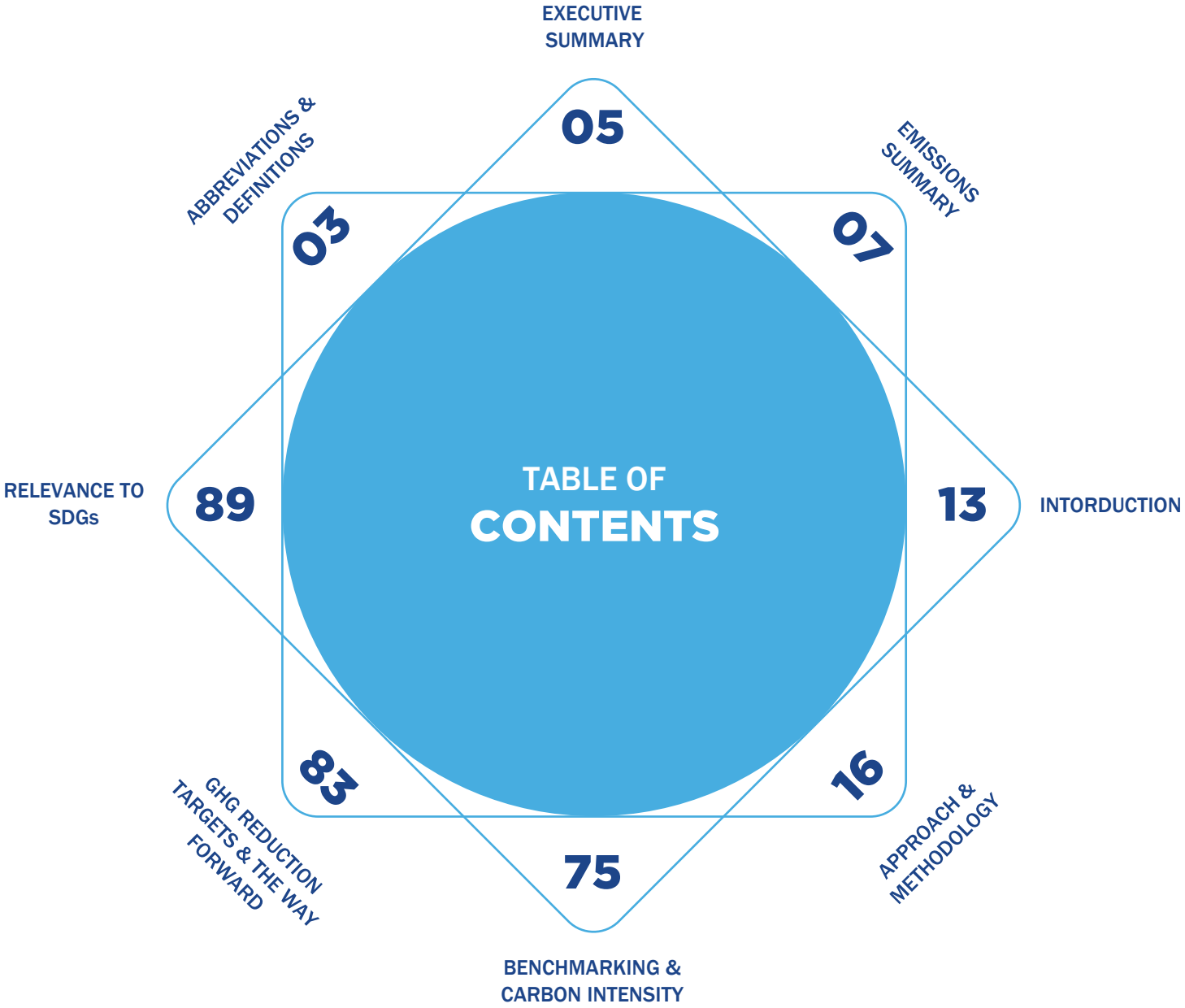
Juhayna Food Industries

CARBON FOOTPRINT REPORT 2019

Juhayna
CARING EVERYDAY since 1983

TABLE OF CONTENTS



ABBREVIATIONS & ACCRONYMS

AC	Air Conditioner
AFOLU	Agriculture, Forestry, and Other Land Use
BTU	British Thermal Unit
BUR	Biennial Update Report
CDM	Clean Development Mechanism
CDP	Carbon Disclosure Project
CFP	Carbon Footprint
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DALY	Disability-adjusted life year
DEFRA	Department for Environment, Food & Rural Affairs
DOM	Dead Organic Matter
EBIT	Earnings Before Interests and Taxes
EF	Emission Factor
GHG	Greenhouse Gases
GWP	Global Warming Potential
Ha	Hectare
HCWW	Holding Company for Water and Wastewater
HQ	Headquarters
HVAC	Heating, Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
kWh	Kilowatt hour
L	Liter
LUC	Land Use Change
MMS	Manure Management System
$Mil	Million US Dollars
MWh	Megawatt hour
m^2	Square meter
m^3	Cubic meter
mt	Metric tons
$mtCO_2e$	Metric tons Carbon Dioxide equivalent
pKm	Passenger kilometer
SDG	Sustainable Development Goal
SDS	Sustainable Development Strategy
t	ton
tkm	Ton kilometer
tN	Ton Nitrogen
WTT	Well to Tank
yr	Year

DEFINITIONS & TERMINOLOGY

Baseline year	A historical year used to compare succeeding year's emissions.
Biogenic Carbon	Emissions related to the natural carbon cycle, as well as those resulting from the combustion, harvest, digestion, fermentation, decomposition or processing of biologically based materials. This includes CO_2 removals by soils and biomass following afforestation and reforestation.
Carbon Footprint	The quantity of Greenhouse gases (GHGs) expressed in terms of carbon dioxide equivalent (CO_2e), emitted into the atmosphere by an individual, organization, process, product or event from within a specified boundary in a certain timeframe.
CO_2 Sequestration	The capture and secure storage of carbon that would otherwise be emitted to or remain in the atmosphere.
CO_2e	Carbon dioxide equivalent – standardization of all greenhouse gases to reflect the global warming potential relative to carbon dioxide.
DALY	"Disability-adjusted life year" is the sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability
Direct Emissions	Greenhouse gas emissions from facilities/sources owned or controlled by the reporting company, e.g. generators, blowers, vehicle fleets.
Emission Factors	Specific values used to convert activity data into greenhouse gas emission values.
Indirect Emissions	Greenhouse gas emissions from facilities/sources that are not owned or controlled by the reporting company, but for which the activities of the reporting company are responsible, e.g. purchasing of electricity.
Kyoto protocol	It operationalizes the United Nations Framework Convention on Climate Change by committing industrialized countries to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets.
Refrigerant	A refrigerant is a substance or mixture, usually a fluid, used in a heat pump and refrigeration cycle.
Scope 1	Emissions from sources that are owned or controlled by the reporting company (i.e. any owned or controlled activities that release emissions straight into the atmosphere).
Scope 2	Emissions associated with the consumption of purchased electricity, heat or steam from a source that is not owned or controlled by the reporting company.
Scope 3	Emissions resulting from other activities. This includes transport fuel used by air business travel, and employee-owned vehicles for commuting to and from work; emissions resulting from courier shipment; emissions from waste disposal; … etc.
Species.year	A unit that refers to the number of local species lost, integrated over time (lost in a year).
USD2013	Monetary value of resources in United States Dollar reference to the year 2013.

EXECUTIVE SUMMARY

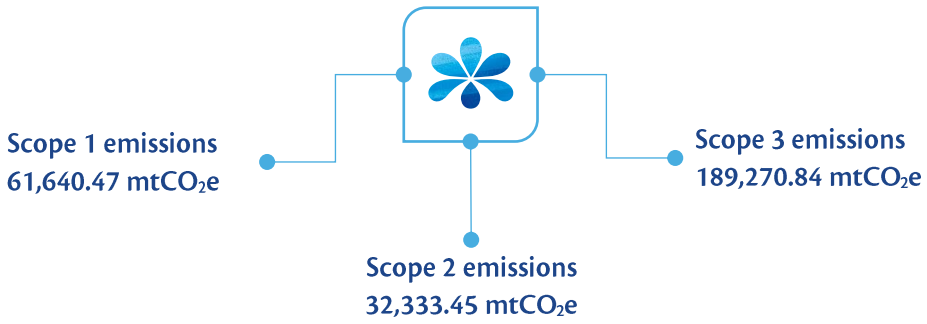
As one of the largest dairy and juice producers in Egypt, at Juhayna Group we are well aware of the present and future impacts of climate change. The Paris agreement has set an important global agenda for action on climate and we recognize it as an immense opportunity for our business to do the greater good, innovate towards the future and preserve a livable planet.

This Carbon Footprint Report sets our baseline for effective climate action, weaving together previous efforts, clearly outlining areas of our impact on climate, and highlighting necessary intervention points to drastically reduce GHG emissions in the following decades. The report provides a comprehensive account of the Juhayna Group GHG emissions, encompassing our farms, manufacturing, distribution, and headquarters.

The reporting period is from the 1st of January to the 31st of December 2019, covering GHG emissions of our main activities, embracing direct emissions from controlled equipment and assets, emissions from purchased electricity, and selected indirect emissions resulting from our operations. Based in Egypt, we export worldwide, and thus related emissions were also taken into account based on the data availability. The analysis and calculations were based on the Greenhouse Gas Protocol, the Intergovernmental Panel on Climate Change (IPCC) Guidelines for Greenhouse Gas Inventories, and the ISO 14064-1:2018 standards.

Reporting Period
01/01/2019
↓
31/12/2019

The total GHG emissions of our business as of 2019 were 283,244.76 $mtCO_2e$, including:



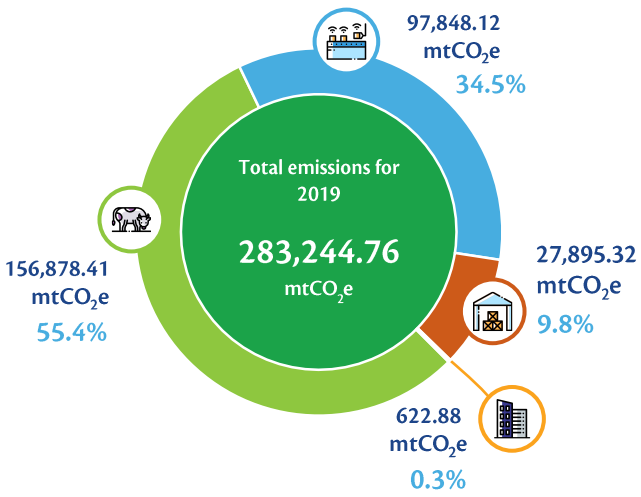
For biogenic carbon, the land-use change that took place at the time of reclamation of our cultivated lands had an impact on the carbon stocks and was accounted for under Land Use Change and Planted Trees. Biogenic carbon uptake was 23,027.40 $mtCO_2e$.

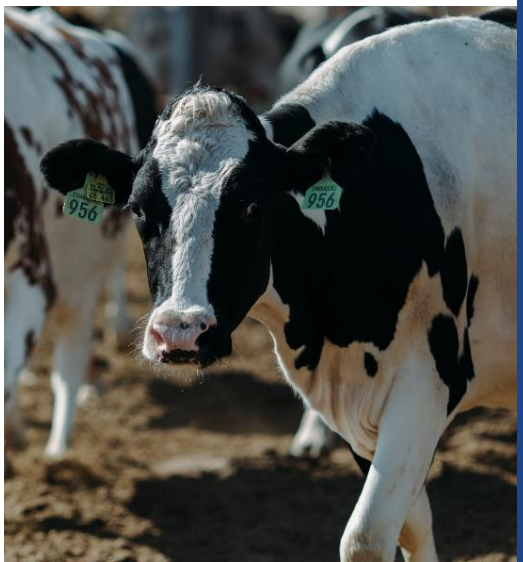
Biogenic CARBON
23,027.40 $mtCO_2e$

We also accounted for the installed PV modules that generate electricity at our dairy farm in Al-Bahariya Oasis, preventing the release of 484.41 $mtCO_2e$. Biogenic carbon uptake and avoided emissions from the installation of PV modules were not part of our main carbon footprint calculations and are presented separately in line with the GHG Protocol guidelines.

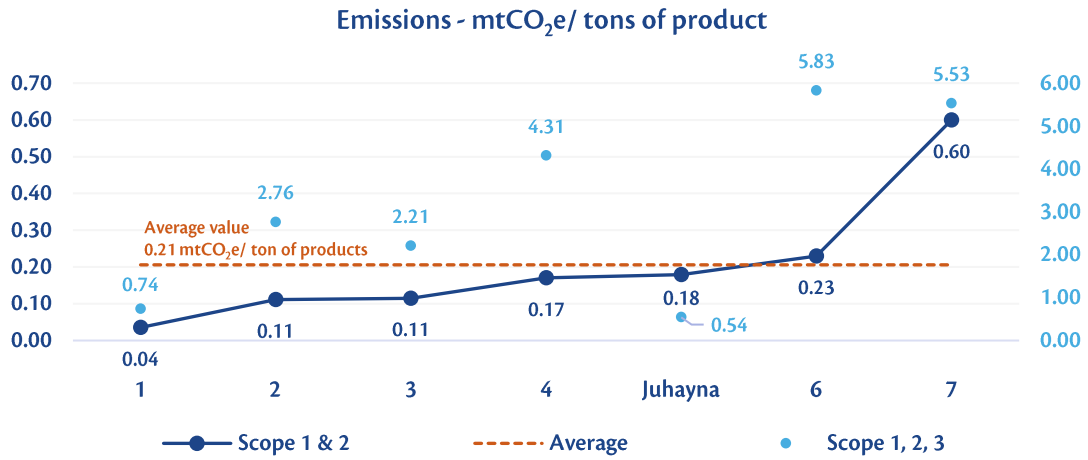
Avoided Emissions
484.41 $mtCO_2e$

Our total carbon footprint as distributed per operational boundaries includes: Farms – 156,878 $mtCO_2e$ (55.4%); manufacturing – 97,848 $mtCO_2e$ (34.5%); distribution centers – 27,895 $mtCO_2e$ (9.8%) and; headquarters – 622.88 $mtCO_2e$ (0.3%).



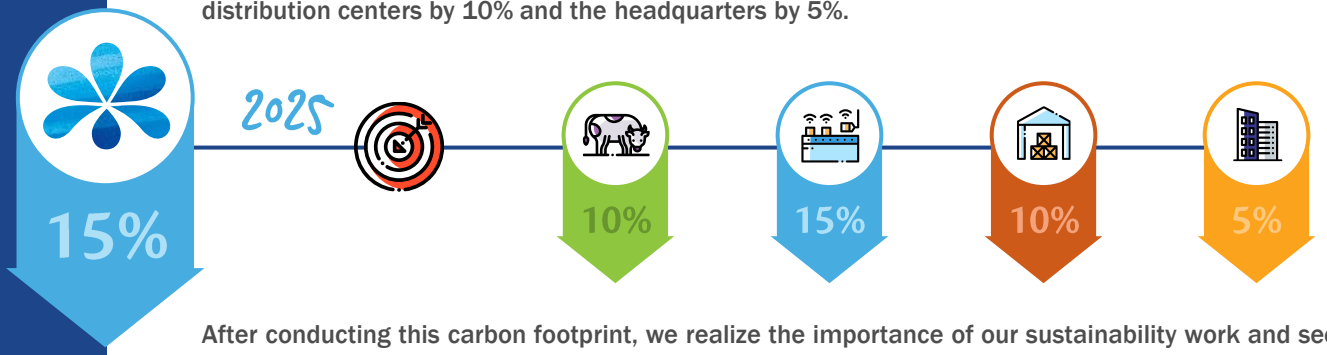


To know where we stand as a company, we have chosen to perform a benchmarking analysis. The benchmarking is accomplished in two steps, starting with an external benchmarking and continuing with an internal benchmarking. The external benchmarking is an indicative measurement, relating emissions (Scope 1 and 2) to the production output for comparison of various dairy companies, operating in different parts of the world. The lowest value observed was 0.04 $mtCO_2e$/ ton of products, with an average of 0.21 $mtCO_2e$/ ton of products. Scope 3 emissions have been also included as they reflect emissions that occur in the company's value chain, this might represent the company's biggest GHG impacts as well as significant opportunities for improvement.



While the internal benchmarking is performed to compare our performance within Juhayna's sectors. These values are mainly to keep track on our performance for upcoming years and to be able to follow our progress and find solutions that confirm with our business.

The reduction targets of GHG emissions for Juhayna's business have been set based on the internal benchmark analysis with the target completion year to be 2025. Considering the current carbon footprint being our first, 2019 is set as the fixed target base year. We aim to reduce our total GHG emissions by 15% and this would be possible by reducing the farms emissions by 10%, the factories by 15%, the distribution centers by 10% and the headquarters by 5%.



After conducting this carbon footprint, we realize the importance of our sustainability work and see that there is still room for improvements to be done. Therefore, we have set our way forward, suggesting a few major projects to be further explored and looking into opportunities to be implemented to decrease our carbon footprint and impact on the environment:

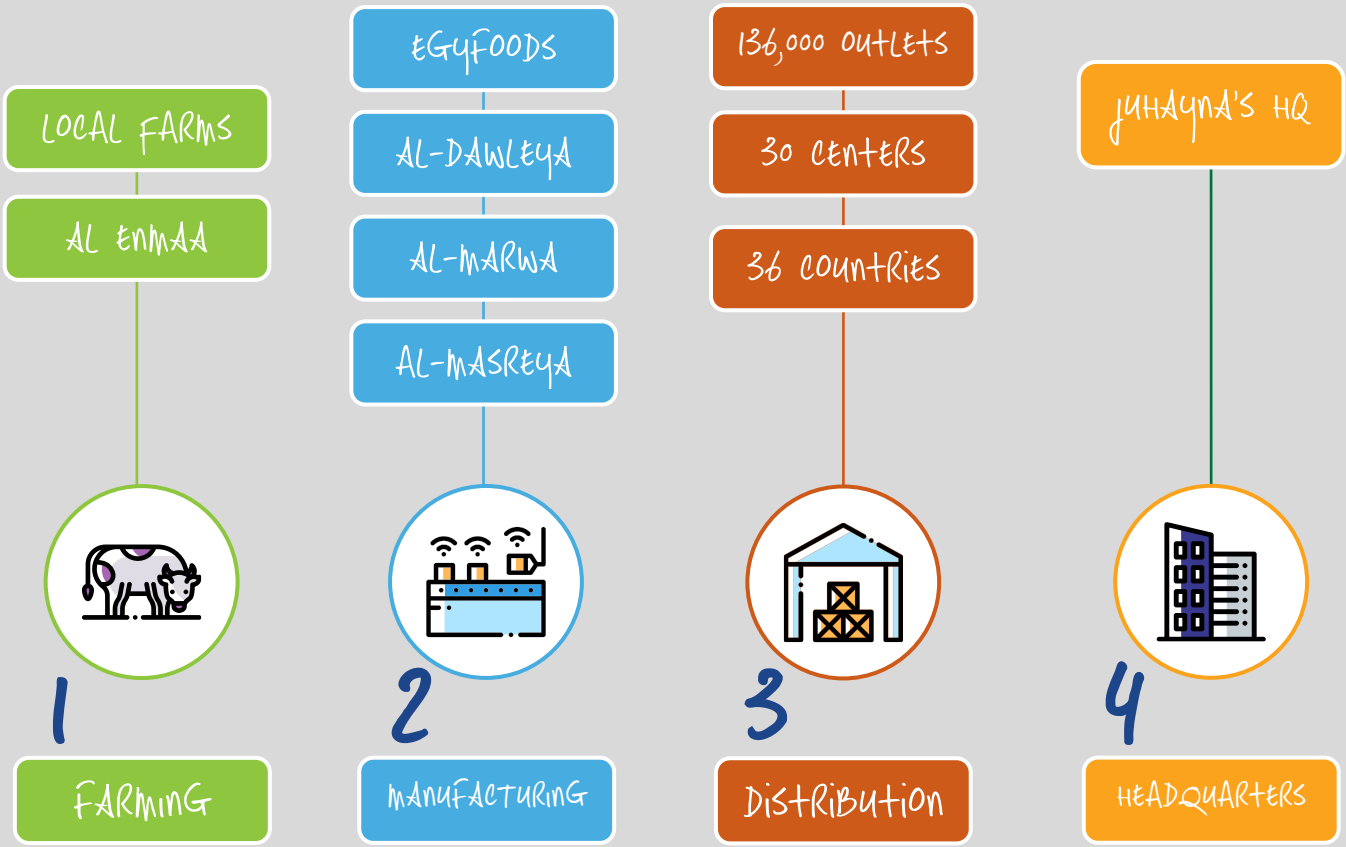
OUR WAY FORWARD

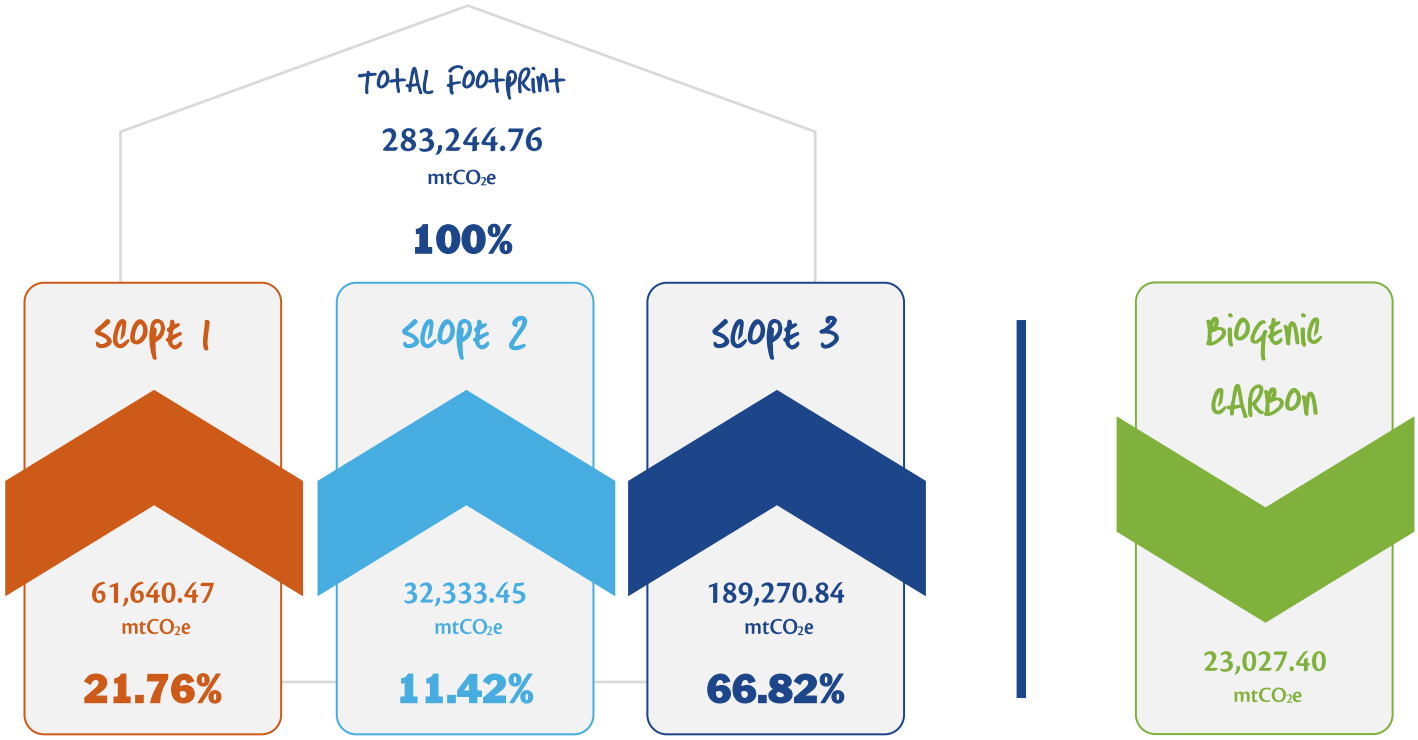
- CARBON FOOTPRINT MANAGEMENT SYSTEM
- ENERGY MANAGEMENT SYSTEM (EnMS)
- SOLAR WATER HEATERS AT OUR FACTORIES
- ELECTRIC-POWERED DISTRIBUTION FLEET
- REAL-TIME ENERGY MONITORING SYSTEMS
- BOOSTING OUR PV SOLAR STATIONS CAPACITY
- WASTE TO ENERGY AT AL-ENMAA FARM

The report also features an Environmental Impact Assessment of our activities across three areas of impact and highlights how our carbon footprint is linked to the 17 Global Sustainable Development Goals, adopted by the UN and Egypt vision 2030.

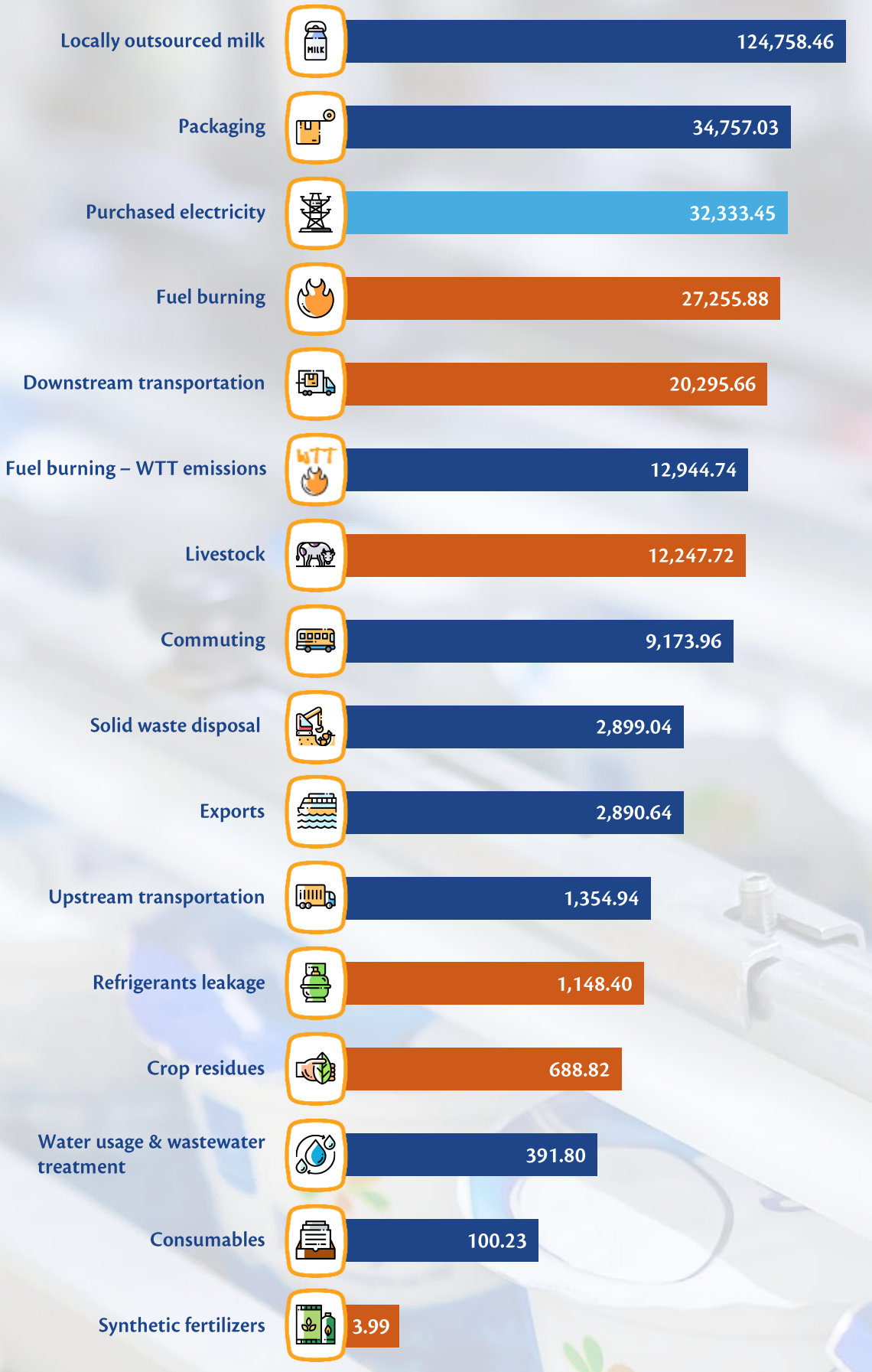
EMISSIONS SUMMARY

ORGANIZATIONAL BOUNDARIES





$mtCO_2e$


Locally outsourced milk
124,758.46
Packaging
34,757.03
Purchased electricity
32,333.45
Fuel burning
27,255.88
Downstream transportation
20,295.66
Fuel burning – WTT emissions
12,944.74
Livestock
12,247.72
Commuting
9,173.96
Solid waste disposal
2,899.04
Exports
2,890.64
Upstream transportation
1,354.94
Refrigerants leakage
1,148.40
Crop residues
688.82
Water usage & wastewater treatment
391.80
Consumables
100.23
Synthetic fertilizers
3.99
1
10
100
1,000
10,000
100,000

EMISSIONS SUMMARY

SCOPE 1* – DIRECT EMISSIONS 61,640.47 $mtCO_2e$ — 21.76%

ACTIVITY	$mtCO_2e$
■ Fuel burning	27,255.88
■ Downstream transportation	20,295.66
■ Livestock	12,247.72
■ Synthetic fertilizers	3.99
■ Crop residues	688.82
■ Refrigerants leakage	1,148.40

SCOPE 2* – INDIRECT EMISSIONS 32,333.45 $mtCO_2e$ — 11.42%

ACTIVITY	$mtCO_2e$
■ Purchased electricity	32,333.45

SCOPE 3* – INDIRECT EMISSIONS 189,270.84 $mtCO_2e$ — 66.82%

ACTIVITY	$mtCO_2e$
■ Commuting	9,173.96
■ Fuel burning – WTT emissions	12,944.74
■ Consumables	100.23
■ Water usage & wastewater treatment	391.80
■ Solid waste disposal	2,899.04
■ Exports	2,890.64
■ Packaging	34,757.03
■ Upstream transportation	1,354.94
■ Locally outsourced milk	124,758.46

TOTAL EMISSIONS FOR THE YEAR 2019

283,244.76 $mtCO_2e$

BIOGENIC CARBON* 23,027.40 $mtCO_2e$

ACTIVITY	$mtCO_2e$
■ Land use change (LUC)	22,473.99
■ Planted trees	553.41

AVOIDED EMISSIONS 484.41 $mtCO_2e$

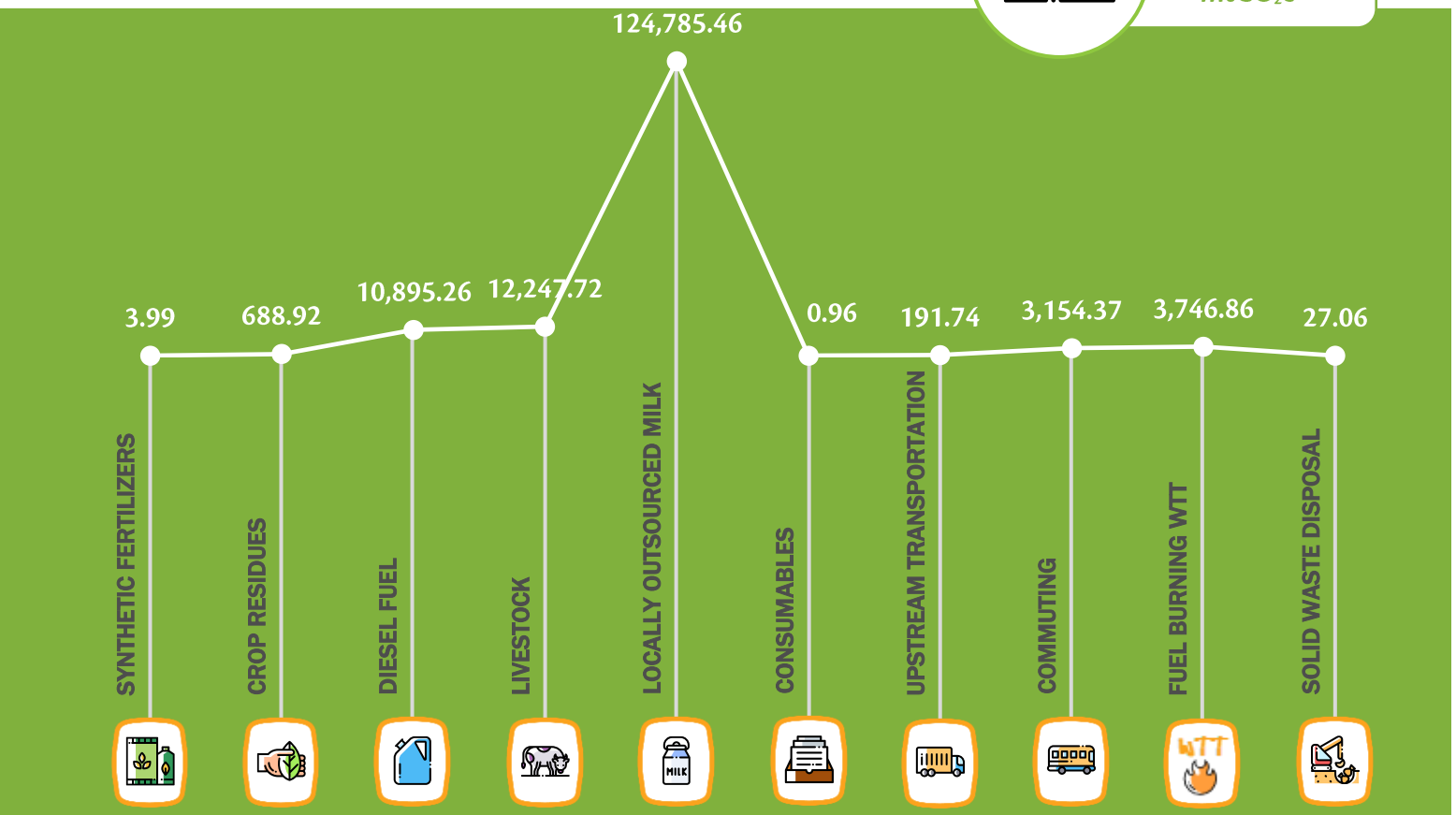
ACTIVITY	$mtCO_2e$
■ PV instead of Fuel Burning	391.29
■ PV - Fuel burning WTT	93.12

* For more information about the scopes, please refer to the “Operational Boundaries” section.

Emissions Summary (Continued)

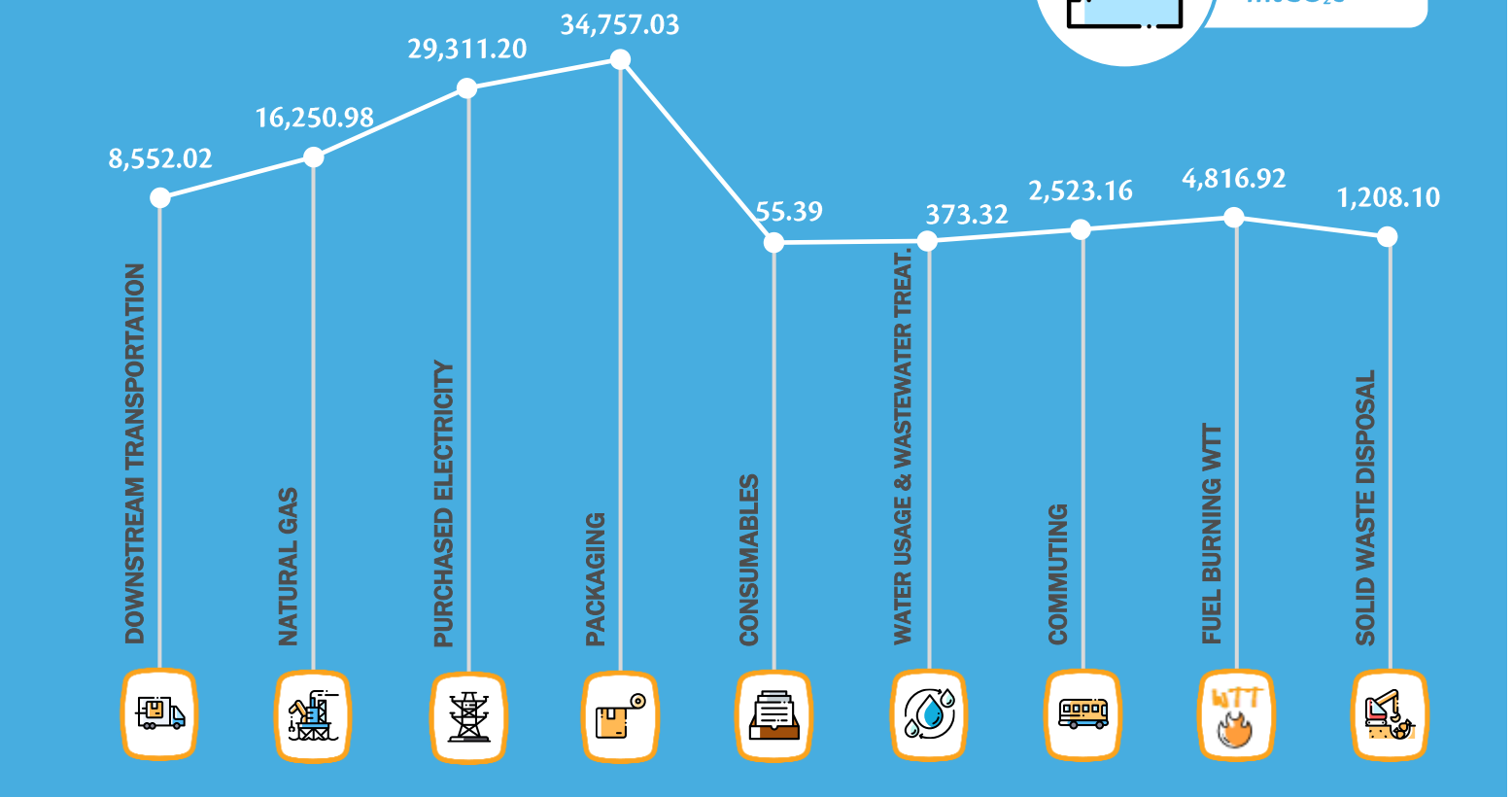
Farming Activities Summary ($mtCO_2e$)

156,878.41 $mtCO_2e$



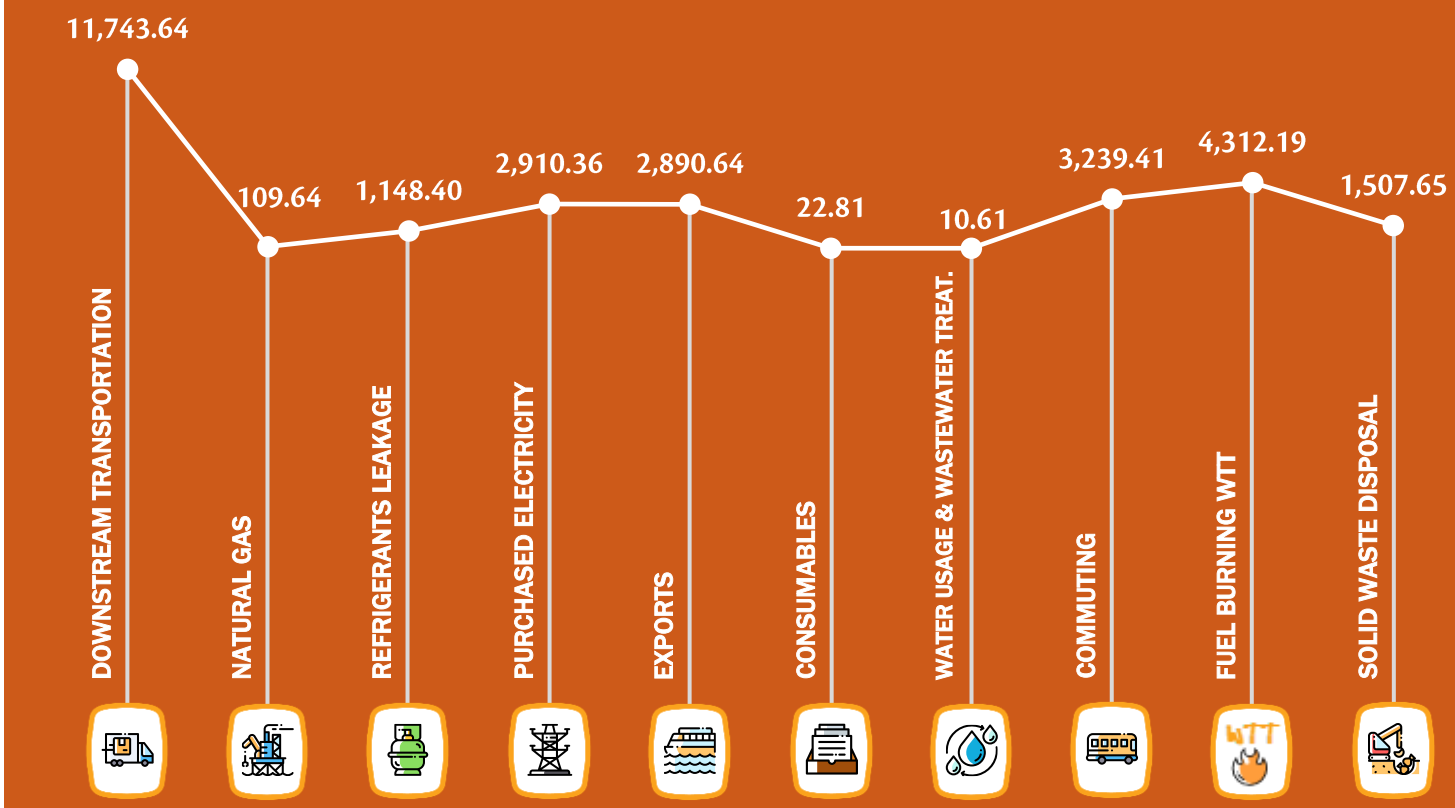
Manufacturing Activities Summary ($mtCO_2e$)

97,848.12 $mtCO_2e$



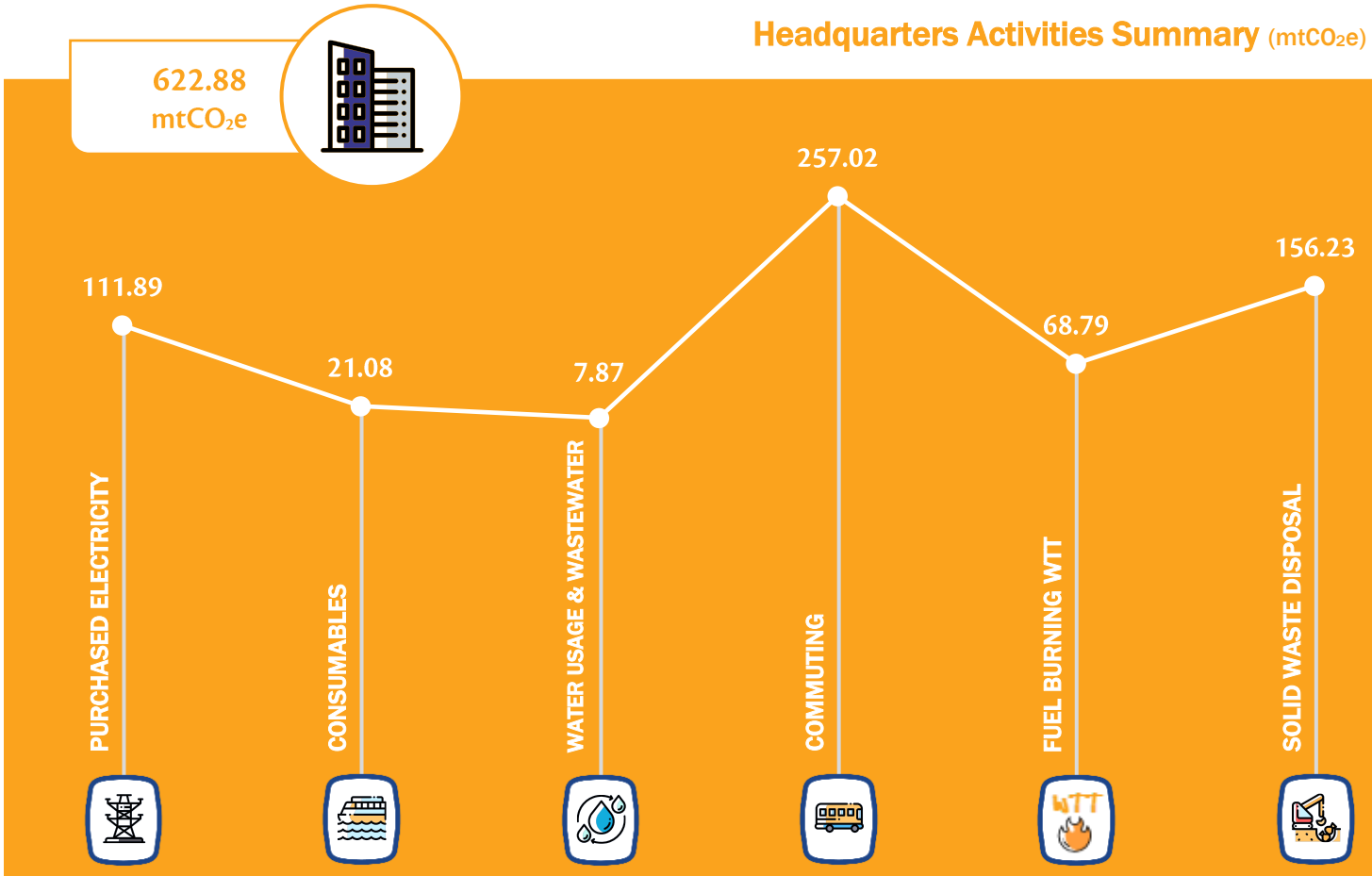
Distribution Activities Summary ($mtCO_2e$)

27,895.35 $mtCO_2e$



Headquarters Activities Summary ($mtCO_2e$)

622.88 $mtCO_2e$




Juhayna
جهينه
CARING EVERYDAY SINCE 1983
HALF CREAM
Milk
100%
نصف دسم
حليب
١٠٠% طبيعي
أنواع حليب جهينه
with Calcium & Vitamins

INTRODUCTION

Sustainability is at the heart of Juhayna Group, shaped through our commitment to people, planet, and purpose. We grow our business by combining responsibility and innovation, striving to generate positive social impact, and ensuring that our operations are compatible with a clean and healthy environment.

We are proud of how our products help to provide healthy and nutritious food for millions of people worldwide. At the same time, we are also acutely aware of the impacts dairy farming and agriculture have on our planet, requiring significant amounts of land, water, and other resources while generating a large share of the global GHG emissions. We perceive the tension between productivity and sustainability not as a downside but as an inspiration to act.

Throughout our history, spanning almost four decades, we have been driven by an urge to innovate and reach higher, to learn from our mistakes, and expand upon our achievements. To date, we have implemented a range of practices, contributing to our vision of creating a shared value, one that generates real benefits to a wide range of stakeholders.

Many of our activities contribute to reducing our carbon footprint. It starts from responsible sourcing from our affiliated dairy farms equipped with the most up-to-date technologies and all the way to the consumer, through a highly efficient distribution network. Throughout recent years we have also achieved improvements in energy efficiency and water savings, as well as have sustained effective waste management and responsible treatment of wastewater.

We are particularly proud of being the first company in Egypt to partner with a solar energy start up, Karm Solar, which allowed us to reduce our use of diesel and related emissions. We also collaborate with our packaging partners to increase the shelf life of food, which decreases the amount of waste and contributes to food security.

Meanwhile, we understand that further action is needed to effectively mitigate the current scale of climate change and to adapt our company to its irreversible impacts. This report has come out of a need for a solid baseline to understand our impacts and necessary areas of improvement. We hope it becomes our first step towards setting science-based targets for climate action and building a resilient and competitive business of the future.

We are inspired by the magnitude of global action on the Paris Agreement, despite all the challenges brought about by the COVID-19 pandemic. We believe that those overlapping crises require the business community to support a truly green recovery, empowered by climate-fit solutions and ambitious action by those who feed the world. We need a truly collaborative and holistic approach to climate action, encompassing technical and natural solutions; environmental stewardship, industrial innovation, and culture change.

At Juhayna Group, we are ready to embrace this responsibility and we hope that every next package of milk, yogurt, or juice we produce contributes to a more livable climate and a more sustainable future, step by step.

HOW MUCH DO WE EMIT?

APPROACH & METHODOLOGY

OVERVIEW

In order to communicate Juhayna Group's Carbon Footprint effectively and transparently, and with the utmost possible degree of precision with regards to the methodologies followed and the performed calculations and analyses, this report has been based on numerous international and widely used standards, protocols, and guidelines specifically made for accounting, understanding, and managing of Greenhouse Gases (GHGs) emissions, which include but is not limited to the following:

- The Greenhouse Gas Protocol Guidelines which include, but not limited to:
  - A Corporate Accounting and Reporting Standard
  - Corporate Value Chain (Scope 3) Accounting and Reporting Standard
  - GHG Protocol Agricultural Guidance - Interpreting the Corporate Accounting and Reporting Standard for the agricultural sector
- ISO 14064-1:2018, Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals
- 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for Greenhouse Gas Inventories (with 2019 Refinements), including specific reference to Volume 4 – Agriculture, Forestry, and Other Land Use (AFOLU).

> "ACTIVITY DATA TO CALCULATE OUR CARBON FOOTPRINT, ALL RELEVANT GHG EMISSIONS FROM PROCESSES AND ACTIVITIES OCCURRING UNIQUELY AT JUHAYNA'S OFFICES, DISTRIBUTION CENTERS, FACTORIES, AND FARMS WERE IDENTIFIED. ACTIVITY DATA WAS THEN COLLECTED, AND EXPLANATIONS WERE PROVIDED WHENEVER ACTIVITY DATA WAS NOT AVAILABLE OR NOT APPLICABLE TO JUHAYNA'S OPERATIONAL ACTIVITIES. RECOMMENDATIONS WERE ALSO MADE FOR FUTURE IMPROVEMENTS IN DATA RECORDING."

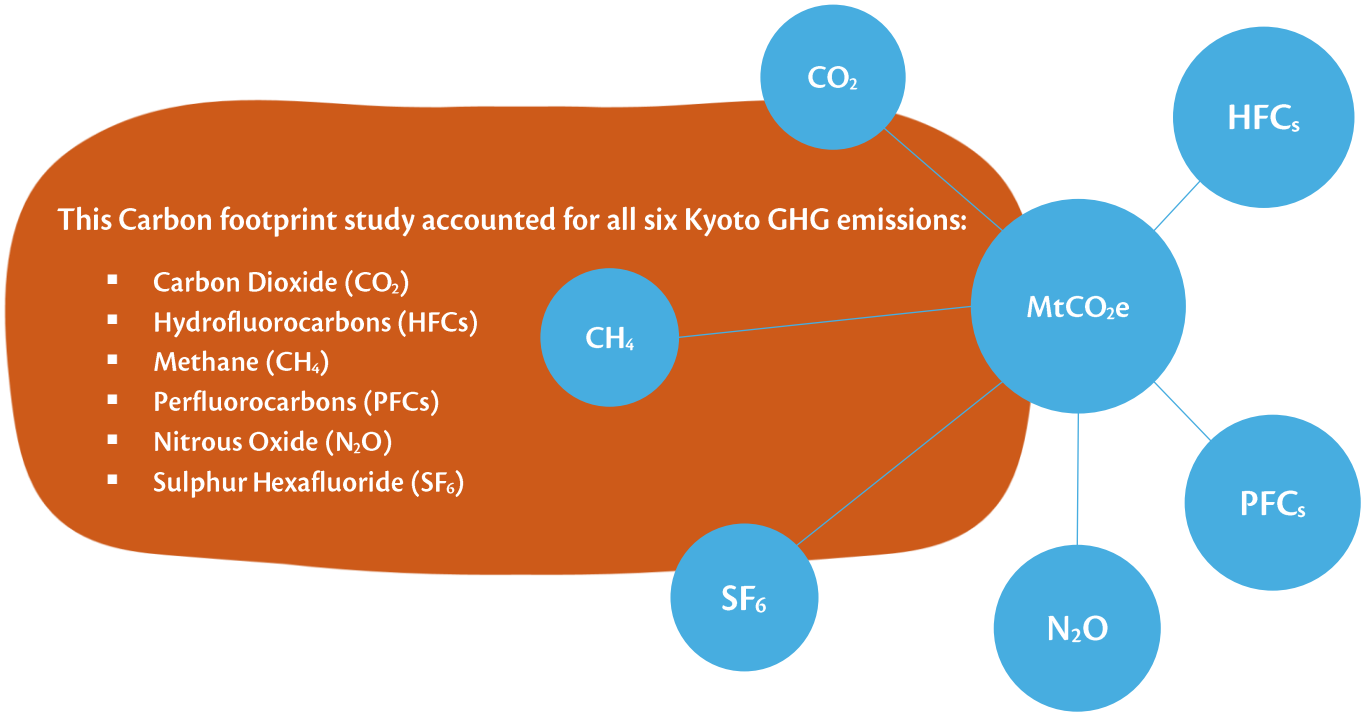
EMISSION FACTORS

Emission factors convert activity data (e.g. amount of fuel used, kilometers driven, and kilowatt-hours of purchased electricity) into a value indicating carbon dioxide equivalent (CO_2e) emissions generated by each activity.

The emission factors were identified based on:

- Department for Environment, Food & Rural Affairs UK (DEFRA)
- Intergovernmental Panel on Climate Change (IPCC) default emission factors
- Country specific emission factors (whenever they're available)

The emission factors represent CO_2e wherever possible. They convert the impact of each of the six GHGs covered by the Kyoto Protocol into a common unit of tons of CO_2e based on their Global Warming Potential (GWP). The GWP is a measure of how much heat the respective gas retains in the atmosphere over a given time horizon, based on the IPCC 100-years GWP coefficients.



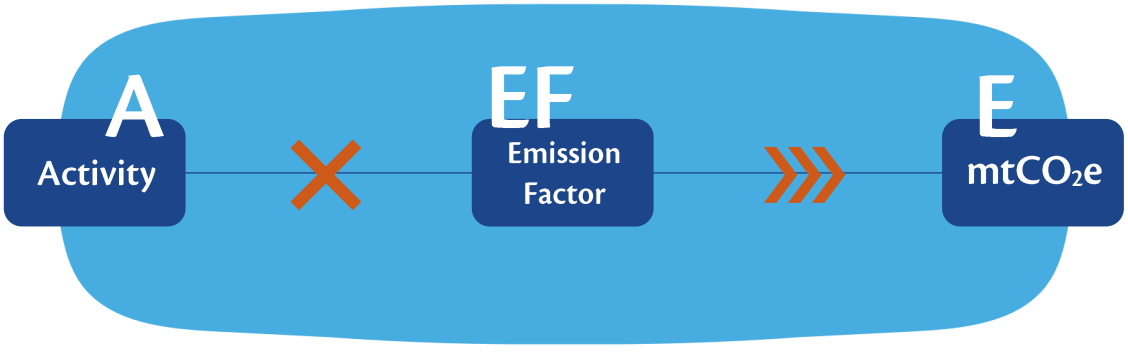
CALCULATION APPROACH

When calculating the CFP of Juhayna, the emissions of each activity have been considered. Each activity falls under a certain scope, which is described more in depth under each activity. The general calculation approach for the emissions, counted in $mtCO_2e$, is multiplying the activity with its corresponding emission factor. When doing this, a unit analysis is performed in order to make sure the results of the emissions are obtained in the desired unit $mtCO_2e$. The general formula for calculating the emissions for each activity is according to the below equation.

The unit of the GHG Emissions is metric tons carbon dioxide equivalent ($mtCO_2e$). The unit CO_2e refers to an amount of a GHG, whose atmospheric impact has been standardized to that one-unit mass of carbon dioxide (CO_2), based on the global warming potential (GWP) of the gas.

GHG Emissions, E [$mtCO_2e$] = Activity, A [unit] x Emission Factor, EF [$mtCO_2e$/unit]

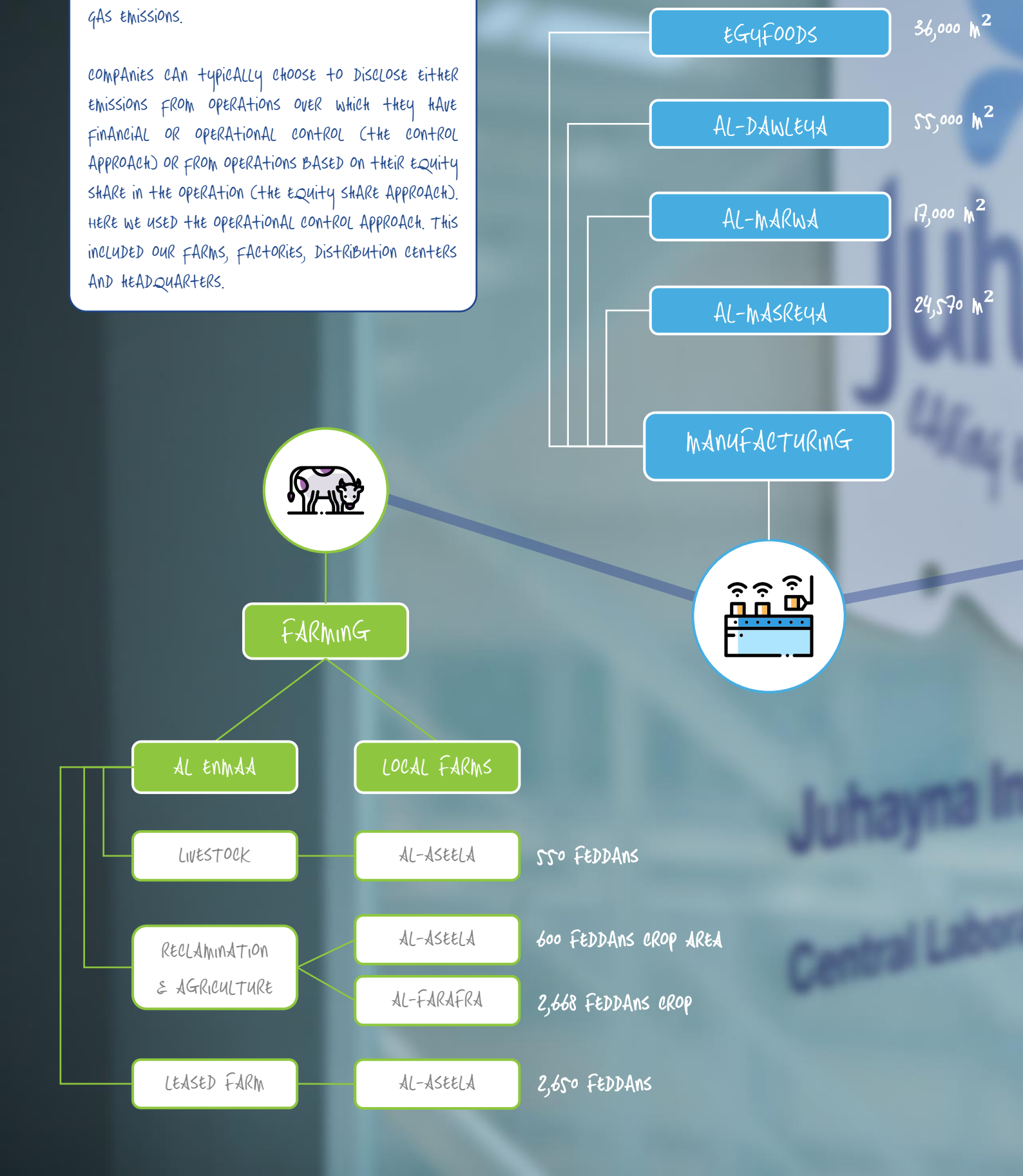
The general formula could be applied for each activity to obtain its emissions. All activities were calculated for the fiscal year, 2019. Thus, the emissions accounted for, were those of the total value for each activity in a single fiscal year.

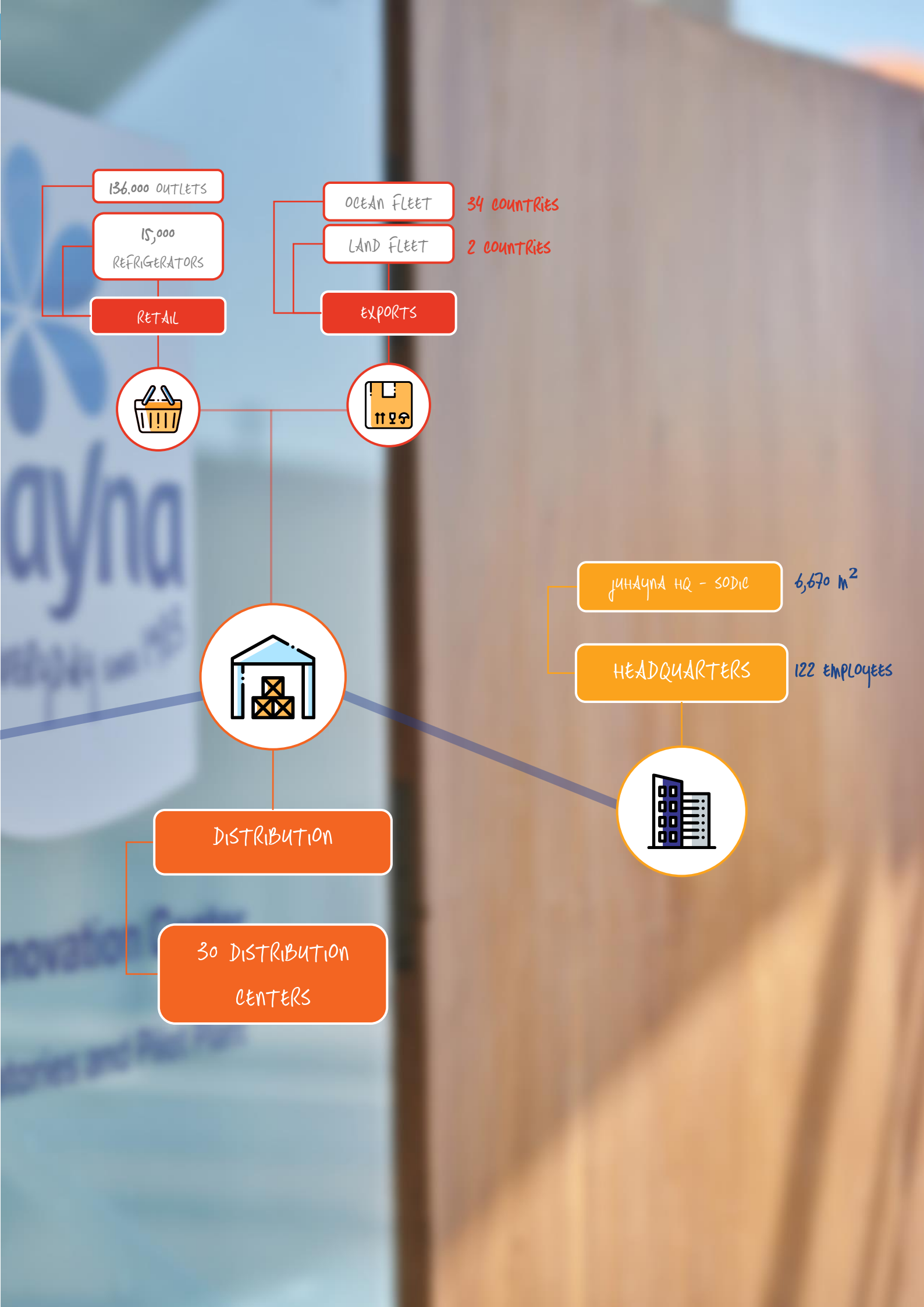


ORGANIZATIONAL BOUNDARIES

THE ORGANIZATIONAL BOUNDARY DEFINES THE BUSINESSES AND OPERATIONS THAT CONSTITUTE THE COMPANY FOR THE PURPOSE OF ACCOUNTING AND REPORTING GREENHOUSE GAS EMISSIONS.

COMPANIES CAN TYPICALLY CHOOSE TO DISCLOSE EITHER EMISSIONS FROM OPERATIONS OVER WHICH THEY HAVE FINANCIAL OR OPERATIONAL CONTROL (THE CONTROL APPROACH) OR FROM OPERATIONS BASED ON THEIR EQUITY SHARE IN THE OPERATION (THE EQUITY SHARE APPROACH). HERE WE USED THE OPERATIONAL CONTROL APPROACH. THIS INCLUDED OUR FARMS, FACTORIES, DISTRIBUTION CENTERS AND HEADQUARTERS.




136,000 OUTLETS
15,000 REFRIGERATORS
RETAIL
OCEAN FLEET
34 COUNTRIES
LAND FLEET
2 COUNTRIES
EXPORTS
JUHAYNA HQ - SODIC
6,670 m2
HEADQUARTERS
122 EMPLOYEES
DISTRIBUTION
30 DISTRIBUTION CENTERS

OPERATIONAL BOUNDARIES

This carbon footprint report of 2019 covers emitting activities of Juhayna's business. The emissions fall under different scopes; Scope 1, resulting from our owned or controlled equipment and assets, Scope 2 covering emissions from purchased electricity; and Scope 3 embracing selected significant indirect emissions resulting from Juhayna's operations.

It is of importance to highlight that in conformance with the GHG Protocol Corporate Standard, the reporting of both direct emissions (Scope 1) and indirect emissions resulting from purchased electricity (Scope 2), are mandatory to report. While emissions falling under Scope 3 are not; these are optional, and companies may choose which emissions to report. However, Scope 3 GHGs are the largest component of most organizations' carbon footprint and are therefore significant to include. For Juhayna Group's 2019 carbon footprint, the most central activities contributing to Scope 3 emissions were included in the calculations.

SCOPE 1

DIRECT EMISSIONS: EMISSIONS FROM SOURCES THAT ARE OWNED OR CONTROLLED BY THE REPORTING COMPANY (I.E. ANY OWNED OR CONTROLLED ACTIVITIES THAT RELEASE EMISSIONS STRAIGHT INTO THE ATMOSPHERE). THIS INCLUDES FUEL BURNED ON SITE FOR ENERGY, EMISSIONS FROM LIVESTOCK AT THE FARMS, APPLIED ORGANIC FERTILIZERS IN ADDITION TO SYNTHETIC FERTILIZERS, FUEL FOR OWNED VEHICLES AND DISTRIBUTION OF JUHAYNA'S PRODUCTS, NATURAL GAS CONSUMPTION AND REFRIGERANTS.

SCOPE 2

INDIRECT EMISSIONS: EMISSIONS ASSOCIATED WITH THE CONSUMPTION OF PURCHASED ELECTRICITY, HEAT OR STEAM FROM A SOURCE THAT IS NOT OWNED OR CONTROLLED BY THE REPORTING COMPANY. IN OUR CASE WE ONLY PURCHASED ELECTRICITY FROM THE GRID.

SCOPE 3

INDIRECT EMISSIONS: THE EMISSIONS FROM ACTIVITIES WHICH DO NOT FALL UNDER SCOPE 1 OR SCOPE 2 ARE INCLUDED IN SCOPE 3. THESE INDIRECT EMISSIONS ARE AS A CONSEQUENCE OF THE OPERATIONS OF THE ORGANIZATION BUT ARE NOT DIRECTLY OWNED OR CONTROLLED BY THE REPORTING COMPANY. THIS INCLUDES WATER CONSUMPTION AND WASTEWATER TREATMENT, SOLID WASTE DISPOSAL, LOCALLY OUTSOURCED MILK, CONSUMABLES, PACKAGING OF OUR PRODUCTS, EXPORTS, FUEL BURNING WELL-TO-TANK EMISSIONS, GOODS TRANSPORTATION FROM FARMS TO THE FACTORIES AND TO THE DISTRIBUTION CENTERS, AS WELL AS THE EMPLOYEE COMMUTING.

BIOGENIC CARBON

EMISSIONS RELATED TO THE NATURAL CARBON CYCLE THAT ORIGINATE FROM BIOLOGICAL SOURCES SUCH AS PLANTS, TREES, AND SOIL, AS WELL AS THOSE RESULTING FROM THE COMBUSTION, HARVEST, DIGESTION, FERMENTATION, DECOMPOSITION OR PROCESSING OF BIOLOGICALLY BASED MATERIALS. THIS INCLUDES CO_2 REMOVALS BY SOILS AND BIOMASS FOLLOWING AFFORESTATION AND REFORESTATION.

DATA QUALITY

The following section describes the quality of the data used to calculate the emissions arising from our activities in each of our 4 lines of businesses; Farming, Manufacturing, Distribution and our Headquarters. Assessment of the data pertaining to each of the sectors below has been performed separately to allow a better analysis and demonstration of assumptions, while the "General data" section contains the data relevant to all sectors for which the resolution and assumptions are common.

GENERAL DATA

Q	Activity	Resolution	Assumptions
	Consumables	Yearly consumption in units of hygiene disposable items, paper, printers, ink cartridges, envelopes... etc.	Specifications of items such as kind, material and weight
	Commuting	Survey of employee commuting per destination	-
	Waste by employees	NA	Generation rates of waste disposal by employees. All waste is approximated as landfilled municipal waste

FARMING

	Solid waste disposal	12-month average waste quantities per type per fate	-
	PV Generation	12-month average consumption	-
	Diesel fuel burning on-site	Total yearly consumption	-
	Goods and milk transportation from Juhayna's own farm to the factories	Average distance travelled per shipment and the number of shipments per day	The shipments took place 365 days per year from the farm to the factories, and the average distance travelled was measured using google maps
	Synthetic fertilizers application	Yearly amounts of the nitrogenous content of the fertilizer applied per unit area of each crop type	-
	Crop residue usage as organic fertilizers	Yearly amounts applied per unit area	The types of crop residues used are corn and wheat since these crop types would generate the most residue after harvesting, and the fraction of each from the total amount was based on the area ratio of both crops. The nitrogen content per ton of corn and wheat was estimated and used to calculate the associated emissions
	Planted trees	Number of trees, their age, and their area (perennial cropland area	-
	Livestock	Number and typical average mass of livestock per type	Assumed that 5% of the total quantity of manure generated by mature cows is handled using the Liquid/slurry MMS, based on the milking duration of the cows and the time spent in the milking parlor area
	Milk production at local farms not owned by Juhayna	Monthly quantities of milk outsourced from local farms in 2019	The emission factor used was calculated based on the total emissions from Juhayna's owned dairy farm (Al-Enmaa) divided by the total milk quantity produced at Al-Enmaa farm
	Land use change	Yearly cropland area per type of annual crop	Carbon stock gains and their related CO_2 removals were estimated only for the above-ground biomass in the annual cropland area following the first year after land conversion

MANUFACTURING

Q	Activity	Resolution	Assumptions
●	Electricity	Monthly consumption	-
●	Natural gas	Monthly consumption	-
●	Municipal water usage	Monthly consumption	-
●	Wastewater treatment	NA	An estimation has been done as 75% of water usage, by considering the total water usage of the factories
●	Solid waste disposal	Monthly waste quantities per type per fate	Material of plastics containers approximated as average plastics
●	Packaging	Daily production with corresponding package type	Material type and weight of packages. All plastic packages were approximated as average plastics
●	Transportation to TIBA (Distribution centers)	Monthly fuel consumption	-

DISTRIBUTION

●	Electricity	Monthly consumption	-
●	Natural gas	Yearly consumption	-
●	Municipal water usage	Yearly consumption	-
●	Exports	Weight of exports per country	Port to port distance travelled was calculated using sea routes
●	Refrigerants	Yearly consumption	One cylinder was assumed to be equal to 13.6 kg
●	Solid waste disposal	12-month average waste quantities per type per fate	-
●	Downstream transportation	Monthly distance and the corresponding fuel consumption	-

HEADQUARTERS

●	Electricity	Monthly consumption	-
●	Municipal water usage	Yearly amount paid	Calculated based on Egyptian commercial rates

● **Weak** – Priority area for improvement ● **Satisfactory** – Could be improved ● **Good** – No changes recommended

RELEVANCY & EXCLUSIONS

The following section describes the GHG emission sources and sinks that were excluded from Juhayna Group's GHG quantification due to data not being available, or not technically feasible to obtain or for data whose emission quantification is beyond Juhayna Group's operation and control. The exclusion rationale per category has also been specified.

CATEGORY	EXCLUDED EMISSIONS	RATIONALE
Consumable products at Juhayna's businesses	Emissions from chemical and other cleaning agents	Emission factors data was not available for the commercially used cleaning agents, in addition, the related emissions have been considered to be negligible.
Juhayna's sold products	Emissions related to the end of life treatment and disposal of Juhayna's sold products and their packaging	Data related to products and packaging disposal by the consumers was not feasibly obtainable and was considered to be beyond Juhayna's operation and control; hence, it was excluded.
Worldwide exports of Juhayna's products	Transportation emissions from: - Juhayna's factories to the distribution center and to the Egyptian port - Importing country's port to the distribution center(s) - Country's nearest port to landlocked importing country - El Marwa factory's export	Kilometrage data from the port to distribution centers of the importing country was not feasible to obtain in addition to being out of scope (beyond Juhayna's operation and control)
Waste disposal in Juhayna's farms	Municipal waste disposal emissions	Municipal waste was considered to be generated in minimal amounts since the dependency on packaged consumables and food is generally moderate
Juhayna's leased farmland at Al-Aseela	Energy, fuel and other direct and indirect emissions sources and sinks	No consumption data was available regarding the leased farmland; thus, it has been excluded, also since the emissions would have been considered in scope 3 for Juhayna.
Packaging and containers use at Al-Marwa Factory	Emissions related to using containers and packaging that are used during transporting juice concentrates to other factories to be consumer-packaged	Packaging and containers used at Al-Marwa Factory are of large capacities and are assumed to be reused frequently and not being replaced or disposed; hence, emissions were considered negligible compared to other consumables and materials used.
Juhayna's cultivated croplands	Emissions sequestered due to gain in carbon stocks in DOM (Dead Organic Matter) and organic soils	There was insufficient information to provide a default approach with default parameters to estimate the gain in carbon stocks in dead organic matter as well as organic soils
Juhayna's cultivated croplands	Indirect nitrous oxide emissions from managed soils and manure management	There was insufficient information to provide a default approach with default parameters to estimate these indirect emissions.

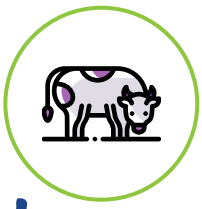
REPORTING PERIOD

01/01/2019 – 31/12/2019

"THE REPORTING PERIOD COVERS FROM THE 1ST OF JANUARY 2019 TO THE 31ST OF DECEMBER 2019. THIS IS THE FIRST REPORT FOR JUHAYNA; THEREFORE, 2019 WILL BE CONSIDERED THE BASELINE YEAR TO WHICH ALL FUTURE YEARS WILL BE REFERENCED."

OVERALL METHODOLOGY

As a dairy company, our business is separated into several sectors. There are (1) farms providing milk and crops, (2) factories where all of the products are manufactured, (3) distribution centers where products go to be dispensed, and (4) offices where the business is run.



1

FARMING

2

MANUFACTURING

3

DISTRIBUTION

4

HEADQUARTERS

The methodology of each activity of the total CFP is described below. There are similarities in the calculations for the different sectors of the business; the differences in approach and scope are thoroughly presented in this SECTION.

SCOPE 1 Activities

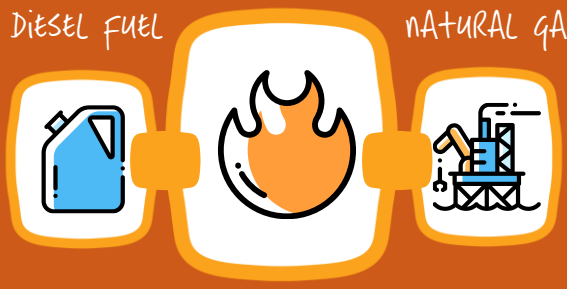
DOWNSTREAM TRANSPORTATION

CROP RESIDUES

SYNTHETIC FERTILIZERS

DIESEL FUEL

NATURAL GAS



FUEL BURNING

LIVESTOCK

REFRIGERANTS

Downstream transportation

Emissions resulting from our owned vehicles fall under scope 1 direct emissions. Those vehicles are used for the transportation of products from factories to distribution centers and finally to retail outlets (also known as downstream transportation).

Diesel fuel

Diesel fuel is used to operate mobile machinery such as harvesters, plowers, and other equipment that are used on our farms. In addition, diesel is consumed by the generators that supply most of our farms' electricity demands.

Every month, the fuel burned by our vehicles and in our farms is logged into our data base. The total amount of fuel consumed was multiplied by the corresponding emission factor to calculate direct emissions.

Fuel burning emissions ($mtCO_2e$) =
Fuel consumption (L) x EF ($mtCO_2e$/L)

Natural gas

Natural gas is used at the factories, as well as in the distribution centers. Since it is directly used by the owner, the emissions resulting from the consumption of natural gas were accounted for under scope 1.

The monthly consumption of natural gas in m^3 were retrieved from our data recordings. The emissions due to the natural gas consumption was calculated by multiplying the total annual amount consumed in m^3 by the corresponding emission factor.

Livestock

Our cattle herd at Al-Enmaa Dairy Farm had its own share of direct GHG emissions as a result of two main biological processes; enteric fermentation, and manure production. The emissions in mtCO2e resulting from both processes described below, were accounted for under scope 1.

The enteric fermentation process involves the breaking down of carbohydrates in the cattle's digestive tract in which methane is emitted as a byproduct.

The amount of methane emissions varies based on the type, age, and size of the cattle, in addition to the quality and type of feed intake, and the milking capacity. Additionally, the production and management system type of manure results in methane and nitrous oxide emissions which are influenced by the methods of treatment, storage, and handling of the manure.

The Manure Management Systems (MMS) adopted in our farm were analyzed, classified, and selected according to the IPCC classification system to determine the associated emissions. and were calculated using the IPCC Inventory Software following Tier 1 according to the IPCC Guidelines, which included specific parameters and emission factors that were selected based on the number of cattle per type, age, and size, in addition to the types of MMS adopted at our farm.

Refrigerants

Refrigerants are fluids used in refrigeration cycles to cool a space. We use refrigerants to cool our buildings, products and to recharge the refrigerators leased to supermarkets across Egypt. The refrigerant used is R-132 and its yearly consumption was retrieved from our database. The emissions corresponding to refrigerant leakage were accounted for under scope 1.

Refrigerants emissions ($mtCO_2e$) =
Refrigerants (kg) x EF ($mtCO_2e$/kg)

CROP RESIDUES

CROP RESIDUES WERE USED ON OUR FARMS AS NATURAL FERTILIZERS, THE AMOUNTS OF CROP RESIDUES USED PER ACRE WERE PROVIDED BY THE FARMS' OPERATIONS DEPARTMENT.

The nitrogen (N) content per ton of the crop residues for each crop type used was researched and estimated and was used to calculate the associated nitrous oxide emissions.

SYNTHETIC FERTILIZERS

SYNTHETIC FERTILIZERS WERE USED ON OUR FARMS IN MINIMAL AMOUNTS RELATIVELY ALONGSIDE OTHER NATURAL FERTILIZERS; HOWEVER, THE NITROUS OXIDE EMISSIONS RESULTING FROM THE NITROGEN CONTENT OF THE FERTILIZERS HAD TO BE ACCOUNTED FOR UNDER SCOPE 1.

Data on the nitrogen content by weight of the total annual amounts of synthetic fertilizers used per crop type were provided by the Farms' Operations Department. The emission factor and the GWP value used to determine the total nitrous oxide emissions in terms of $mtCO_2e$ were determined as per the IPCC Guidelines.

Fertilizers emissions ($mtCO_2e$) =

Amount of N per ton fertilizer (tN/yr) x EF (tN_2O/tN) x GWP (N_2O)

SCOPE 2 ACTIVITIES

PURCHASED ELECTRICITY

PURCHASED ELECTRICITY

PURCHASED ELECTRICITY FALLS UNDER SCOPE 2 (INDIRECT EMISSIONS). THE ELECTRICITY CONSUMPTION INCLUDES ALL JUHAYNA GROUP'S SECTORS EXCEPT FOR THE FARMS. THE ELECTRICITY USED AT THE FACTORIES, DISTRIBUTION CENTERS, AND HEAD OFFICE WERE ALL ACCOUNTED FOR.

The monthly electricity consumed at our factories, distribution centers and headquarters was retrieved from the electricity bills in kWh. Therefore, the total electricity consumption of the fiscal year was calculated using the formula below:

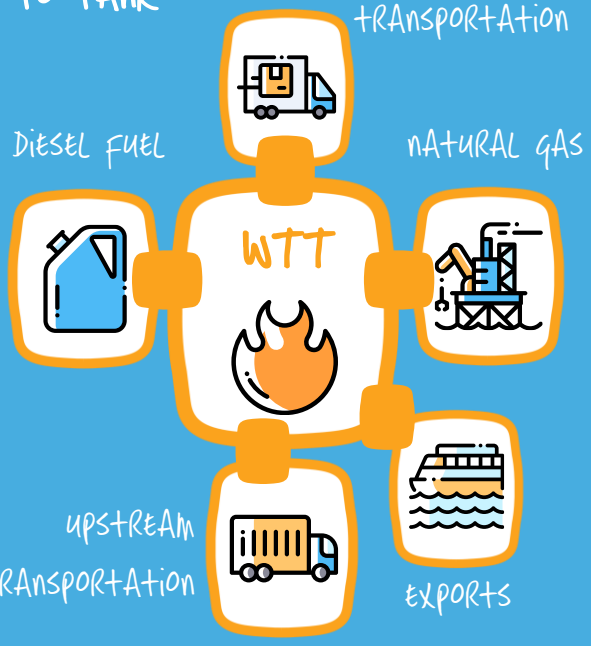
Electricity consumption emissions [$mtCO_2e$] =
Electricity consumption (MWh) x EF ($mtCO_2e$/MWh)

The country specific grid electricity emission factor was calculated based on the Clean Development Mechanism (CDM) Methodology. The emission factor is based on Egypt's fuel mix and power generation and the country's trends and strategies. Each fuel in the power generation is considered, where the Net Calorific Value (NCV) of the fuel is used to obtain the country specific grid emission factor.


جهينه
CARING EVERYDAY SINCE 1983
سهل الهضم
خالي من اللاكتوز
حليب
١٠٠% طبيعي
٣% دسم
بدون لبن بودرة
Milk
CATCH TWINS - SINCE 1964

Scope 3 Activities

Fuel Burning Well to Tank



Packaging

Locally Outsourced Milk

Commuting

Solid Waste Disposal

Exports

Consumables

Water Usage & Wastewater Treatment

Upstream Transportation

PACKAGING

OUR PRODUCTS ARE DELIVERED IN HIGH-QUALITY PACKAGES TO ENSURE THE QUALITY OF OUR PRODUCTS. THE PACKAGES VARY FOR THE DAIRY PRODUCTS, CONSISTING OF TETRA PAK FOR MILK, COOKING CREAM AND WHIPPING CREAM AND COMBIBLOC FOR JUICES, AMONG OTHERS FOR BUTTERMILK (RAYEB), YOGURT AND OUR OTHER PRODUCTS.

The quantities of packages were obtained from Juhayna's data recordings as daily outputs of all factories.

For all plastic packages, the weights were estimated and approximated as average plastics, where the emission factor was obtained from DEFRA. Regarding the packages of Tetra Pak, the related emissions were obtained from their online CO_2 calculator.

Emissions of packages ($mtCO_2e$) =
Σ quantity of packages (units) x EF of item ($mtCO_2e$/unit)

LOCALLY OUTSOURCED MILK

OUR DAIRY FARM SUPPLIED US WITH A SUBSTANTIAL 12% OF THE RAW MILK NEEDS FOR DAILY PRODUCTION WHILE THE REMAINING AMOUNTS WERE OUTSOURCED FROM EGYPT'S DAIRY FARMS OPERATING UNDER THE SUPERVISION AND AS PER JUHAYNA'S STANDARDS FOR DAIRY FARMING. THE EMISSIONS ARISING FROM THE MILK PRODUCTION PROCESS INCLUDING EMISSIONS FROM LIVESTOCK RAISED ON LOCAL FARMS, AND OTHER AGRICULTURAL-BASED ACTIVITIES, IN ADDITION TO THE TRANSPORTATION OF MILK FROM THE LOCAL FARMS TO JUHAYNA'S FACTORIES WERE ACCOUNTED FOR UNDER SCOPE 3 AS PER THE GHG PROTOCOL GUIDELINES.

The calculation methodology followed regarding the dairy farming activities' emissions included determining the appropriate emission factor per liter of milk, based on the total scope 1 emissions of Juhayna's owned dairy farm (Al-Enmaa for Livestock), this estimation was made based on the fact that all local farms operate under Juhayna Farms Network and as per Juhayna's dairy farming standards and operations framework.

Local outsourced milk production emissions ($mtCO_2e$) =
EF ($mtCO_2e$/liter of milk) x Total milk quantity outsourced (L)

commuting

employees and workers commute every day to and from work from different locations all over egypt. in order to account for the emissions resulting from this activity, a survey was distributed among all employees and workers.

Employees and workers commuting profile was developed based on the survey responses. The means of transportation include; private cars, buses, motorcycles and others such as walking, metro and Nile transportation. The daily distances were calculated for the cars, buses, and motorcycles in km multiplied by the working days and then multiplied by the corresponding emission factor to get the commuting emissions.

Commuting emissions ($mtCO_2e$) =
Working days x Distance travelled (km/day) x EF ($mtCO_2e$/km)

consumables

consumables are the commodities used by our different sectors. for the offices and distribution centers, this is considered to be the paper and ink cartridges used for printing. for the factories and farms the consumables consist of hygiene disposable items, such as gloves, head covers, face masks and lab coats. the resulting emissions fall under scope 3.

The yearly amounts of consumables per type have been retrieved from our factories' data recordings, as units of items. The emissions were obtained by multiplying the emission factor per unit by the number of items.

Emissions of consumables ($mtCO_2e$) =
Σ quantity of item (units) x EF of item ($mtCO_2e$/unit)

EXPORTS

AS A LEADING DAIRY AND JUICE MANUFACTURER IN EGYPT, WE EXPORT OUR PRODUCTS TO MORE THAN 35 COUNTRIES WORLDWIDE. THE EXPORTED PRODUCTS WERE TRANSPORTED VIA OCEAN ROUTES ON CONTAINER SHIPS. THE EMISSIONS RESULTING FROM MARINE AND LAND SHIPPING OF OUR PRODUCTS WERE ACCOUNTED FOR UNDER SCOPE 3.

The type, weight, and destination of each shipment were retrieved from our database. The distance travelled per shipment was then calculated using a port-to-port calculator. The distance travelled and the weight of each product were multiplied to produce the ton-km (tkm), which was then multiplied by the corresponding emission factor to produce the total emissions.

Only products exported to Libya and Palestine were loaded on trucks and transported via land routes.

Export emissions ($mtCO_2e$) =
Exported goods weight (t) x distance travelled (km) x container ship EF ($mtCO_2e$/tkm)

WATER USAGE & WASTEWATER TREATMENT

MUNICIPAL WATER IS CONSUMED AT OUR FACTORIES, HEADQUARTERS, AND DISTRIBUTION CENTERS, WHILE WATER CONSUMED AT OUR FARMS COMES FROM THE NATURALLY OCCURRING GROUNDWATER AT AL-BAHARIYA OASIS AND AL-FARAFRA OASIS. WATER SUPPLY AND WASTEWATER TREATMENT EMISSIONS ARE LINKED TO THE ELECTRICITY CONSUMED TO SUPPLY AND TREAT THE WATER.

The emissions associated with our farms' water consumption are linked to the electricity used for pumping the groundwater which is sourced from diesel generators and our solar energy station, which were accounted for in the energy and fuel consumption and is therefore not reflected/included in this section.

Municipal wastewater treatment is assumed to be 75% of the water consumption at the factories and 80% in the Headquarters. Naturally, some of the wastewater might not regress to the water system for water treatment and is therefore set to be 80% of the water consumption.

For the factories however, we have installed a water treatment system for part of our water usage. An estimation has been made based on the amount of water treated in the factories and total water usage, an estimation has been made for the municipal wastewater treatment to be 75%.

In the distribution centers, any milk or juice waste is accounted for as wastewater.

The emission factor for water supply and wastewater treatment is calculated by using a conversion formula, provided by Holding Company for Water and Wastewater (HCWW). The emissions are based on the amount of energy consumed in each process. The emission factors for water supply and wastewater treatment are accordingly calculated by multiplying the conversion factor by the electricity emission factor. At the same time, a unit analysis is performed to make sure the units are conforming.

SOLID WASTE DISPOSAL

We have a waste collection and disposal system, where the waste is collected from different locations to segregated waste areas, to then be hauled by waste disposal companies licensed by the "Environmental Agency". Having such a system in place could facilitate the waste tracking and data collection for determining the emissions related to the waste generated and disposed of at all our facilities.

Waste disposal emissions at Juhayna were accounted for under Scope 3. Different waste types are generated at our various facilities, starting from our farms, to our factories, distribution centers, and our Headquarters.

The emissions are associated with the transportation of the waste to recycling facilities in case of recycled waste, while for non-recycled waste, the emissions represent the 'gate to grave' process; which includes the collection, transportation and landfill process.

The emissions related to all the waste disposed at our facilities have been determined using the equations below, in case of recycled waste and non-recycled or landfilled waste, which is the product of the waste weight and the corresponding emission factor related to each waste type.

Recycled waste emissions ($mtCO_2e$) =
Waste weight [t] x EF $_{transportation}$ [$mtCO_2e/t$]

Landfilled waste emissions ($mtCO_2e$) =
Waste weight [t] x EF $_{collection, transportation, \& landfilling}$ [$mtCO_2e/t$]

The primary waste generated at our farms is agricultural waste including crops residue which are ploughed directly in the ground to improve the soil organic matter necessary for growing our high quality crops, and manure generated by the livestock part of which is used as natural fertilizer on our farms, and the remaining amounts are sold to other local farms. Other wastes such as plastics and metals are generated in smaller amounts and are sold to recycling facilities.

Several waste types are generated and disposed of at each of our four factories, including carton, plastics, metal scrap and wood pallets. Since the activities of each factory differ, the waste disposal varies accordingly as well. Most of the waste at the factories is measured in tons, except for plastic containers and blue drums, which are counted as units of items.

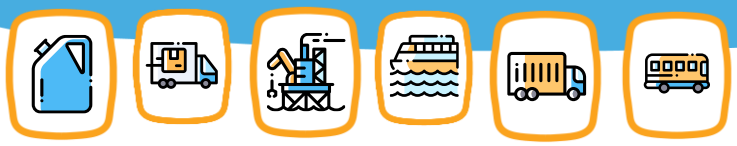
We operate 30 distribution centers and warehouses nationwide that shelter our manufactured goods before they're delivered to retailers around the country and exported abroad. Our distribution centers generate paper and cardboard, plastic, and liquid (milk & juice) waste. Solid waste disposal is used for paper and cardboard, and plastic, and wastewater treatment is used for all liquid waste.

Most of the waste generated at the headquarters were assumed to be landfilled, such as paper and cardboard, plastic bottles, and metal cans which account for a large portion of the total waste in offices.

Fuel Burning - Well to Tank

WTT

Well to Tank (WTT) are emissions resulting from production of a fuel, including resource extraction, initial processing, transport, fuel production, distribution and marketing, and delivery into the fuel tank of a consumer vehicle. We accounted for WTT emissions in order to capture the maximum climate impacts from fuel burning activities.



WTT emissions included all fuel burning activates such as, diesel consumed in our farms and distribution fleet, natural gas consumed in our factories, goods transportation from farms to factories and to distribution centers and fuel burned from marine and land shipping.

To calculate the related emissions, the general formula was used for each amount and type of fuel burned.

WTT emissions ($mtCO_2e$) =
Fuel burned quantity (unit) x WTT EF ($mtCO_2e$/unit)

Upstream Transportation

In order to ensure the sustainability of our core approach "Farm to Consumer" when it comes to the safe transportation of our fresh farms' produce from both Juhayna's owned farms and all other local dairy farms, we have a dedicated haulage subcontractor that transports daily shipments from our farm, in addition to supervising the transport of milk by the local farms.

The data used to calculate the associated emissions included the number of daily shipments, the average distance travelled from the farms to the factories, and the type of fuel used, for Juhayna's owned farm and for the local farms. Since our produce is transported by vehicles not owned by Juhayna, direct fuel burn from upstream transportation have been accounted for under scope 3 according to the GHG Protocol guidelines.

Upstream transportation emissions ($mtCO_2e$) =
No. of shipments/ day x No. of shipping days/year x Avg. distance travelled/shipment (km) x EF diesel ($mtCO_2e$/km)

Biogenic CARBON

LAND USE CHANGE

LUC

PLANTED TREES

LAND USE CHANGE (LUC)

OUR OWNED CULTIVATED ANNUAL AND PERENNIAL (PLANTED TREES) CROPLANDS AT AL-BAHARIYA OASIS AND AL-FARAFRA WERE RECLAIMED IN 2008 RESULTING IN LAND USE CHANGE FROM DESERT LAND TO A CROPLAND, WHICH RESULTED IN A NET GAIN IN THE LANDS' CARBON STOCKS.

The land use change calculations performed to account for the amount of carbon sequestered due to conversion of a desert land to a cropland, were done according to the most recent IPCC Guidelines. The calculation methodology followed Tier 1 method which involved the estimation of the gain in carbon stocks in above-ground biomass only.

Estimation of the net gain in carbon stocks included estimating the carbon in biomass immediately after conversion (assumed to be zero as per Tier 1), minus the carbon in biomass prior to conversion (amounts to zero for a desert land), plus carbon stocks from one year of growth in an annual cropland following the land conversion which was determined using IPCC's default value of "carbon stock in biomass after one year".

The equivalent reduction in CO_2 emissions were determined based on the ratio of molecular weights of CO_2 to C (44/12).

Sequestered carbon in annual cropland ($mtCO_2e$) =
Total annual cropland area (Ha) x Carbon stock in biomass after one year (tC/ Ha) x (44/12)

PLANTED TREES

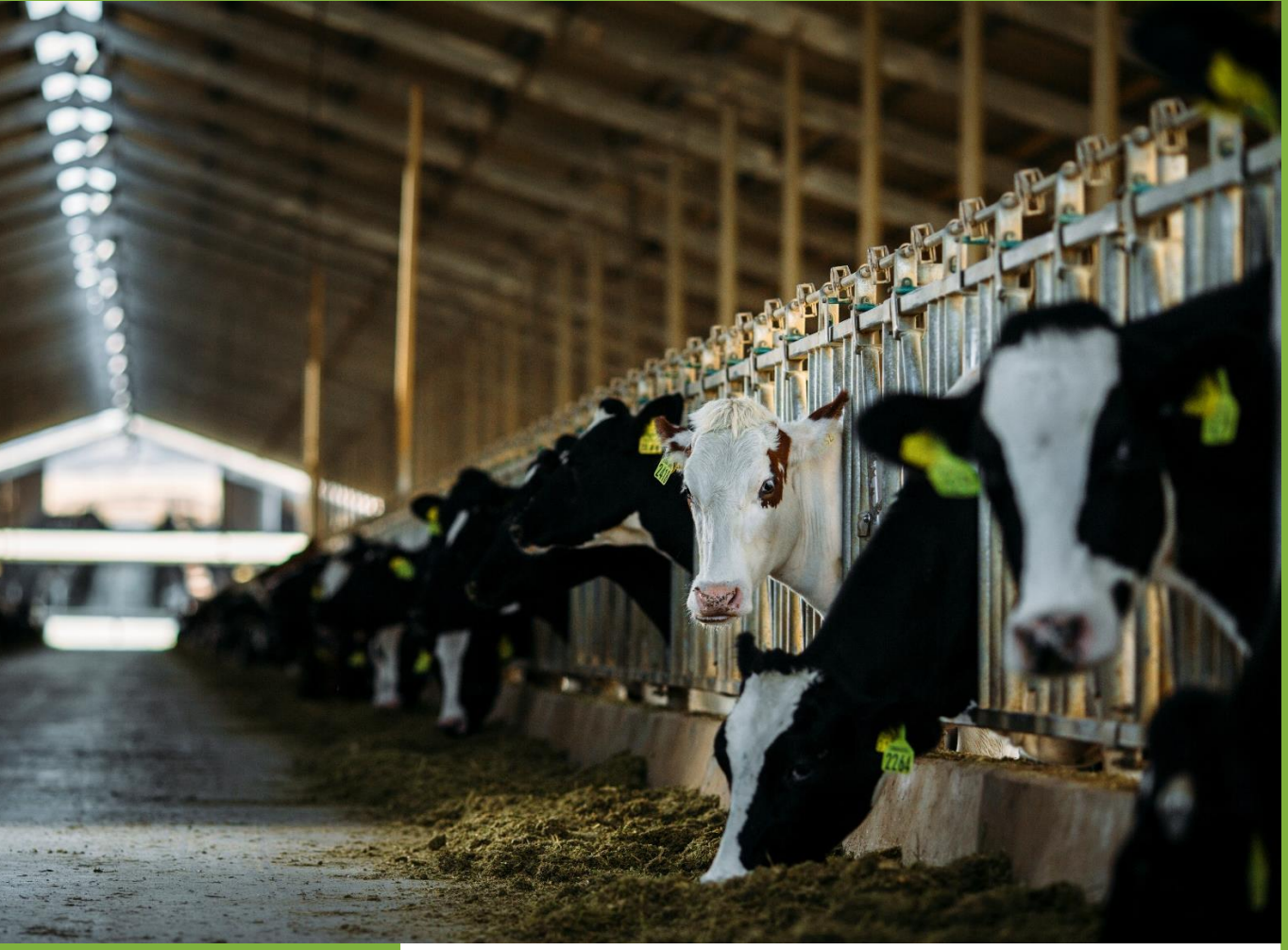
OUR OWNED FARM AT AL-FARAFRA HAS A DEDICATED PERENNIAL CROP AREA CONSISTING OF PLANTED TREES, WHICH SEQUESTER CARBON BY THE PROCESS OF PHOTOSYNTHESIS TO PROMOTE THEIR GROWTH.

The average annual growth in the above-ground biomass carbon stocks of the trees per hectare of perennial crop area was determined according to the IPCC guidelines, based on the Tier 1 method. The relevant IPCC default parameter of the average annual biomass growth rate was selected and the equivalent reduction in CO_2 emissions were determined based on the ratio of molecular weights of CO_2 to C (44/12).

Average annual sequestered carbon in planted trees ($mtCO_2e$) =
Total perennial crops area (Ha) x Above-ground biomass growth rate (tC/Ha/year) x (44/12)


ENMAA(EAL)
956
ENMAA(EAL)
956


FARMING



AL-ASEELA FARM

Our farming sector comprises of its fully owned dairy farm; Al-Enmaa for Agriculture Development & Livestock which is the latest development in our ongoing push for full vertical integration.

Al-Enmaa key subsidiaries include Al-Enmaa Livestock Company which is located in Al-Bahariya Oasis' Al-Aseela, constituting 550 feddans of land that accommodates a herd size of 7,000 Best-in-breed milking cows; enough to supply a substantial 12% of our daily needs to sustain our dairy production, while the remaining raw milk needs are sourced from over 110 local small and medium sized dairy farms, in which we offer our full support through our Local Farms Development Program and initiatives, to maintain the best quality of dairy production.

AL-FARAFRA FARM

Al-Enmaa Company for Agriculture Cultivation; Al-Enmaa's second subsidiary, covers distributed cultivated land areas of 2,668 Feddans in Al-Farafra, New Valley Governorate, and 3,800 Feddans in Al-Bahariya Oasis', which applies the most technologically advanced methods, including the use of drip irrigation systems to grow and cultivate various crops including potatoes, wheat, and corn for sustaining our livestock, and fruits including oranges which are exported worldwide while also being used in manufacturing our world-class juices.

With our full efforts to preserve the environmental resources and reduce our fuel dependency, Juhayna aims at maintaining the integration between agriculture and livestock at Al-Enmaa dairy farm by planting the land with high quality feed crops for the cattle, and benefitting the agricultural farming from natural fertilization; hence, reducing the use of industrial fertilizers and agricultural costs.

Not only this, but we have a 1MW solar PV energy station located at our farm in Al-Bahariya Oasis which sustains most of our electricity needs alongside the diesel generators on which we have become much less dependent, to ensure the sustainability of our determined efforts in preserving the environment and in holding onto our core approach; "from Farm to Consumer".

AL-ASEELA FARM Activities

SCOPE 1 - DIRECT EMISSIONS — 19,874.45 $mtCO_2e$

SYNTHETIC FERTILIZERS	310 kg of nitrogenous fertilizers (200 kg applied to Alfalfa crops and 110 kg applied to corn crops)	1.51
CROP RESIDUES	21 tons of wheat and corn residues	102.30
DIESEL FUEL	2,900,000 liters of diesel fuel consumed on-site	7,522.92
LIVESTOCK	7,232 (3,231 mature cows, 882 suckling calves, 854 weaned calves, 1,144 growing calves and 1,121 heifers)	12,247.72

SCOPE 3 - INDIRECT EMISSIONS — 2,054.92 $mtCO_2e$

CONSUMABLES	40,000 gloves	0.96
UPSTREAM TRANSPORTATION	547,500 km travelled by our subcontractors to transport the milk from our farm to the factory.	191.74
FUEL BURNING WTT EMISSIONS	WTT emissions resulting from fuel burning activities (Diesel fuel and upstream transportation)	1,835.17
SOLID WASTE DISPOSAL	120 tons of solid waste was disposed. This included 24 tons of paper and cardboard, 36 tons of plastic and 60 tons of metal.	27.06

TOTAL EMISSIONS — 21,929.37 $mtCO_2e$

BIOGENIC CARBON — 3,619 $mtCO_2e$

LAND USE CHANGE	210 Hectares were desert land and changed to cropland more than 10 years ago.	3,619

AVOIDED EMISSIONS — 484.41 $mtCO_2e$

PV ELECTRICITY GENERATED	1,599,567 kWh of renewable energy was produced, and this avoided the use of diesel fuel on our farm.	484.41

AL-FARAFRA FARM ACTIVITIES

SCOPE 1 - DIRECT EMISSIONS

3,961.35 $mtCO_2e$

SYNTHETIC FERTILIZERS	510 kg of nitrogenous fertilizers (130 kg applied to potatoes crops, 120 kg applied to peanuts crops, 150 kg applied to trees and 110 kg applied to corn crops)	2.48
CROP RESIDUES	120.4 tons of wheat and crop residues	586.52
DIESEL FUEL	1,300,000 liters of diesel fuel consumed on-site	3,372.34

SCOPE 3 - INDIRECT EMISSIONS

802.22 $mtCO_2e$

FUEL BURNING WTT EMISSIONS	WTT emissions resulting from fuel burning activities (Diesel fuel)	802.22

TOTAL EMISSIONS

4,763.56 $mtCO_2e$

BIOGENIC CARBON

19,408.40 $mtCO_2e$

LAND USE CHANGE	1,094 hectares were desert land and changed to cropland more than 10 years ago.	18,854.99
PLANTED TREES	351 Hectares of perennial crops (Orange trees)	533.41

LOCAL FARMS ACTIVITIES

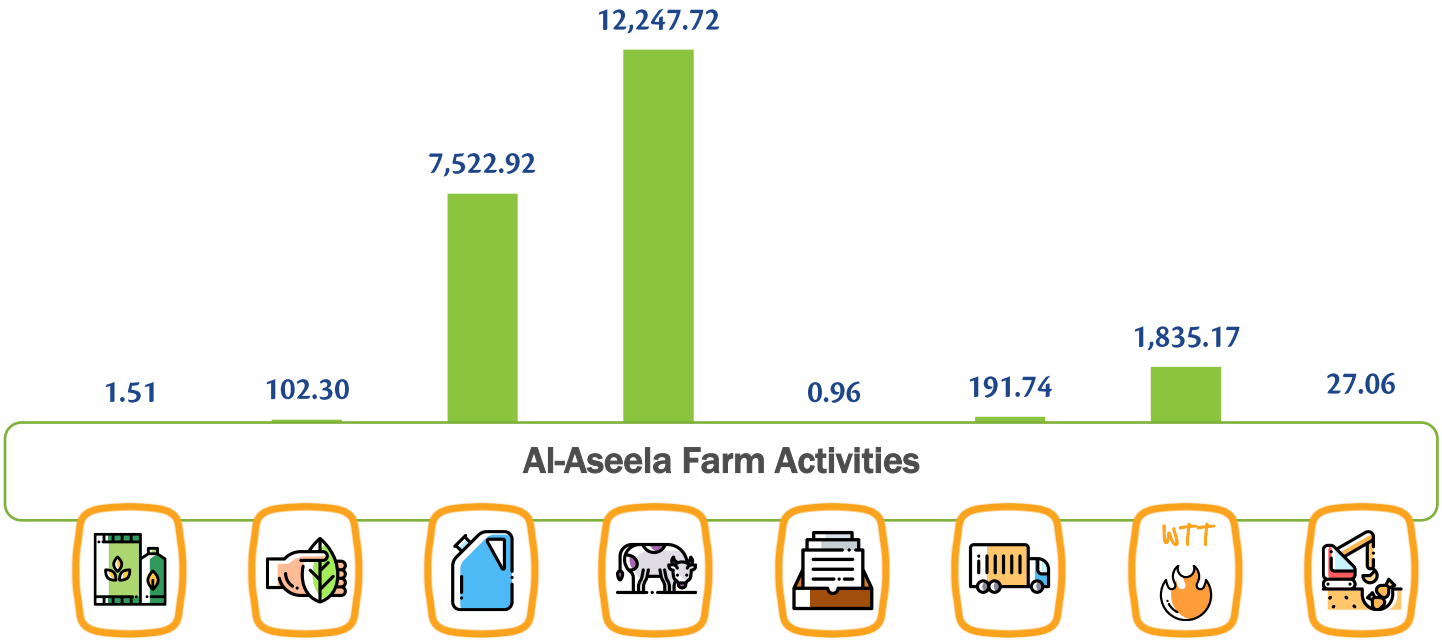
SCOPE 3 - INDIRECT EMISSIONS

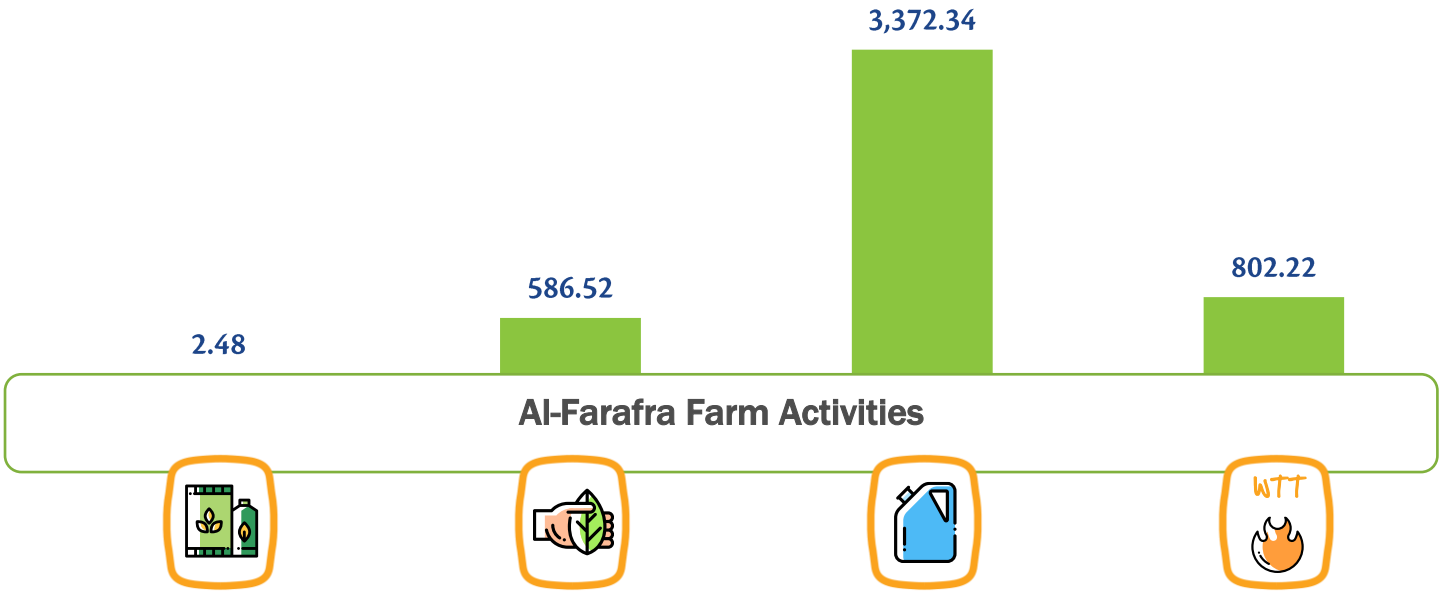
126,198.37 $mtCO_2e$

LOCALLY OUTSOURCED MILK	192,945,631 liters of milk were outsourced from local farms.	124,758.46
FUEL BURNING WTT EMISSIONS	WTT emissions resulting from fuel burning activities (Upstream transportation)	276.70
UPSTREAM TRANSPORTATION	3,321,500 km travelled by our subcontractors to transport the outsourced milk from local farms to the factory.	1,163.21

TOTAL EMISSIONS

126,198.37 $mtCO_2e$


12,247.72
7,522.92
1,835.17
1.51
102.30
0.96
191.74
27.06
Al-Aseela Farm Activities
WTT


3,372.34
802.22
586.52
2.48
Al-Farafra Farm Activities
WTT


124,758.46
1,163.21
276.70
Local Farms Activities
MILK
WTT

FARMING ACTIVITIES SUMMARY

SCOPE 1 - DIRECT EMISSIONS

23,835.79 $mtCO_2e$

SYNTHETIC FERTILIZERS	820 kg of nitrogenous fertilizers	3.99
CROP RESIDUES	141.4 tons of wheat and corn residues	688.82
DIESEL FUEL	3,200,000 liters of diesel were consumed in our farms	10,895.26
LIVESTOCK	7,232 (between 3,231 mature cows, 882 suckling calves, 854 weaned calves, 1,144 growing calves and 1,121 heifers)	12,247.72

SCOPE 3 - INDIRECT EMISSIONS

133,042.62 $mtCO_2e$

LOCALLY OUTSOURCED MILK	192,945,631 liters of milk	124,758.46
CONSUMABLES	40,000 gloves	0.96
UPSTREAM TRANSPORTATION	3,869,000 km	1,354.94
COMMUTING	20,367,934 km	3,154.37
FUEL BURNING WTT EMISSIONS	-	3,746.86
SOLID WASTE DISPOSAL	120 tons	27.06

TOTAL FARMS EMISSIONS

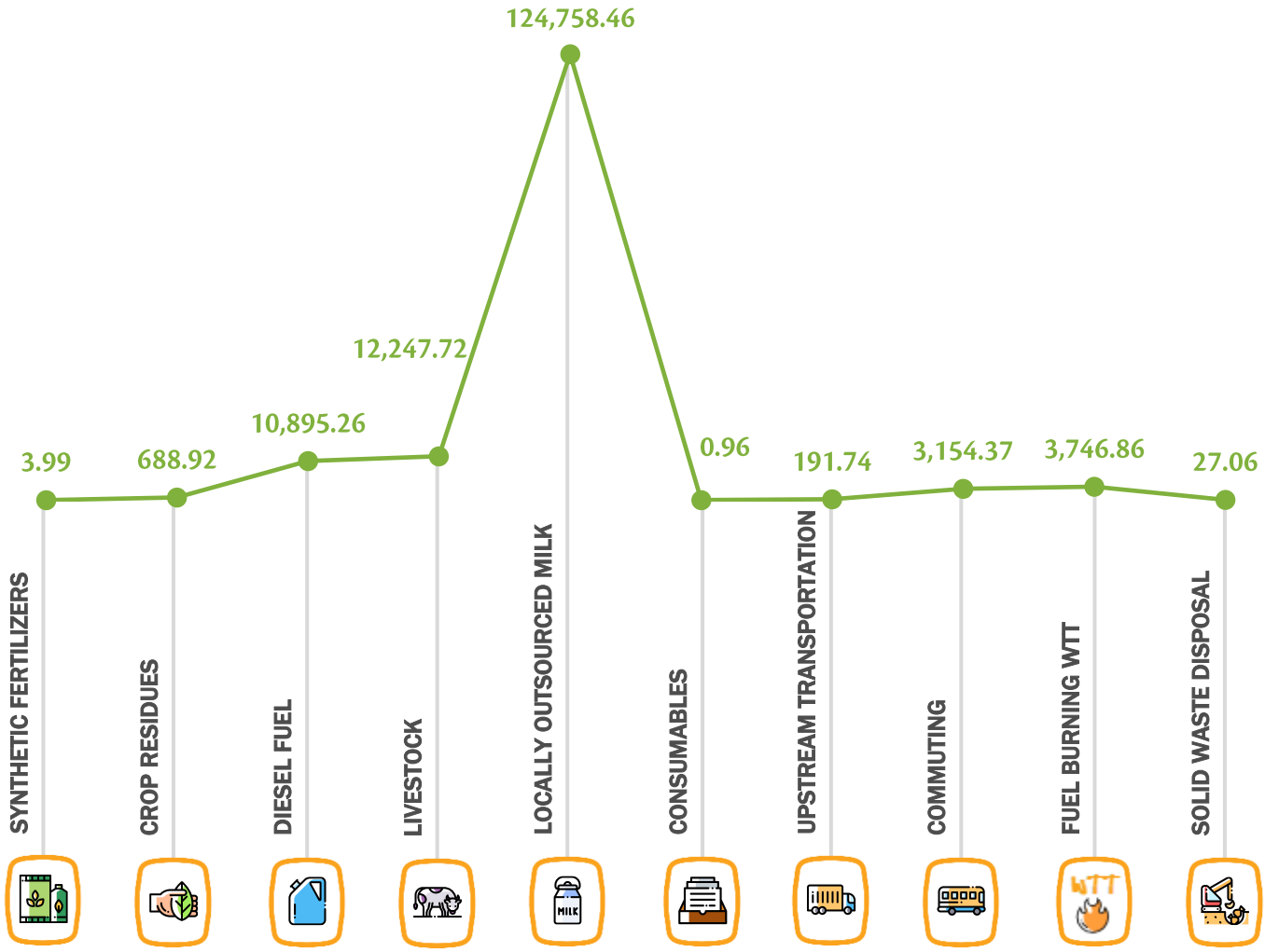
156,878.41 $mtCO_2e$

BIOGENIC CARBON

23,027.4 $mtCO_2e$

LAND USE CHANGE	1,304 Hectares	22,473.99
PLANTED TREES	351 Hectares	533.41

Farming Activities Summary



Scope 1		Scope 3		Total
23,835.79	+	133,042.62	=	156,878.41
$mtCO_2e$		$mtCO_2e$		$mtCO_2e$

Did you know?

The amount of Juhayna's outsourced milk from Egypt's dairy farms in 2019 was enough to supply around 5.5 million primary school students with mix milk daily for an entire academic year.


MANUFACTURING

EGYFOODS FACTORY

336
Employees + Workers

36,000
m²

EgyFoods, located in Sixth of October City, manufactures Juhayna's yogurts and yogurt drinks including Rayeb and Zabado. The facilities are 36,000 m², embracing 236 employees and 100 workers, with 400 yearly visitors of the factory.

The plant holds a number of certificates including FSSC 22000 and OHSAS 18001. Along with the other factories of Juhayna, EgyFoods has earned the ISO 14001 certificate for applying integrated resources management systems; for example, waste recycling and the efficient use of energy.

AL-MASREYA FACTORY

350
Employees + Workers

24,570
m²

Al-Masreya factory, also located in Sixth of October City, with facilities comprising 24,570 m² was acquired in 2005 to increase the production capacity of Juhayna's products, with a total of 296 employees and 54 workers, the factory utilizes advanced technologies to produce milk and white cheese. Al-Masreya factory is ISO: FSSC 22000, ISO 14001 and OHSAS 18001 certified.

AL-DAWLEYA FACTORY

368
Employees + Workers

55,000
m²

Al-Dawleya is one of the largest industrial manufacturing facilities in Egypt and the MENA region, comprising 55,000 m². The factory, operational since 2009 in Sixth of October City, is producing and packaging fresh juices and drinks, including Juhayna Classics, Pure, Bekhero, and Oriental beverages.

The factory comprises 218 employees and 150 workers. Al-Dawleya is fully automated, embracing technologies to minimize waste, and the factory holds a number of global and local quality certificates including FSSC 22000, ISO-14001, OHSAS 18001 and ISO-50001.

AL-MARWA FACTORY

143
Employees + Workers

17,000
m²

Al-Marwa factory, initially established in 1998, has been upgraded and modernized since then to embrace globally advanced technologies in manufacturing.

The factory, 17,000 m², located in Sixth of October City engages 143 employees and workers, and is semi-automated. Al-Marwa factory specializes in the production of fruit concentrates and pulps including mango, guava, strawberry, peach, apricot, apple and concentrated carrot that are used for both internal and domestic consumption, as well as exports. Al-Marwa factory has earned SSC 2200 Food Safety System Certificate, as well as ISO 14001/2007 which is granted for applying integrated resources management systems; for example, waste management and efficient use of energy.

EGYFOODS MANUFACTURING ACTIVITIES

SCOPE 1 — DIRECT EMISSIONS

2,730.53 $mtCO_2e$

NATURAL GAS	The factory consumed 1,344,735 m^3 of natural gas in the year 2019.	2,730.53

SCOPE 2 - INDIRECT EMISSIONS

10,502.62 $mtCO_2e$

PURCHASED ELECTRICITY	The factory consumed 20,275.32 MWh of electricity.	10,502.62

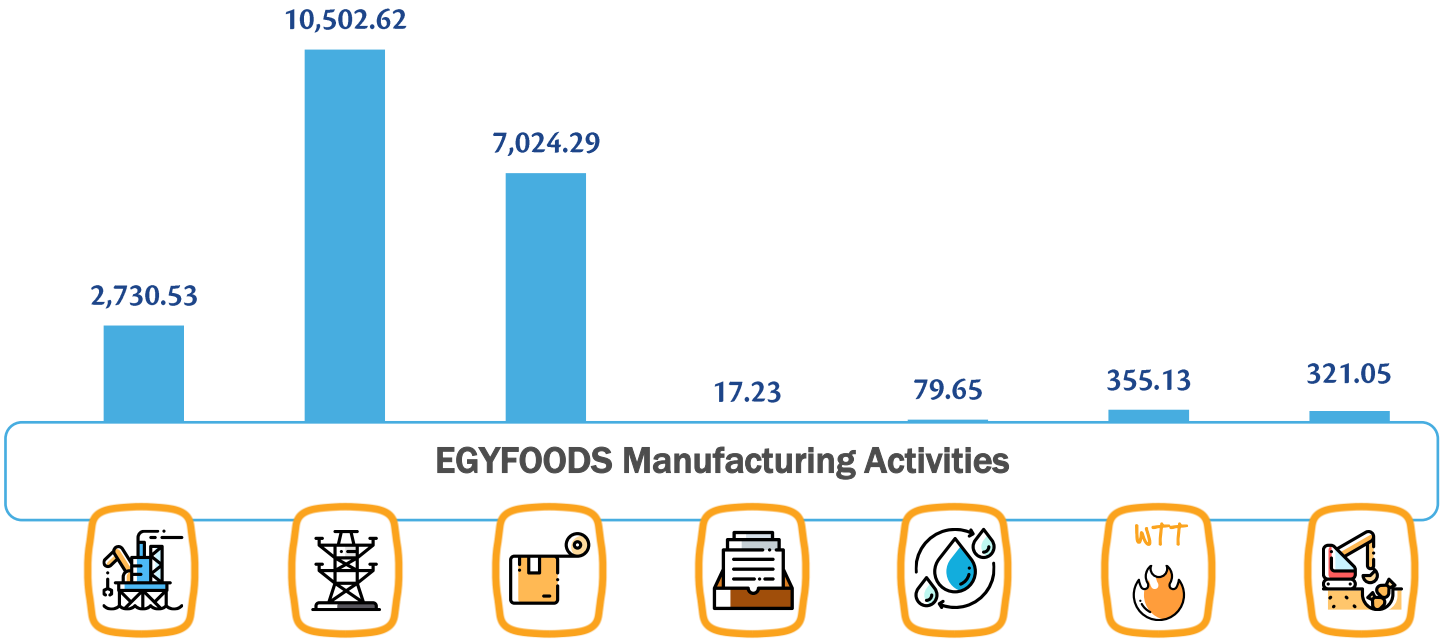
SCOPE 3 - INDIRECT EMISSIONS

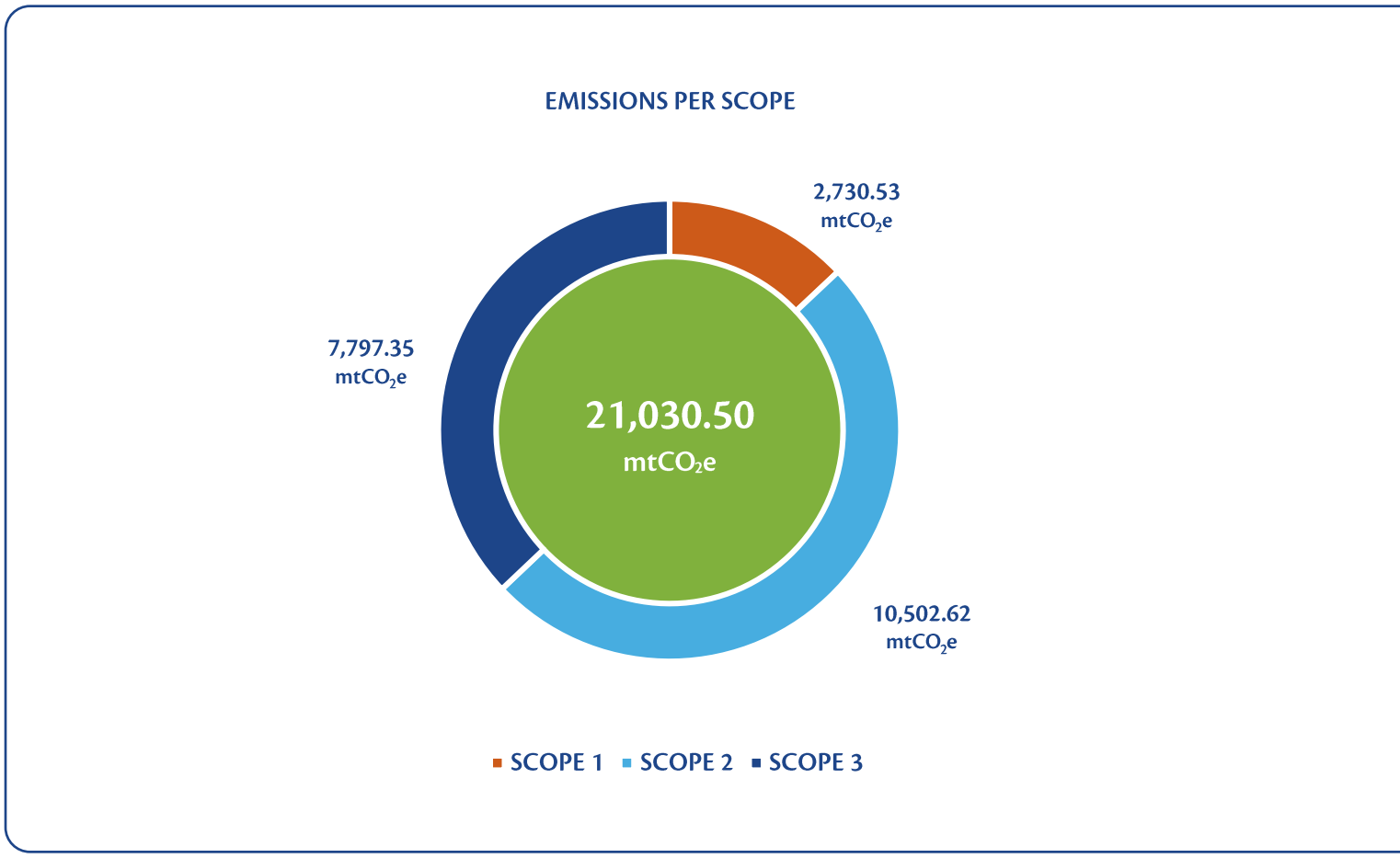
7,797.35 $mtCO_2e$

PACKAGING	Total quantities of packages utilized in the factory amounted to 532,383,834 packages, this included different sizes of yogurt, sour cream, Rayeb and cooking cream packages.	7,024.29
CONSUMABLES	Consumables in the factory included 135,000 head covers, 10,000 chin covers, 15,000 medical gloves and 1,000 paper coats for visitors.	17.23
WATER USAGE AND WASTEWATER TREATMENT	The factory consumed and treated around 369,636 m^3 of water.	79.65
FUEL BURNING - WTT EMISSIONS	Natural gas WTT emissions were accounted for in this activity.	355.13
SOLID WASTE DISPOSAL	This included waste generated from our factory, employees, workers and visitors. The amount of waste generated was 1,289 tons.	321.05

TOTAL FACTORY EMISSIONS

21,030.50 $mtCO_2e$


10,502.62
7,024.29
2,730.53
17.23
79.65
355.13
321.05
EGYFOODS Manufacturing Activities
WTT


EMISSIONS PER SCOPE
2,730.53
mtCO2e
7,797.35
mtCO2e
21,030.50
mtCO2e
10,502.62
mtCO2e
SCOPE 1
SCOPE 2
SCOPE 3

AL MASREYA MANUFACTURING ACTIVITIES

SCOPE 1 — DIRECT EMISSIONS

5,661.59 $mtCO_2e$

NATURAL GAS	The factory consumed 2,788,232.10 m^3 of natural gas in the year 2019.	5,661.59

SCOPE 2 - INDIRECT EMISSIONS

8,160.71 $mtCO_2e$

PURCHASED ELECTRICITY	The factory consumed 15,754.26 MWh of electricity.	8,160.71

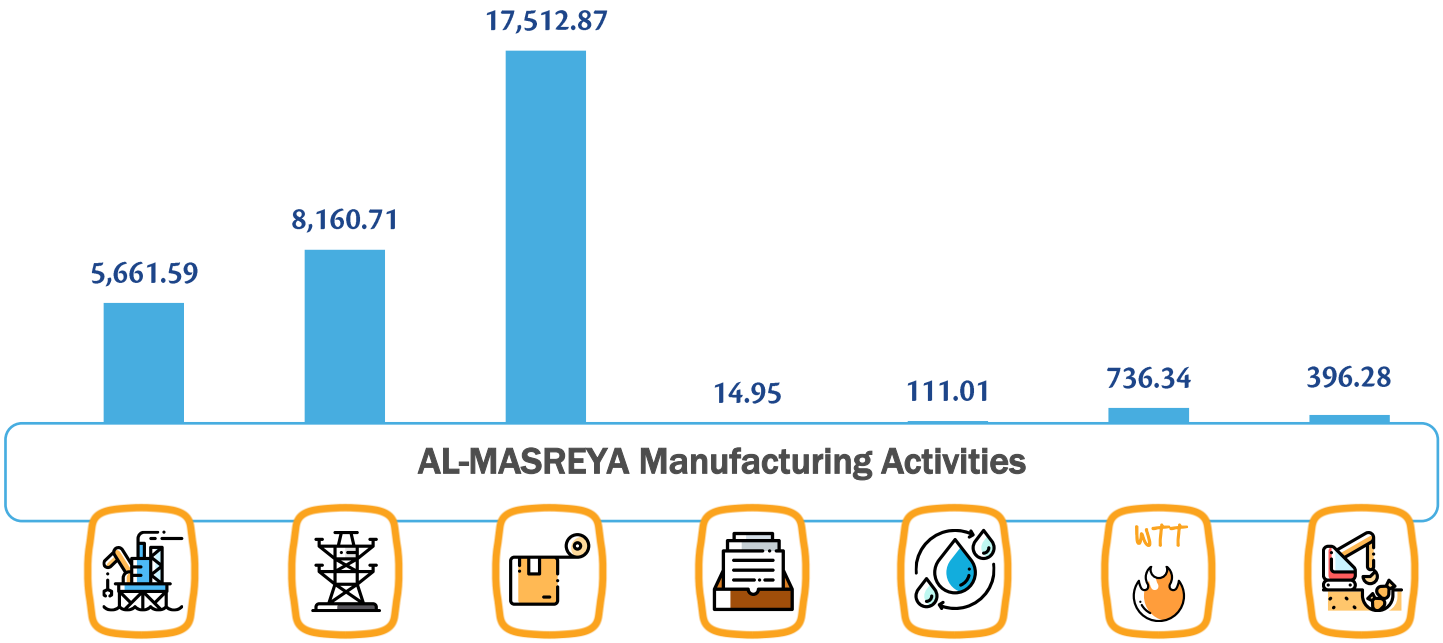
SCOPE 3 - INDIRECT EMISSIONS

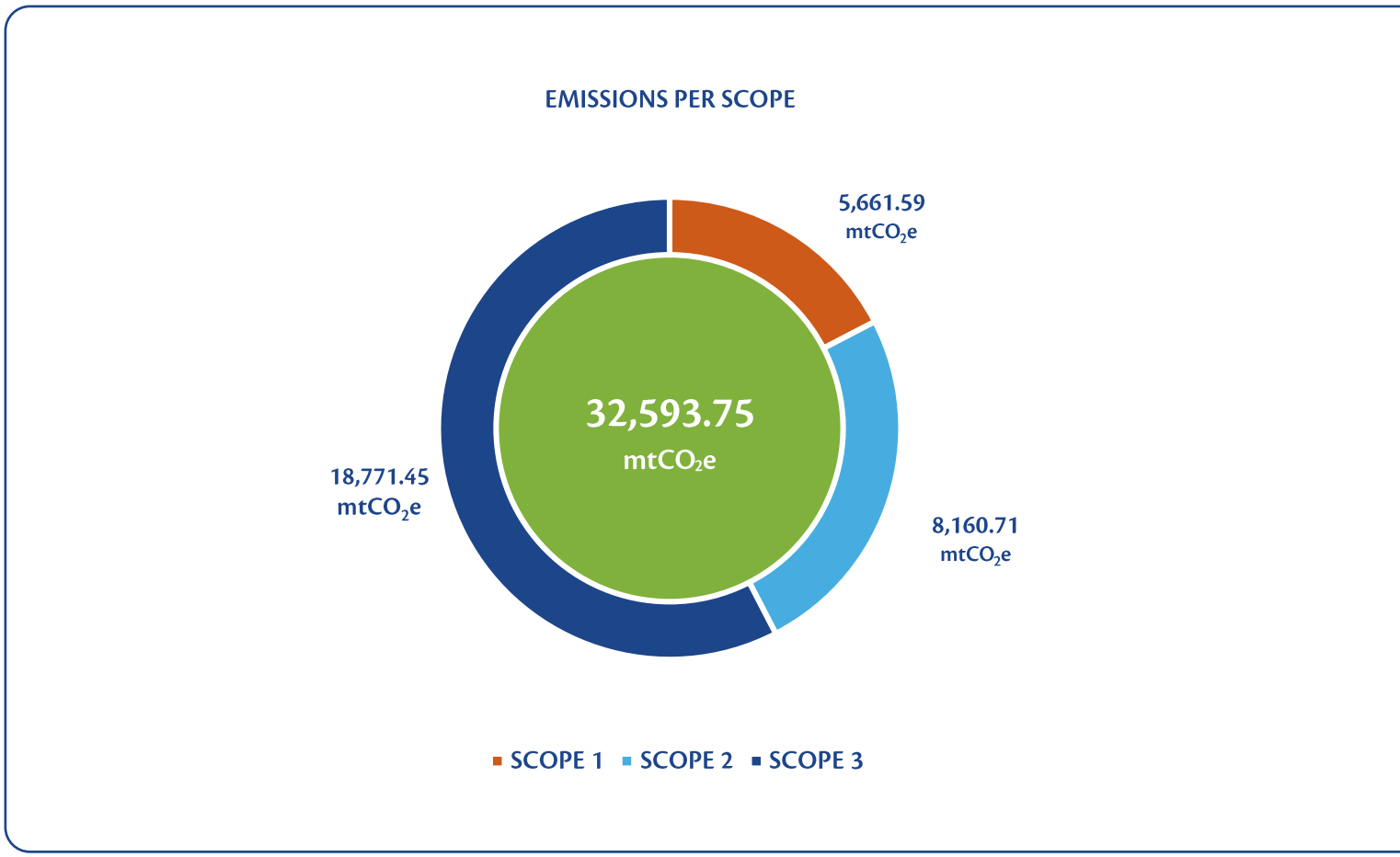
18,771.45 $mtCO_2e$

PACKAGING	Total quantities of packages utilized in the factory amounted to 457,474,814 packages, this included different sizes of milk, mix, whipping and cooking cream packages.	17,512.87
CONSUMABLES	Consumables in the factory included 112,000 head covers, 70,000 chin covers and 8,000 medical gloves.	14.95
WATER USAGE AND WASTEWATER TREATMENT	The factory consumed and treated around 515,140 m^3 of water.	111.01
FUEL BURNING - WTT EMISSIONS	Natural gas WTT emissions were accounted for in this activity.	736.34
SOLID WASTE DISPOSAL	This included waste generated from our factory, employees, workers and visitors. The amount of waste generated was 1,304 tons.	396.28

TOTAL FACTORY EMISSIONS

32,593.75 $mtCO_2e$


17,512.87
8,160.71
5,661.59
14.95
111.01
736.34
396.28
AL-MASREYA Manufacturing Activities
WTT


EMISSIONS PER SCOPE
5,661.59
mtCO2e
32,593.75
mtCO2e
18,771.45
mtCO2e
8,160.71
mtCO2e
SCOPE 1
SCOPE 2
SCOPE 3

AL DAWLEYA MANUFACTURING ACTIVITIES

SCOPE 1 — DIRECT EMISSIONS

1,782.36 $mtCO_2e$

NATURAL GAS	The factory consumed 877,782 m^3 of natural gas in the year 2019.	1,782.36

SCOPE 2 - INDIRECT EMISSIONS

7,794.62 $mtCO_2e$

PURCHASED ELECTRICITY	The factory consumed 15,047.53 MWh of electricity.	7,794.62

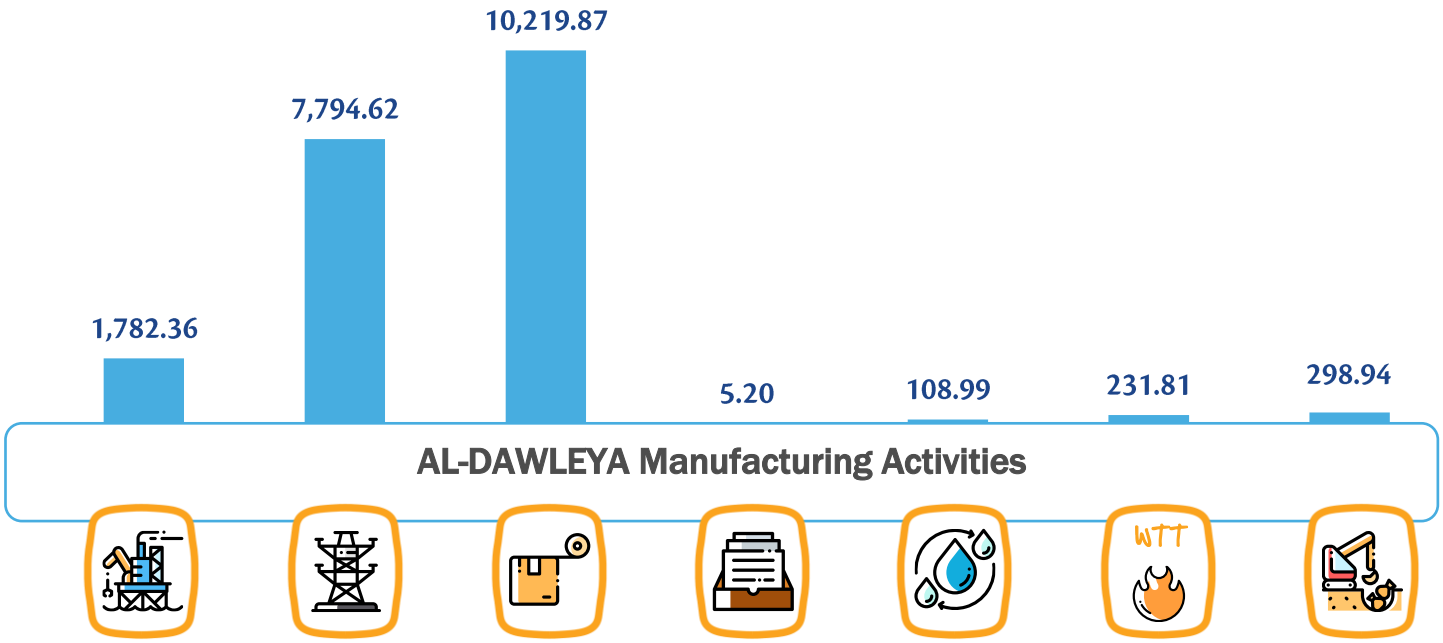
SCOPE 3 - INDIRECT EMISSIONS

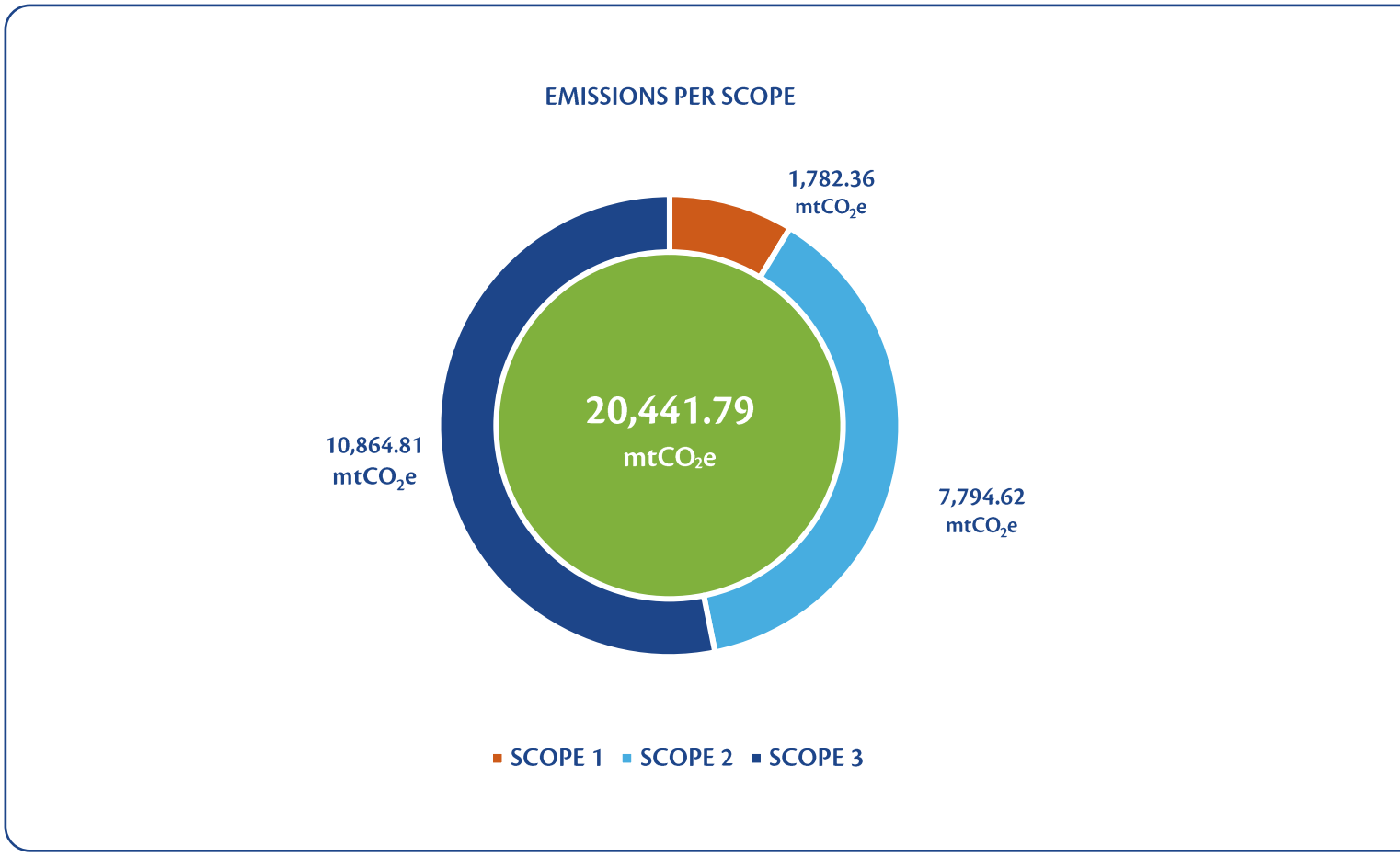
10,864.81 $mtCO_2e$

PACKAGING	Total quantities of packages utilized in the factory amounted to 486,827,361 packages, this included different sizes of juices and tomato purée.	10,219.87
CONSUMABLES	Consumables in the factory included 30,000 head covers, 19,000 chin covers, 38,200 medical gloves and 2,408 paper coats for visitors.	5.20
WATER USAGE AND WASTEWATER TREATMENT	The factory consumed and treated around 505,768 m^3 of water.	108.99
FUEL BURNING - WTT EMISSIONS	Natural gas WTT emissions were accounted for in this activity.	231.81
SOLID WASTE DISPOSAL	This included waste generated from our factory, employees, workers and visitors. The amount of waste generated was 1,236 tons.	298.94

TOTAL FACTORY EMISSIONS

20,441.79 $mtCO_2e$


10,219.87
7,794.62
1,782.36
5.20
108.99
231.81
298.94
AL-DAWLEYA Manufacturing Activities
WTT


EMISSIONS PER SCOPE
1,782.36 mtCO2e
20,441.79 mtCO2e
10,864.81 mtCO2e
7,794.62 mtCO2e
SCOPE 1
SCOPE 2
SCOPE 3

AL MARWA MANUFACTURING ACTIVITIES

SCOPE 1 — DIRECT EMISSIONS

6,076.50 $mtCO_2e$

NATURAL GAS	The factory consumed 2,992,568 m^3 of natural gas in the year 2019.	6,076.50

SCOPE 2 - INDIRECT EMISSIONS

2,853.25 $mtCO_2e$

PURCHASED ELECTRICITY	The factory consumed 5,508.21 MWh of electricity.	2,853.25

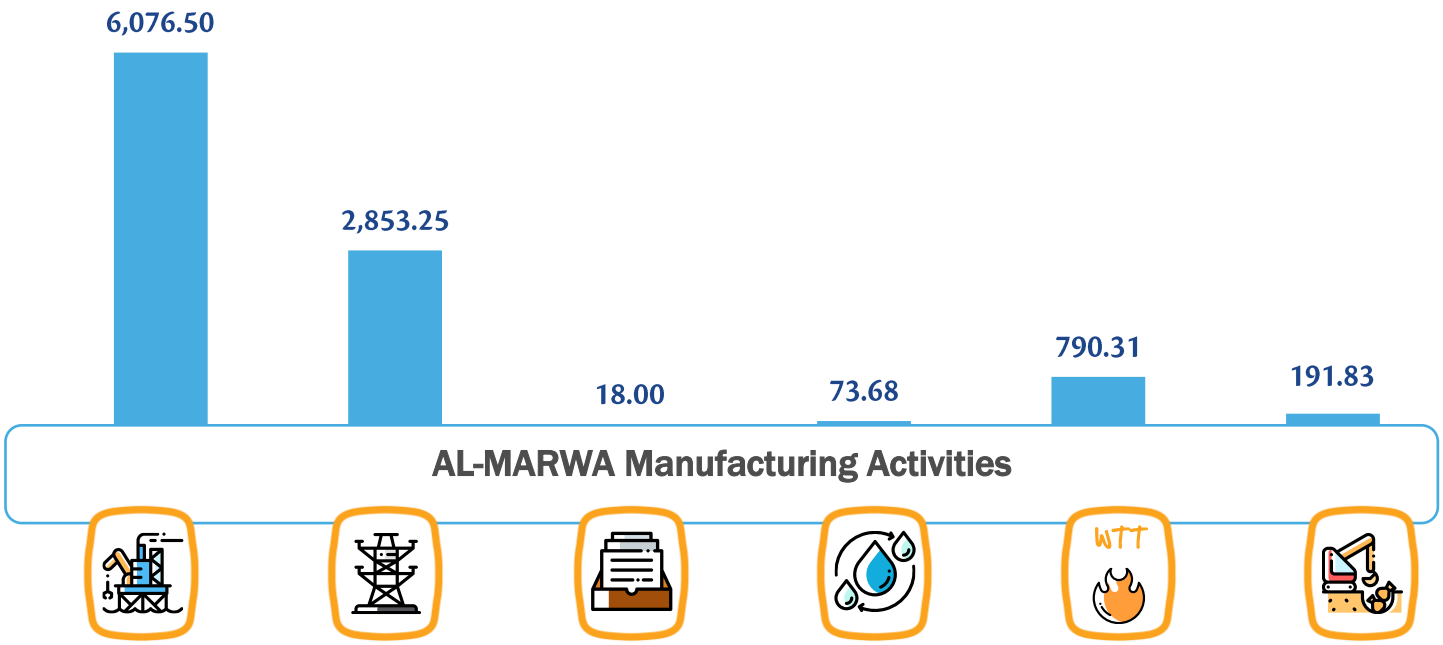
SCOPE 3 - INDIRECT EMISSIONS

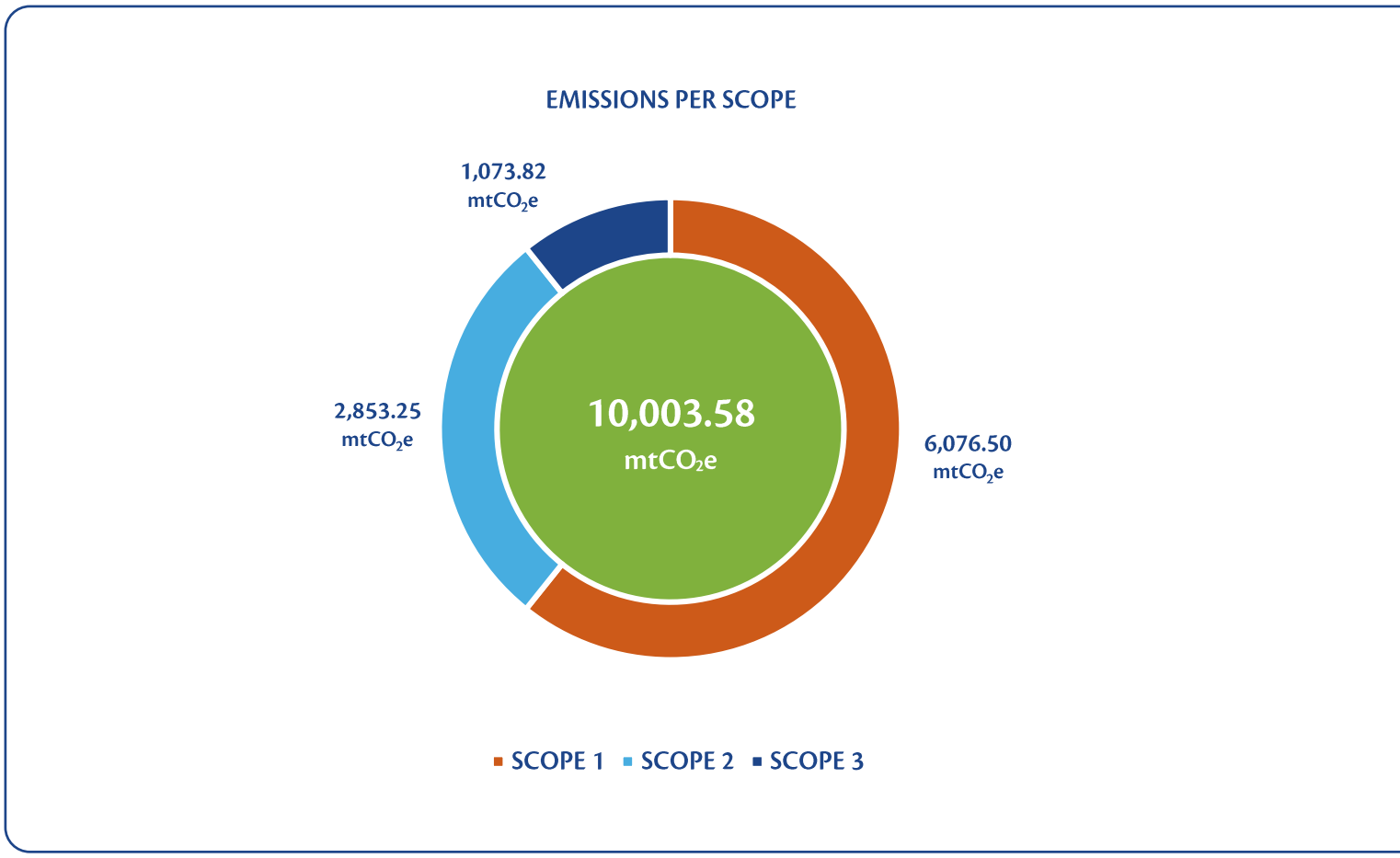
1,073.82 $mtCO_2e$

CONSUMABLES	Consumables in the factory included 121,000 head covers, 5,000 chin covers and 104,500 medical gloves and 40,000 facemasks.	18.00
WATER USAGE AND WASTEWATER TREATMENT	The factory consumed and treated around 341,908 $m^3$of water.	73.68
FUEL BURNING - WTT EMISSIONS	Natural gas WTT emissions were accounted for in this activity.	790.31
SOLID WASTE DISPOSAL	This included waste generated from our factory, employees and workers. The amount of waste generated was 720 tons.	191.83

TOTAL FACTORY EMISSIONS

10,003.58 $mtCO_2e$


6,076.50
2,853.25
18.00
73.68
790.31
191.83
AL-MARWA Manufacturing Activities
WTT


EMISSIONS PER SCOPE
1,073.82 mtCO2e
2,853.25 mtCO2e
10,003.58 mtCO2e
6,076.50 mtCO2e
SCOPE 1
SCOPE 2
SCOPE 3

MANUFACTURING ACTIVITIES SUMMARY

SCOPE 1 — DIRECT EMISSIONS

24,802.99 $mtCO_2e$

DOWNSTREAM TRANSPORTATION (FACTORIES TO DISTRIBUTION)	Our trucks consumed 3,296,705.42 liters of diesel to transport our products to the distribution centers.	8,552.02
NATURAL GAS	The factories consumed 8,003,317.37 m^3 of natural gas in the year 2019.	16,250.98

SCOPE 2 - INDIRECT EMISSIONS

29,311.20 $mtCO_2e$

PURCHASED ELECTRICITY	The electricity consumption in our factories was 56,585.33 MWh in the year 2019.	29,311.20

SCOPE 3 - INDIRECT EMISSIONS

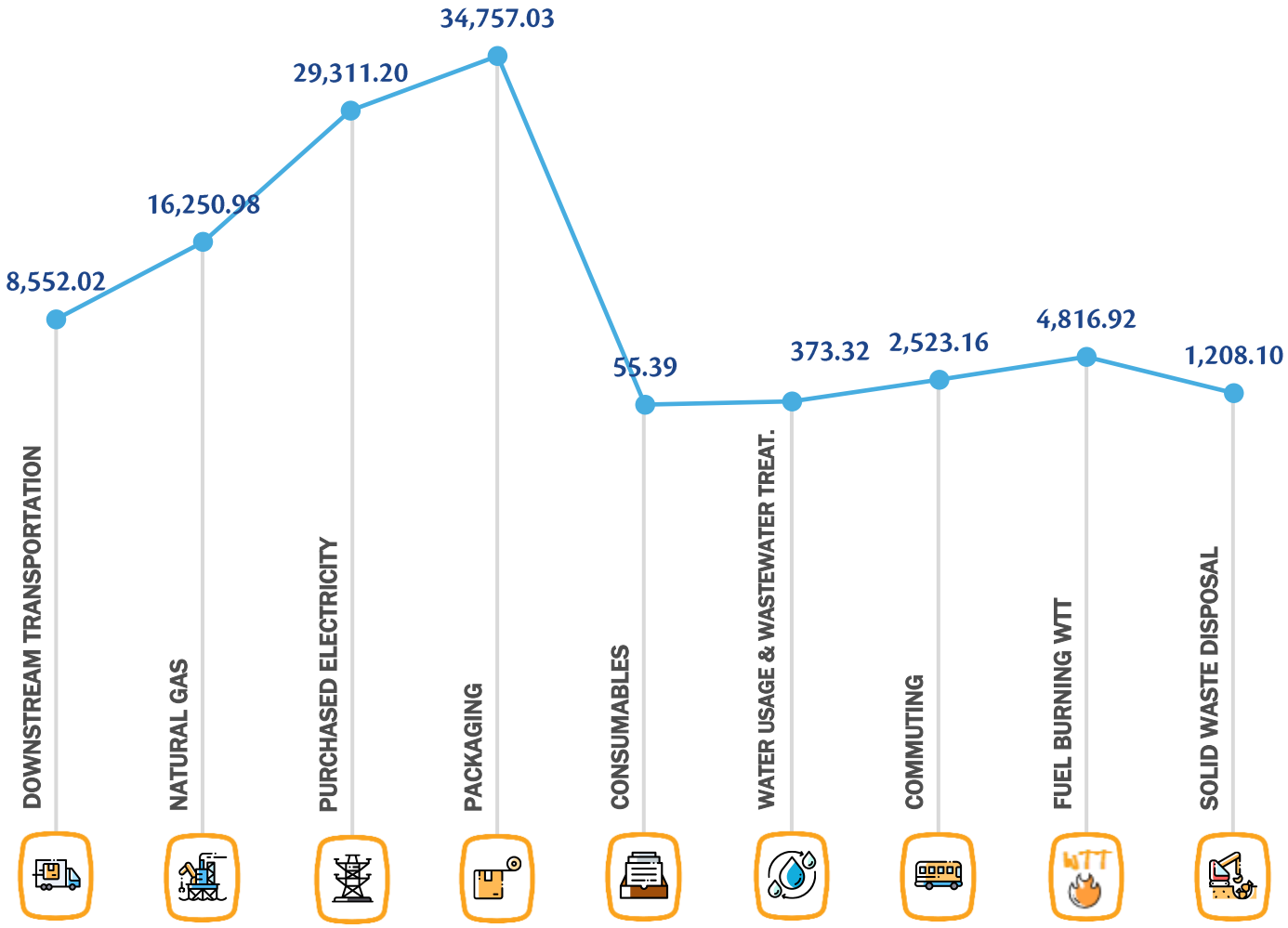
43,733.92 $mtCO_2e$

PACKAGING	In all factories, we packed about 1,476,686,000 products.	34,757.03
CONSUMABLES	Consumables reached about 711,100 units. This included face masks, gloves, paper coats, chin and head covers.	55.39
WATER USAGE AND WASTEWATER TREATMENT	We consumed around 1,732,452 m^3 of water in all factories.	373.32
COMMUTING	Employees & workers commuting totaled 16,136,521 km distributed between buses, cars, and other means like walking or metro.	2,523.16
FUEL BURNING - WTT EMISSIONS	WTT emissions resulting from downstream transportation and natural gas.	4,816.92
SOLID WASTE DISPOSAL	This included waste generated from our production activities, employees, workers and visitors. The solid waste disposed was 4,550 tons.	1,208.10

TOTAL FACTORY EMISSIONS

97,848.12 $mtCO_2e$

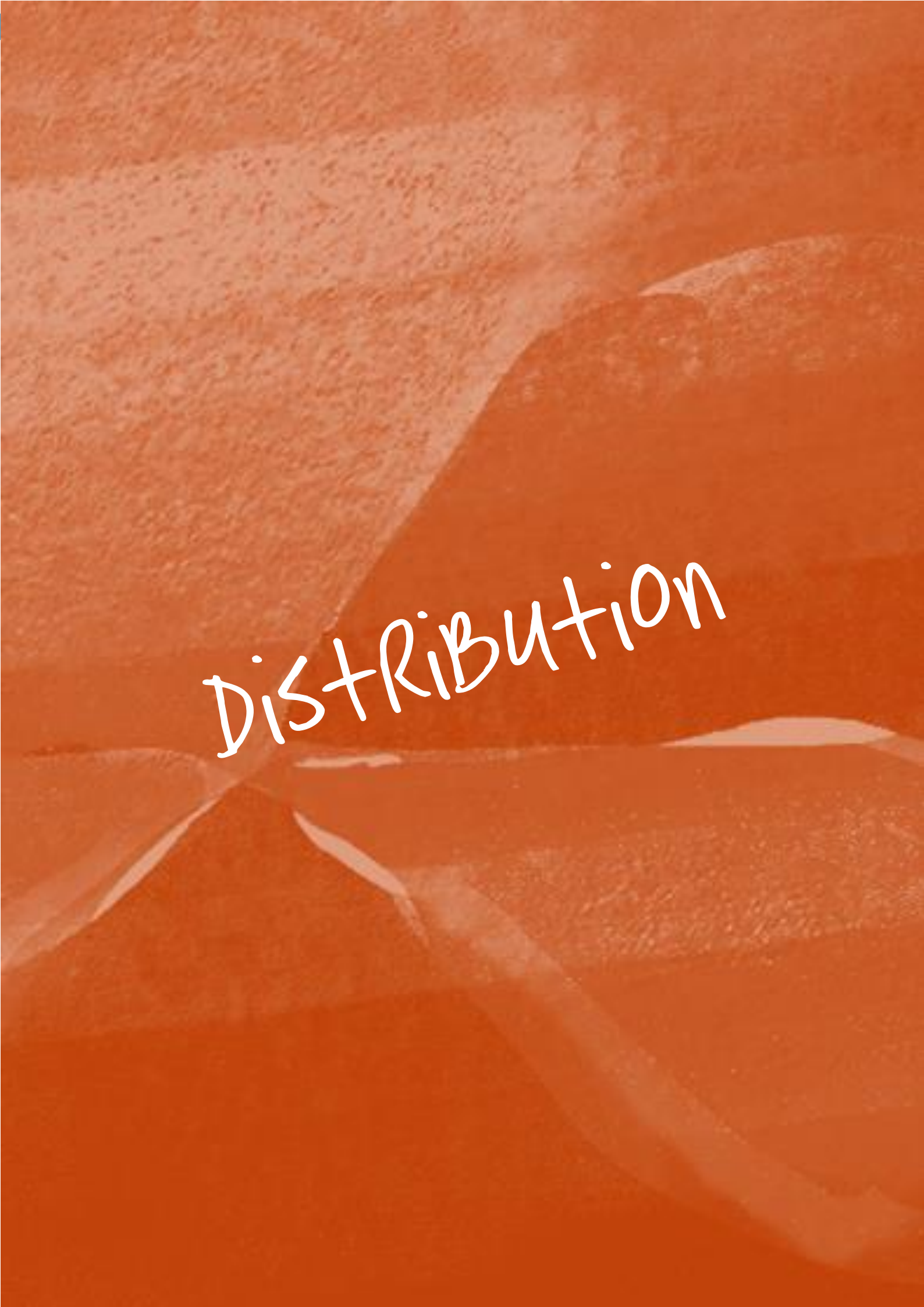
Manufacturing Activities Summary



Scope 1		Scope 2		Scope 3		Total
24,802.99	+	29,311.20	+	43,733.92	=	97,848.12
$mtCO_2e$		$mtCO_2e$		$mtCO_2e$		$mtCO_2e$

Did you know?

The amount of electricity consumed by our factories in 2019 is enough to power **4,346** Egyptian primary schools for a year?


DISTRIBUTION

Distribution Centers

TIBA for Trade and Distribution, established in 2005 is Juhayna's commercial arm and main distribution network and is a crucial component of our vertical integration strategy. With one of the largest distribution fleets in the Egyptian food and beverage industry.

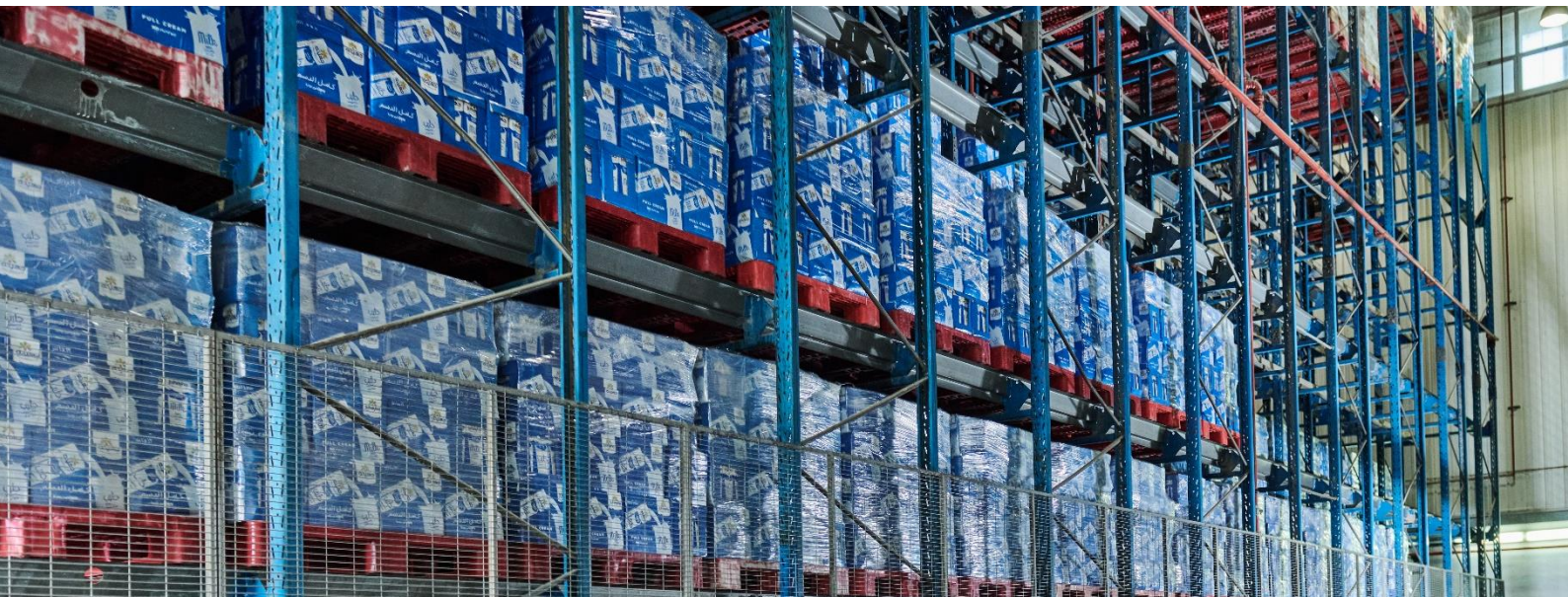
TIBA owns around 992 vehicles capable of transporting both refrigerated and non-refrigerated products nationwide, in addition to 30 distribution centers that reaches 136,000 retail outlets.

Juhayna established TIBA for trade and distribution, as a new transformational milestone of our Supply Chain's Vertical Integration, ensuring that healthy, safe nutrition is accessible in all areas across the country.

We exported our finished products (milk, yogurt, juice and kitchen/ cooking range) to more than 26 countries while the juice concentrates, fruit purées and fruit pulps were exported to 30 countries.

992
Trucks

136,000
Retail Outlets



30
Distribution Cent.

2,808
Employees

36
Countries

26,400 tons
Exported

Distribution Activities

Scope 1 — Direct Emissions

13,001.68 $mtCO_2e$

DOWNSTREAM TRANSPORTATION (DISTRIBUTION TO RETAIL)	Our trucks consumed 4,527,041 liters of diesel to transport our products from the distribution centers to the retail outlets.	11,743.64
NATURAL GAS	Our distribution centers consumed 53,985 m^3 of natural gas in the year 2019.	109.64
REFRIGERANTS LEAKAGE	The total amount of refrigerants consumed in all distribution centers was equal to 1,044 kg of R-134A	1,148.40

Scope 2 - Indirect Emissions

2,910.36 $mtCO_2e$

PURCHASED ELECTRICITY	The electricity consumption in our distribution centers was 5,721.05 MWh in the year 2019.	2,910.36

Scope 3 - Indirect Emissions

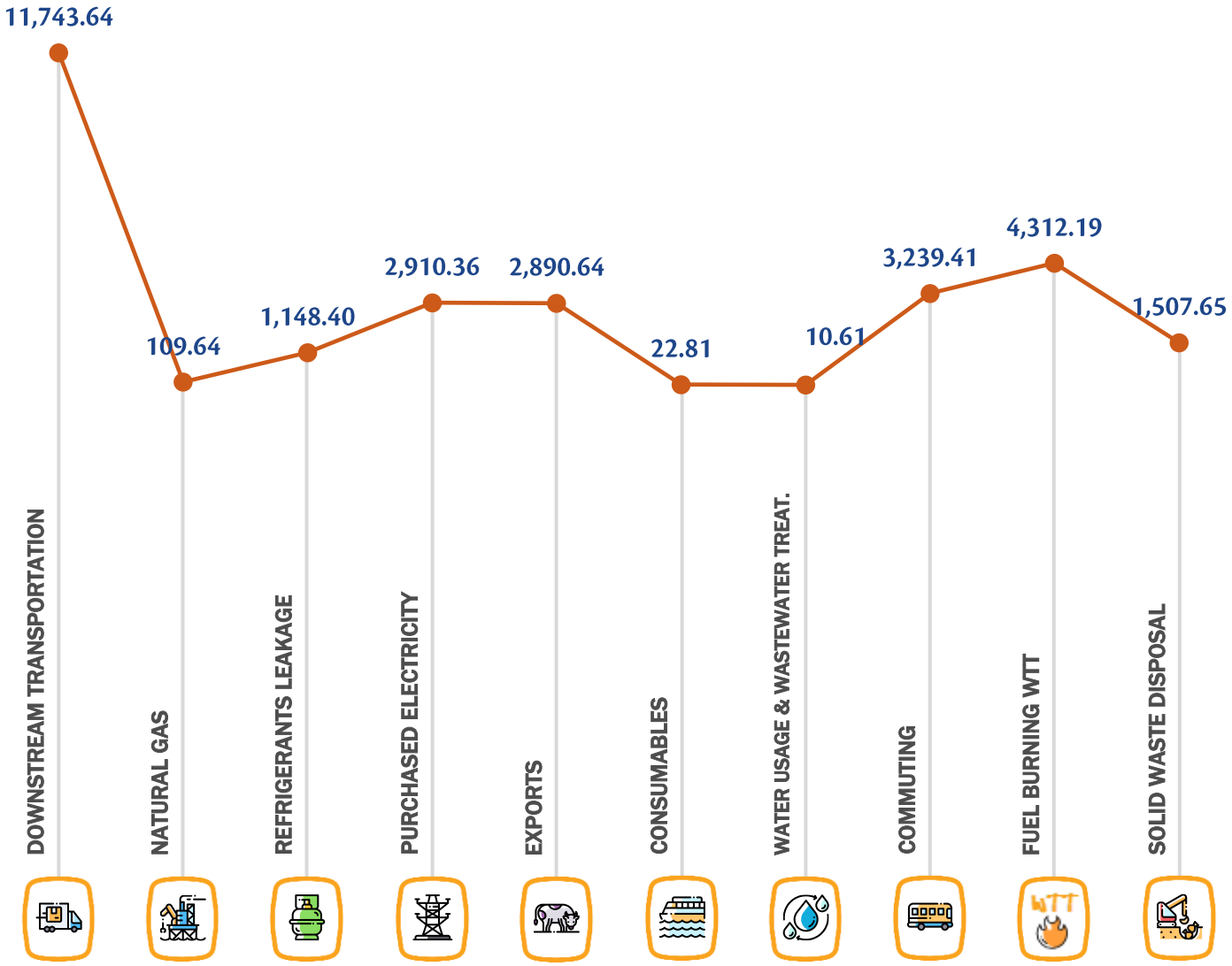
11,983.30 $mtCO_2e$

EXPORTS	Our products were exported to 34 countries by marine shipping and 2 by land. The total ton-kilometers was equal to 1,069,411,122 ton.km	2,890.64
CONSUMABLES	Consumables were about 17.11 tons. This included different types and sizes of paper (17.11 tons) in addition to 1,344 printer toners.	22.81
WATER USAGE AND WASTEWATER TREATMENT	We consumed more than 48,800 m^3 of water in all distribution centers.	10.61
COMMUTING	Employees commuting totaled 23,481,424 km distributed between buses, cars, and other means like walking or metro.	3,239.41
FUEL BURNING - WTT EMISSIONS	WTT emissions resulting from downstream transportation, natural gas, exports and commuting activities.	4,312.19
SOLID WASTE DISPOSAL	This included waste generated in our distribution centers by our employees, workers and visitors. The amount of waste generated was equal to 5,825 tons.	1,507.65

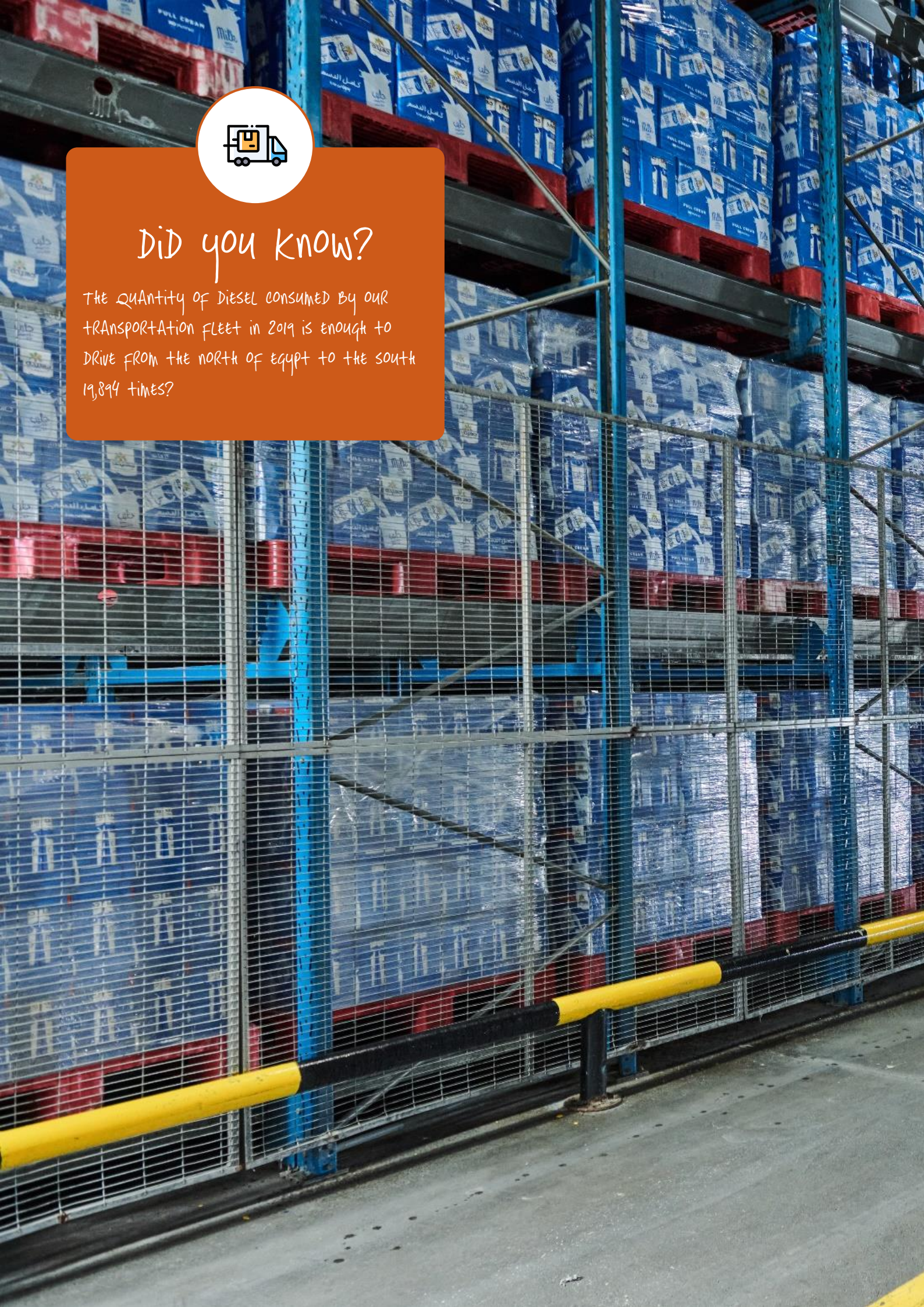
Total Distribution Emissions

27,895.34 $mtCO_2e$

Distribution Activities Summary



Scope 1		Scope 2		Scope 3		Total
13,001.68	+	2,910.36	+	11,983.30	=	27,895.34
$mtCO_2e$		$mtCO_2e$		$mtCO_2e$		$mtCO_2e$



Did you know?

The quantity of diesel consumed by our transportation fleet in 2019 is enough to drive from the north of Egypt to the south 19,894 times?


HEAD
QUARTERS

HEADQUARTERS ACTIVITIES

SCOPE 2 - INDIRECT EMISSIONS

111.89 $mtCO_2e$

PURCHASED ELECTRICITY	The electricity consumption in our headquarters was 216.01 MWh in the year 2019.	111.89

SCOPE 3 - INDIRECT EMISSIONS

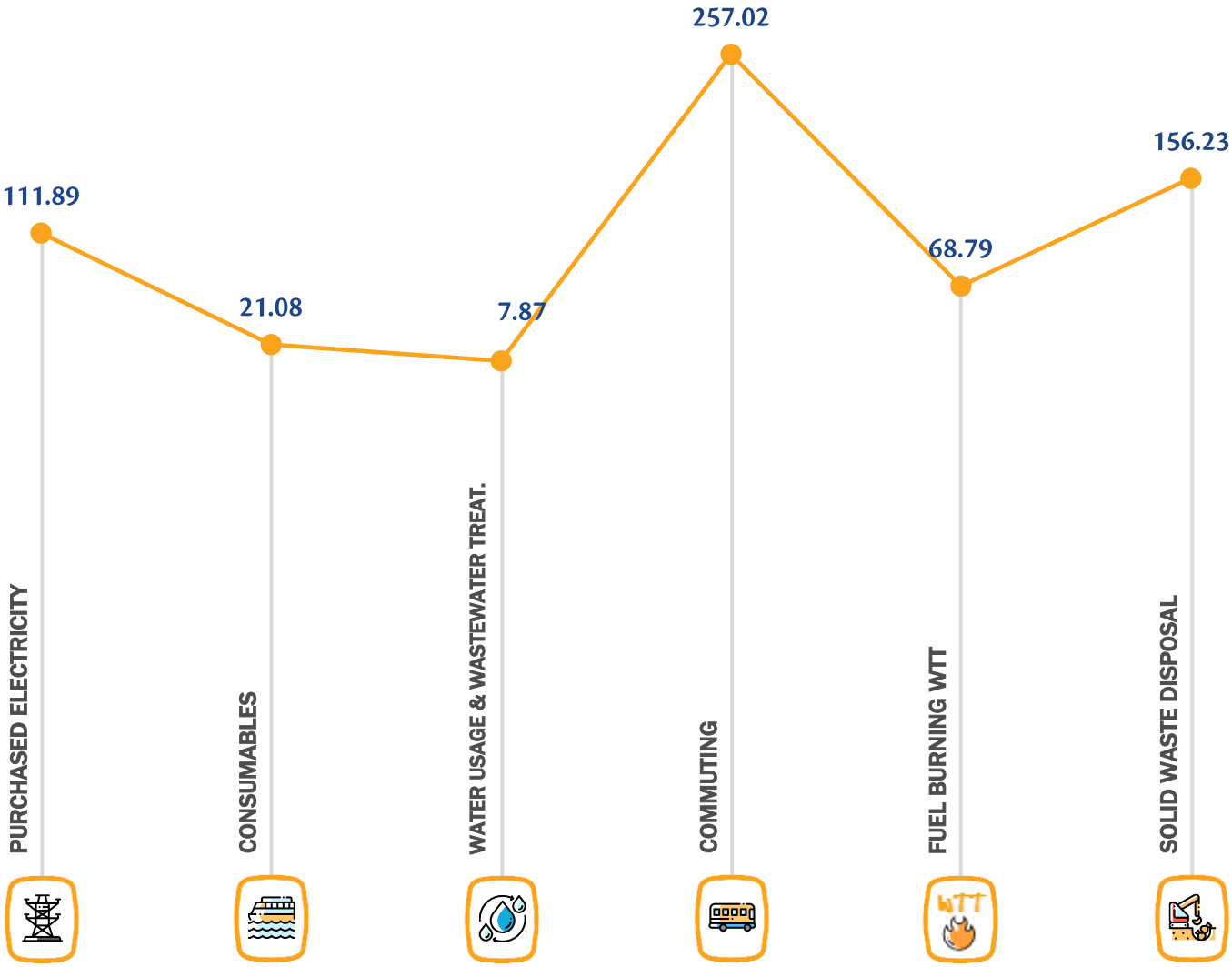
510.99 $mtCO_2e$

CONSUMABLES	Consumables were about 3.74 tons This included A4 paper in addition to 3,600 printer toners.	21.08
WATER USAGE AND WASTEWATER TREATMENT	We consumed more than 36,214 m^3 of water in the HQ.	7.87
COMMUTING	Employees commuting totaled 1,544,252 km, distributed between buses, cars, and other means like walking or metro.	257.02
FUEL BURNING - WTT EMISSIONS	WTT emissions resulting from downstream transportation, natural gas, exports and commuting activities.	68.79
SOLID WASTE DISPOSAL	This included waste generated by employees and visitors. The amount of waste generated was 266 tons.	156.23

TOTAL EMISSIONS

622.88 $mtCO_2e$

Headquarters Activities Summary



Scope 2		Scope 3		Total
111.89 $mtCO_2e$	+	510.99 $mtCO_2e$	=	622.88 $mtCO_2e$


BENCHMARKING &
CARBON INTENSITY

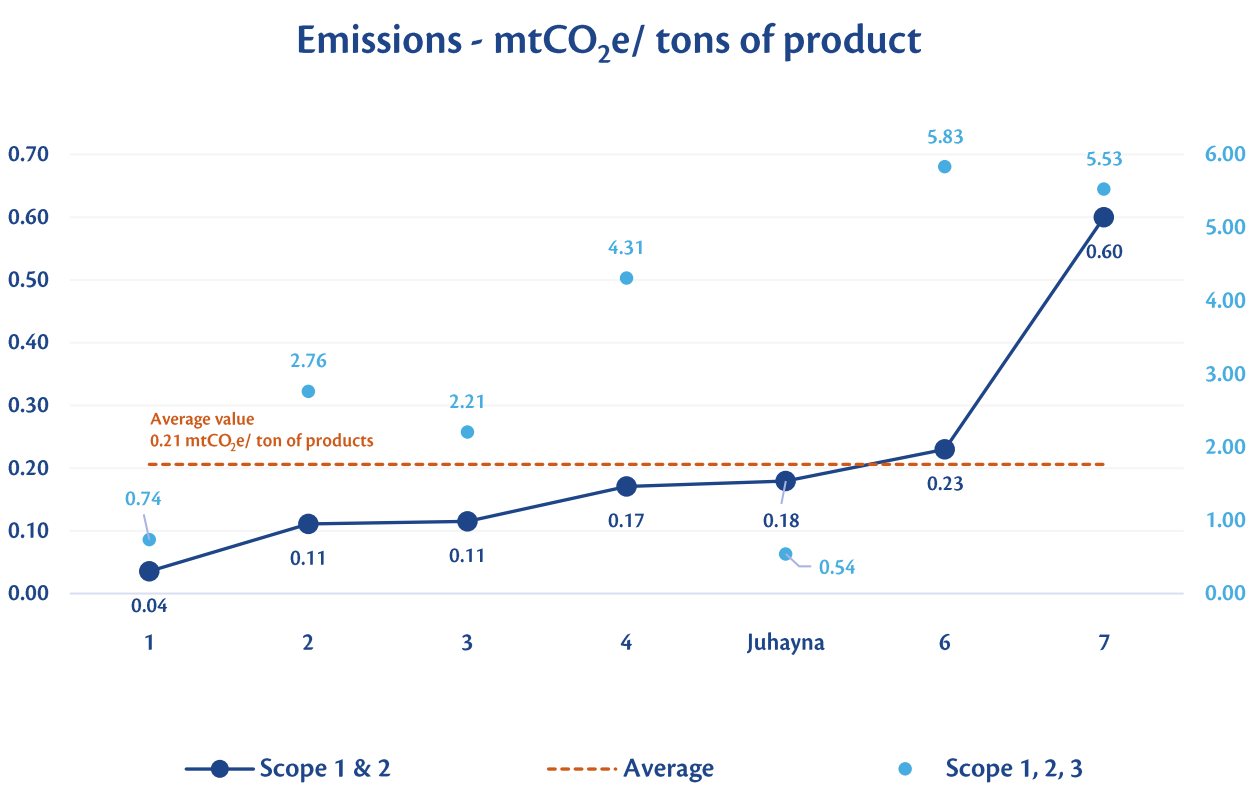
EXTERNAL BENCHMARKING

In order to know where we stand as a company, we have further chosen to perform a benchmarking analysis. The benchmarking is performed in two steps, starting with an external benchmarking and later on continuing with an internal benchmarking.

Emissions from Scope 1 (direct emissions) and Scope 2 (indirect emissions) are taken into consideration in the benchmarking, while Scope 3 (indirect emissions) have been also included as they reflect emissions that occur in the company's value chain, this might represent the company's biggest GHG impacts as well as significant opportunities for improvement..

For external benchmarking of carbon footprints, a common approach is relating emissions (Scope 1 and 2) to production output, to be able to compare businesses with each other. Juhayna's performance has been compared to 6 different dairy companies, operating in different parts of the world.

Dairy companies vary in scope of business, for example outsourced milk production and types of products manufactured. Additionally, the businesses are located in different parts of the world. This might imply differences in activities included in the scopes, as well as different system boundaries and methodologies when calculating carbon footprints. It is therefore of importance to be aware that this external benchmarking is not stating and comparing actual performance between the dairy companies but should rather be seen as an indicative measure.



The lowest value is 0.04 $mtCO_2e$/ ton of products, where the average value is 0.21 $mtCO_2e$/ton of products. Looking at the chart, we realize the importance of our sustainability work and see that there is still room for improvements to be done. Therefore, we have set our way forward, suggesting projects to be further explored and looking into opportunities to be implemented to decrease our carbon footprint and impact on the environment.

BASELINE CARBON EMISSIONS INTENSITY & INTERNAL BENCHMARKING

When operating our business, we at Juhayna do not solely account for our emissions. We strive to continuously improve our activities. We want to keep track on our internally progress and find solutions for sustainability that confirm with our business, and at the same time retain our core competencies and distinctiveness among other dairy companies.

Therefore, in order to be the best version of ourselves, we have chosen to perform an internal benchmarking analysis as well. Alike the external benchmarking, only Scope 1 and 2 emissions are included in the internal benchmarking.

Juhayna's Baseline Carbon Emissions Intensity

Scope 1 & 2 emissions

SALES	EBIT*	output
12.31 $mtCO_2e$/ Mil.EGP	**115.57** $mtCO_2e$/ Mil.EGP	**0.1794** $mtCO_2e$/ tons of product
193.16 $mtCO_2e$/ $Mil	**1,813.92** $mtCO_2e$/ $Mil	

*Earnings Before Interest and Taxes

FARMING

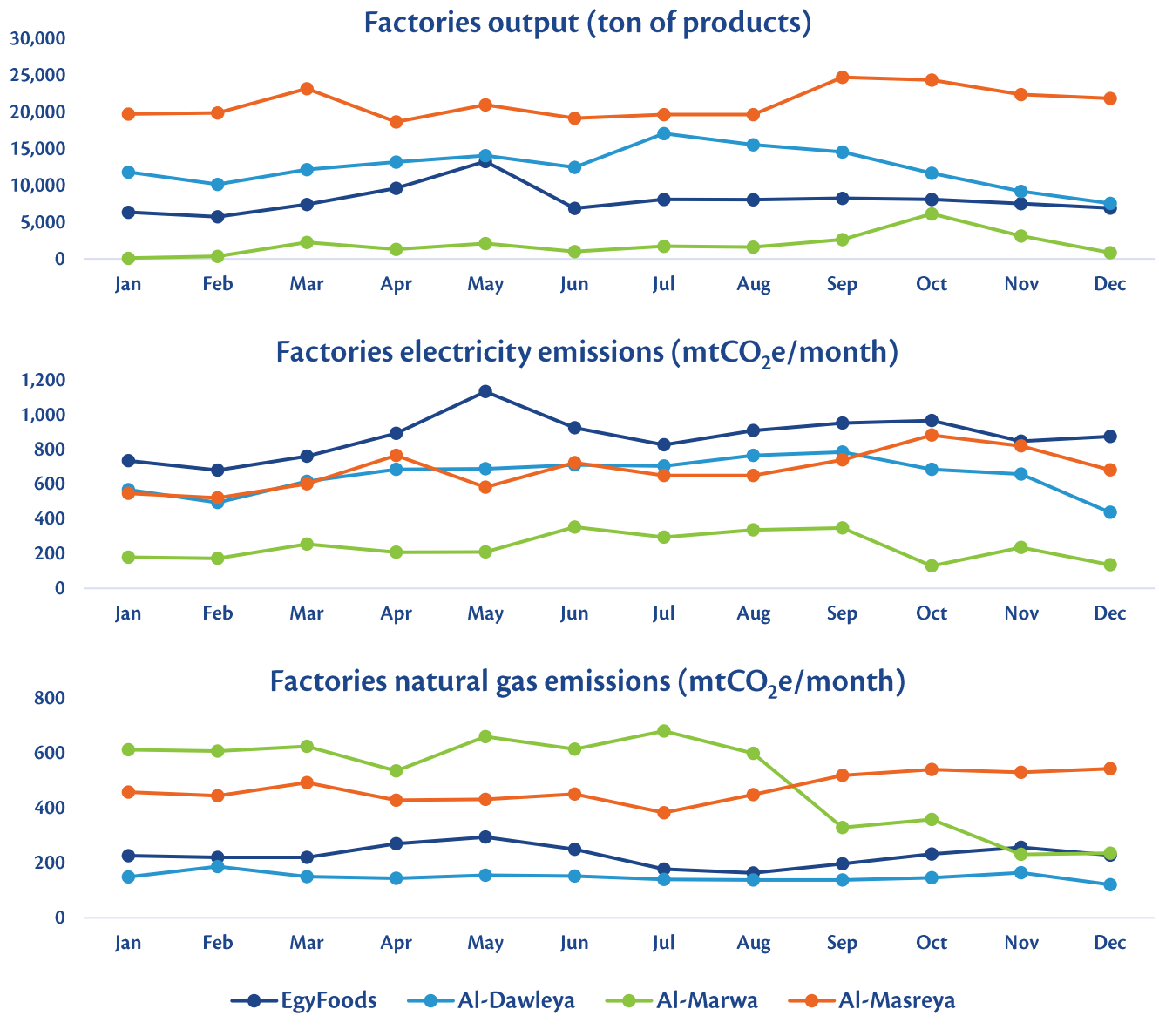
In order to set a base for comparison with future years and allow improved analysis and target setting at the farms level, direct emissions intensity at the farms were determined in terms of the milk production and the crop area for the reported baseline year. The intensity of the activities under scope 1 emissions for each of the two farms at Al-Bahariya and Al-Farafra Oasis were determined per crop area, while an additional metric – the emissions intensity per ton of milk produced - was determined for the livestock farm at Al-Bahariya Oasis (Al Aseela).

Farm	On-site Diesel	Livestock	Synthetic Fertilizers	Crop Residues	Total
Direct Emissions Intensity ($mtCO_2e$/Ton of Milk)					
Al-Aseela	0.238	0.387	0.000048	0.0032	0.628
Direct Emissions Intensity ($mtCO_2e$/Crop Area)					
Al-Aseela	12.538	20.413	0.00252	0.171	33.124
Al-Farafra	1.264	0.000	0.00093	0.220	1.485

MANUFACTURING

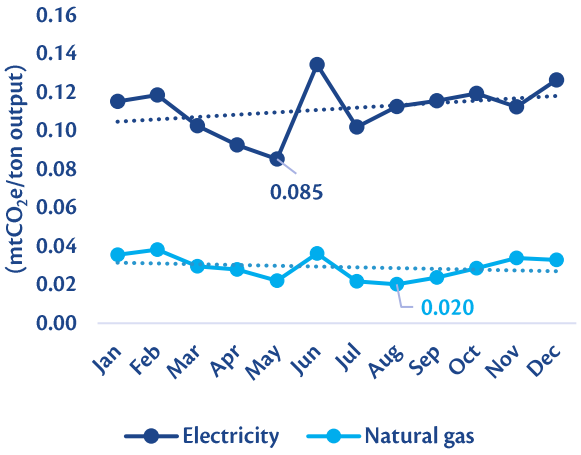
The categories of Scope 1 and 2 of the manufacturing include the use of natural gas and the electricity consumption, as well as the downstream transportation from the factories to the distribution centers. For each of the factories, the emissions are set as $mtCO_2e$ per ton of product output for each month of the year. The lowest values of the year were then identified. These values were used to see what levels we could reach in manufacturing. If we every month could achieve as these lowest values, which we have reached during 2019, we could enhance our carbon footprint and reduce our emissions.

Lowest values achieved for the year 2019	Unit	EgyFoods	Al-Dawleya	Al-Marwa	Al-Masreya
Natural gas	$mtCO_2e$/ton product output	0.0202	0.0082	0.1240	0.0194
Electricity	$mtCO_2e$/ton product output	0.0853	0.0412	0.1001	0.0259
Carbon Intensity (including downstream transportation)	$mtCO_2e$/ton product output	**0.1537**	**0.0803**	**0.4011**	**0.0706**

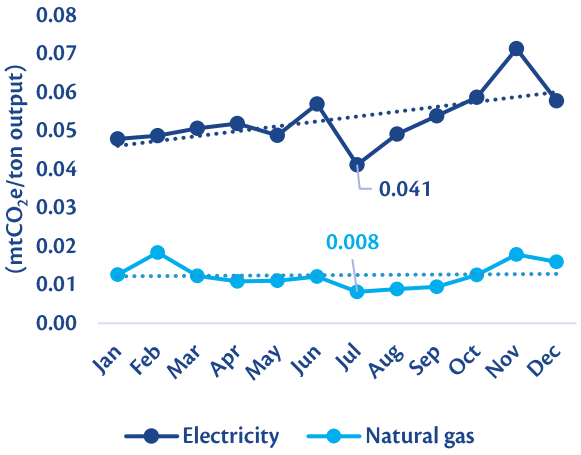


Factories Carbon Intensity ($mtCO_2e$/ton output product)

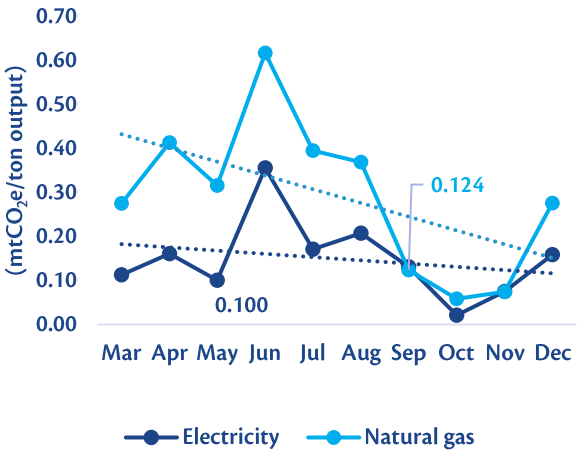
EgyFoods



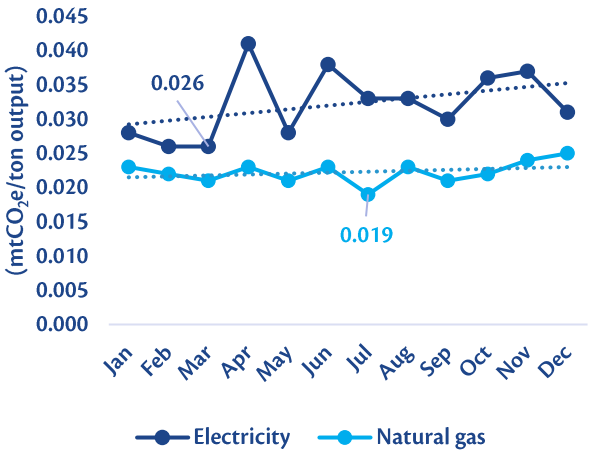
Al-Dawleya



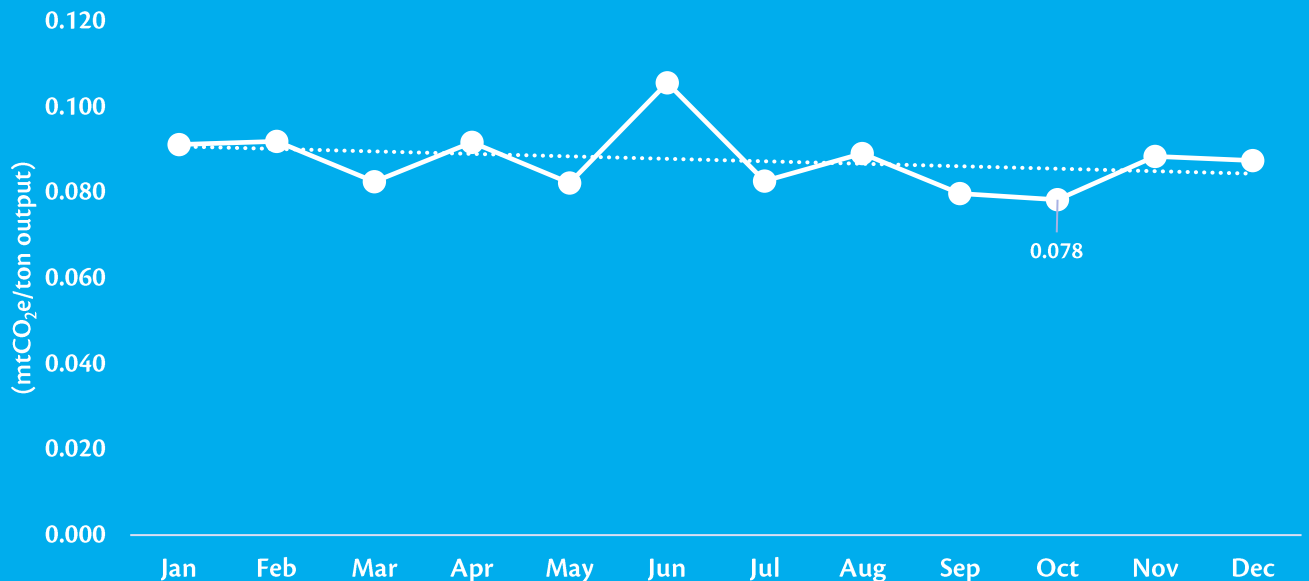
Al-Marwa



Al-Masreya



Factories total carbon intensity ($mtCO_2e$/ton output product)

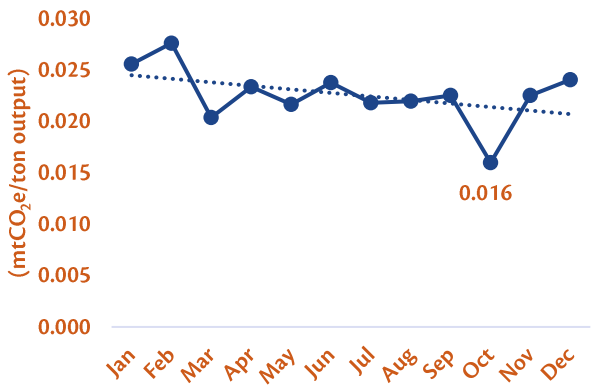


Distribution

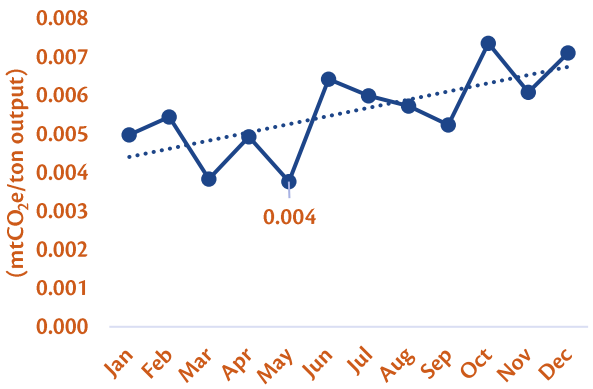
For the distribution centers, the fuel and electricity consumption for each month of the year have been considered as emissions in $mtCO_2e$ per ton of product output. Similarly, to the manufacturing, the lowest values of the year are identified.

Lowest values achieved for the year 2019	Unit	TIBA
Downstream transportation (Warehouses to retail)	$mtCO_2e$/ton product output	0.016
Electricity Consumption	$mtCO_2e$/ton product output	0.004
Carbon Intensity (Including natural gas consumption and refrigerants leakage)	$mtCO_2e$/ton product output	**0.0304**

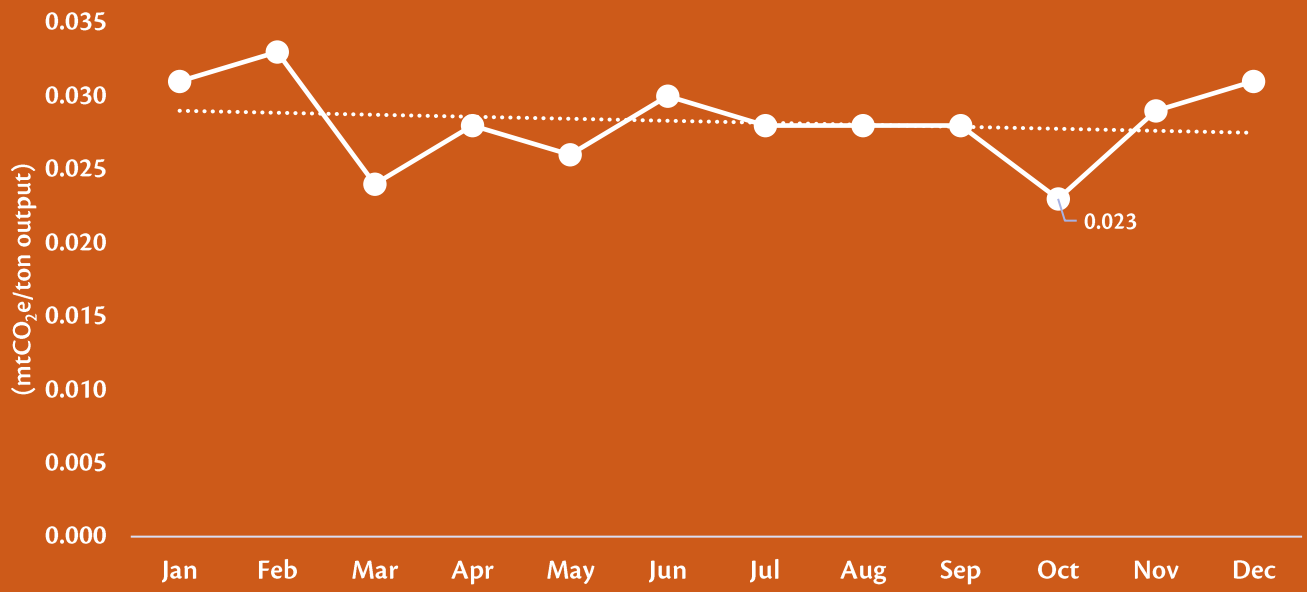
Downstream transportation ($mtCO_2e$/ton output)



Electricity consumption ($mtCO_2e$/ton output)



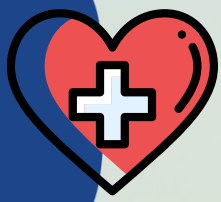
Distribution Centers Carbon Intensity ($mtCO_2e$/ton output product)



ENVIRONMENTAL IMPACT ASSESSMENT

In this section, the environmental impacts of some of the main activities that were assessed in earlier sections in terms of their carbon footprint, will be represented in terms of damage caused to three major categories; (1) Human Health; (2) Natural Environment; (3) Resource availability.

In the following damage assessment of the activities on the categories mentioned above, all the environmental impacts such as emissions of toxic substances and particulate matter into the atmosphere and oceans, freshwater toxicity, ozone depletion, mineral and fossil resources depletion, and land transformation, are taken into consideration in addition to the carbon footprint assessment.



Impacts on Human health

Measured in "**DALY**" - "Disability-adjusted life year" which represents the burden of disability associated with a disease or disorder, or the total number of years lost due to illness, disability, or premature death within a given population.

The DALY was developed as a universally applicable metric enabling the project to provide the first-ever systematic assessment of disease burdens, within which comparisons could be made across risk factors, ages, sexes and regions.

1 DALY Could represent = **1 year** of life lost (due to early death caused by the assessed activity)

Impacts on Ecosystems

Measured in "species. year" A measure for how many vascular plants and lower organisms, on land and in water, are expected to disappear because of the assessed activities.

The units "species.year" refer to the number of local species lost integrated over time (lost in a year).

1 species.year Could represent = **1 species** Disappearing during 1 year

Resource Scarcity

Measured in "Dollars", this category represents the extra costs required for future mineral and fossil resources extraction over an infinitive timeframe expressed in USD2013 per unit of resource extracted.

USD2013 represents = The extra cost required over an amount of resource expected to be extracted in the future.

ELECTRICITY CONSUMPTION	55.79 DALY	0.1388 species. yr	5,824,707.10 USD2013
MILK PRODUCTION	0.11 DALY	0.00068 species. yr	1,073.07 USD2013
NATURAL GAS	0.0079 DALY	$1.80*10^{-05}$ species. yr	2,869.93 USD2013
DIESEL CONSUMPTION	16.33 DALY	0.0305 species. yr	5,734,489.50 USD2013
WATER CONSUMPTION	7.32 DALY	0.0292 species. yr	53,691.76 USD2013
REFRIGERTANT CONSUMPTION	0.03 DALY	$6.70*10^{-5}$ species. yr	709 USD2013

GHG REDUCTION TARGETS

2025

Being one of Egypt's leading dairy manufacturers, not only do we acknowledge the significance of quantifying and reporting our businesses' GHG emissions, but we also realize that part of giving back to our community lies in our responsibility to take the initiative to set targets to reduce GHG emissions from all our lines of business, in response to the global issue of Climate Change. We aspire to materialize our contribution to the global issue by setting specific targets pertaining to each sector that would ensure our businesses are run sustainably all the way from "Farm to Consumer".

The figure below identifies the targets we had set per sector based on our analysis of the previously quantified Scope 1 and 2 emissions, and in accordance with the benchmarking demonstrated in the previous section. Considering the current carbon footprint being our first, we have set 2019 as the fixed target base year, while setting the target completion year to 2025.

By the year 2025, we aim to reduce our GHG emissions by 15% Compared to the baseline year 2019.

This reduction could be achieved by reducing the farms emissions by 10%, the factories by 15%, the distribution centers by 10% and the distribution centers by 5%.

15%

Current intensity:
0.1794
$mtCO_2e$/ ton of output

10%

15%

10%

5%

THE WAY FORWARD

Following the carbon footprint assessment of our business' activities, and setting GHG reduction targets to be achieved by 2025, we have identified a number of projects that could be further researched and analyzed for their implementation feasibility that would certainly help reduce our environmental impacts as well as enhance the sustainability of our operations, along with an aim to accelerate our progress towards reaching the targets we have set.

CARBON FOOTPRINT (CFP) MANAGEMENT SYSTEM

Following the quantification of our GHG emissions, we realized the need to have a CFP Management System in place for future data tracking and collection. The CFP Management System is known to have a direct impact on emission reductions as it facilitates the identification of activities in need of enhancement and opportunities to improve the business. In addition, it would enhance the accuracy of the quantification of our GHG emissions, including the level of complexity and calculation methodologies. The Carbon Footprint Management System would be according to ISO 14064-1:2018 standards to facilitate certification.

ENERGY MANAGEMENT SYSTEM (EnMS)

We have successfully implemented an EnMS according to ISO 50001 for some of our factories and we have seen its rewarding payoffs in terms of savings in both energy and water use. As a further way forward, we will explore the opportunities of implementing an EnMS for Juhayna's entire business' facilities including Al-Marwa factory based on the success of the system's on-going implementation at our other factories, as well as our farms, distribution centers, and our headquarters.

SOLAR WATER HEATERS AT OUR FACTORIES

For our factories, we see the potential of partly replacing our conventional heating systems with solar ones. This would reduce our consumption of natural gas; thus, avoiding its associated emissions. The selection of the solar water heating system, including its sizing and other technical aspects shall be further explored.

BOOSTING OUR PV SOLAR STATIONS CAPACITY

Manufacturing has high requirements for electricity supply. As a step in decreasing our GHG emissions, we will explore the opportunities of increasing the share of renewable energy at our factories by installing more PV panels on roof-tops, and over parking shades.

On the other side, our farm in Al-Bahariya Oasis sources part of its electricity demands from our 1MW PV solar energy station which resulted in considerable avoided emissions. This initiative would decrease our dependence on diesel further at our farms, lower our operational costs and simultaneously help us reduce our environmental impacts.

ELECTRIC-POWERED DISTRIBUTION FLEET

We will also consider and investigate opportunities of replacing 10% of our vehicle fleet with electric-powered vehicles for distribution operations.

This would lower our dependence on diesel fuel and reduce the carbon footprint of our distribution fleet.

REAL-TIME ENERGY MONITORING SYSTEMS

We shall consider installing real-time monitoring systems across the energy-consuming equipment across our facilities, this would provide a systematic visualization of the energy consumption of individual energy-consuming systems and can help identify opportunities for energy-use reduction.

WASTE TO ENERGY AT AL-ENMAA FARM

One of our dairy farm's most precious renewable energy sources; livestock manure, is produced in large amounts on a daily basis by our cattle which leads us to further explore the feasibility of implementing a biogas-PV or a biogas-diesel hybrid system to help us meet our farm's electricity demands sustainably by relying less on diesel-generated electricity.

QUICK WINS

Measuring and reporting Juhayna Group's GHG emissions from all 4 lines of its business has provided a rich pool of data. However, this includes gaps that could be analyzed and improved further to enhance the yearly environmental and business performance.

Based on the results of our GHG emissions per sector, which were previously demonstrated throughout this report, A set of recommendations, that could also be seen as opportunities of quick wins have been identified based on the analysis of our activities and GHG emissions.

These recommendations include energy efficiency measures and best practices, which could be implemented as applicable and where feasible across the various sectors in order to meet the reduction targets and reduce our carbon footprint.

Livestock and Milk Production (Locally Outsourced Milk)

- Develop a program within Juhayna's Farms Network in which all the local farms would be able to input periodic data such as herd size, milk volumes, feed usage and feed production, energy and fuel usage. Adopting such system and keeping a database will allow Juhayna and the local farmers to identify the major sources of emissions on the farms as well as provide a clear picture of the actions and opportunities that could be taken to reduce the emissions.
- Consider providing financial incentives to motivate the local farms' owners to sign up to the program, which is expected to ensure more local farms commit to the program thereby accelerating the work to reduce carbon emissions.

Packaging

- Optimizing packaging designs and sizes and explore possibilities for a cut down in material use and adopting a "fit-for-purpose" approach.
- Consider phasing out non-recyclable and plastic packaging to sustainable alternatives such as recyclable paper, glass, biodegradable or compostable plastic alternatives where feasible.

Refrigerants Consumption and Leakage

- Maintain a comprehensive tracking system of the purchased refrigerants including its type and quantities, and their exact location of usage.
- Consider replacing R-134A refrigerant with a more environmentally friendly alternative such as R-1234yf, R-152a or R-744, where feasible.

Purchased Electricity

- Consider energy efficiency as a priority aspect in the procurement of products and equipment.
- Consider installing occupancy sensors in spaces such as private offices, meeting rooms, storage rooms, and corridors to reduce unnecessary energy consumption.
- Promote a 'switch off' policy on lighting, so that only lighting that is being used is left on. Raise staff awareness by placing stickers above light switches and posters in staff areas.
- Develop an incentive system that rewards buildings or departments that utilize the least amount of electricity.
- Replace all non-energy efficient lighting with energy-efficient alternatives such as LEDs where applicable.
- Maintain the thermostat levels at 24°C where applicable to reduce the HVAC energy consumption. (The closer the thermostat setting is to the outside temperature, the greater the energy reductions.)
- Close window shades during hot summer days to reduce unwanted solar heat gain in closed spaces such as offices and meeting rooms (specifically when not occupied), to reduce the associated cooling loads.
- Consider installing new air compressors and HVAC controls at the factories where needed, as well as looking into possibilities of cooling efficiency projects to reduce electricity consumption.

Diesel Fuel Consumption at the Farms

- Perform regular maintenance as per the manufacturer's recommendations for the fuel-powered agricultural equipment and tractors to enhance their fuel consumption efficiency.
- Optimize the operation of the agricultural equipment and tractors by reducing their idling periods during operation.

Waste Management and Disposal

- Develop and implement a waste management plan that covers all sectors of Juhayna's business, including farms, headquarters and distribution centers.
- Implement the waste management plan which should cover at least the following aspects: waste identification, prevention, and reduction; expected generation rates; waste segregation; waste storage, and diversion/disposal; waste bins quantity and distribution, waste collection and transfer.
- Develop and execute a waste management policy across Juhayna's lines of business, highlighting the importance of complying with the requirements of the waste management plan procedures.
- Necessitate waste separation in the headquarters and offices and distribute multiple waste bins to facilitate the waste separation and storage procedures. (source-separating clean dry waste from wet waste reduces the energy and water required to clean the contaminated unseparated recyclable waste at the waste recycling facility)

Goods Transportation

- Implement periodic checkups and maintenance for the transportation fleet vehicles to ensure they operate efficiently with regards to their fuel consumption.
- Ensure the most efficient transportation routes are employed by the fleet drivers to cut down additional unnecessary fuel consumption.
- Optimize the shipments of goods and ensure the transporting vehicles are carrying the optimal load of goods, neither overloaded nor underloaded, to ensure fuel consumption efficiency.

Consumables

- Adopt a policy for making the default setting on all computers two-sided printing and promote online media instead of print media.
- Provide centralized printers in all offices instead of desktop or personal printers and consider adopting printer's management system to limit the printing activity per employee.
- Encourage the use of personal water bottles and coffee mugs at the offices, instead of single-use plastic water bottles or paper cups.

Planting trees

- Consider planting more trees at Juhayna's owned farm and landscapes, as well as other local farms where applicable, since growing trees help absorb and store atmospheric CO_2 in soils and in their biomass.
- Research the possibilities of diversified planting, as research shows that planting a mix of tree species could result in an increase in the amount of carbon sequestration.


RELEVANCE TO
SDGs

RELEVANCE TO SDGs

It's time to work together to build a sustainable future for the next generations. We at Juhayna Group, aim to reduce our social and environmental impacts. By reducing our carbon footprint, we are targeting towards a more sustainable living with less impacts on our globe.

The Sustainable Development Goals (SDGs) were adopted by all United Nations Member States in 2015. These universal goals are a call to action to protect the planet and ensure prosperity, and to end poverty. The 17 SDGs are integrated, and action in one area will affect the outcome in others, highlighting that the development must balance of social, economic and environmental sustainability. Our set targets for our business are directly related to 7 out of 17 SDGs, and further 3 SDGs as indirect positive.

> "We do not inherit the earth from our ancestors; we borrow it from our children."
>
> Native American Proverb

DIRECT POSITIVE IMPACT

INDIRECT POSITIVE IMPACT

DIRECT POSITIVE IMPACTS

At Juhayna, sustainability goes along with all our dairy products and juices. Starting at the farms, manufacturing, packaging and the transportation of our products, as well as at the Headquarters and distribution centers, we are constantly seeking for opportunities to improve our business.

At our farms, we keep seeking for implementing up-to-date agricultural practices. We believe in traditional farming methods combined with the most technologically advanced methods to ensure supply and quality. We have installed a solar energy station, which is considered as one of the milestones of the company. At the factories, we have recently implemented solar energy to generate electricity through our parking shades as a step towards clean energy. Further, we see opportunities to reduce our carbon footprint at our offices by enhanced waste management and recycling. For the distribution centers, planning our routes and looking over our transport vehicles could reduce our fuel consumption and decrease our carbon footprint.

Goal 2 – Zero Hunger

"End hunger, achieve food security and improved nutrition and promote sustainable agriculture."

As a main producer of dairy products and beverages, we seek to develop products with high nutritional value, while continuing to deliver on taste and quality. At the same time, food security and reducing food waste is part of our work.

We have adopted several strategies to ensure the quality of milk all the way from the farms and through the production, until it reaches the retailers and consumers.

For the farms, we have launched our own Farms Development initiative, targeting small and medium-sized dairy farms in Egypt. By installing shelter and efficient cooling systems for dairy cows, milk production is boosted while the quality in being ensured. Juhayna supports the farms in environmental and animal welfare practices to reduce their vulnerability to climate-related extreme events. All the farms included in the project must have a vet, sheds, cooling and data collection, as well as complying with certain requirements of hygiene, and farming management systems. Through this, the practices of the farms for outsourced milk are ensured and we could attain sustainable dairy farming.

Furthermore, we have connected the Dairy Sector Community through our annual conference to develop the expertise and interchange ideas of dairy farming practices. Food security is a high priority and therefore, we commit to the scaling-up of Nutrition Business Network to collaborate with other parties to identify sustainable opportunities within the dairy sector.

Goal 6 – Clean water and sanitation

"Ensure availability and sustainable management of water and sanitation for all."

We believe that managing, monitoring and reporting emissions for our business due to our consumption is central to maintain a sustainable environment. For our factories, we continue to invest to comply with regulations and efficiently manage the water dependency by integrating latest technology for water treatment into production systems.

In 2017, we purchased construction and operation equipment to effectively treat factory wastewater and convert it to clean water. Our factories also measure water use and monitor water quality. Lots of benefits such as greater water efficiency and less wastewater to treat before discharge followed and help us decrease our carbon footprint.

Additionally, we continuously work on increasing water-use efficiency across all our facilities to ensure sustainable withdrawals and reduce water consumption in all parts of our production processes, from farms to final product.

DIRECT POSITIVE IMPACTS (CONTINUED)

Goal 7 – Affordable and clean energy

"Ensure access to affordable, reliable, sustainable and modern energy for all."

We are proud of being the first Egyptian private company since 2016 to partner with an Egyptian solar energy startup, KarmSolar, inaugurating the 1 MW solar station in Al-Enmaa farm. We supply electricity to the private sector, and at the same time hedge against the risk of the increase of electricity cost. This initiative decreases our dependency on diesel annually at the farm, lower our operational costs and simultaneously helps us reduce our environmental impacts.

As for the manufacturing, we at Juhayna keep on continuously upgrading and enhancing our production. All our factories have received various certifications, including certifications for energy management. We are optimizing the electricity consumption, leading to reductions of electricity use and natural gas for all our factories.

We also take a set of actions, for example at our factory EgyFoods by improving the power factor, using LED lighting and improving the steam boiler efficiency, as well as better utilizing for cooling plant.

We do not stop here, but we strive to reduce our energy demands and carbon footprint by setting targets related to energy and electricity use. We drive energy efficiency practices across all our business and promote innovation that reduces energy consumption and improves energy efficiency. Also, increasing our share of renewable energy would contribute positively to reducing our emissions and reliance of non-renewable energy sources.

Goal 8 – Decent work and economic growth

"Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all."

Sustainable economic growth and technical upgrading and innovation goes hand in hand with our business. We aim to continuously enhance the technology utilized at the farms, as well as at the factories and distribution centers.

Regarding our employees, we all together form Juhayna, and investing in our employees is investing in ourselves. Therefore, we promote the professional and personal growth and development of all our employees. We always work on providing the appropriate work environment all over the entire business, as well as training programs to develop employees' skills. This includes technical training to dairy farmers in the sector and our own employees to support in sustaining productivity. We also apply a flexible working hours' model for our employees, where we provide digital tools for increased mobility and fewer on-site working hours.

Taking advantage of the digital transformation, our employees could benefit from flexibility and the emissions due to employee commuting could be reduced, while maintaining the same levels of productivity. Also, each month, an "Employee of the Month for Manufacturing and Commercial" is selected to reinforce exemplary behaviors and performance.

DIRECT POSITIVE IMPACTS (CONTINUED)

Goal 9 – Industry, innovation and infrastructure

"Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation."

Innovation is the key of success. Therefore, we choose to invest in R&D and our Innovation Center. This includes research regarding product and packaging development, strategic, technical and other types of innovation across our value chain, starting at the farms all the way to the factories and distribution centers to continuously adopt new technologies.

We are continuously working on our packaging, where all the packaging material sourced from Tetra Pak are 100% FSC (Forest Stewardship Council) labelled. This guarantees that the entire value chain, from raw material sourcing to final product, is certified to be compliant with responsible forestry practices and forest management.

Also, Tetra Pak has recently launched the "Push the Straw Back in the Pack" initiative, proposing a straw or a screw cap that will have instructions showing that one should push the straw back in the empty pack, or re-attach the cap when they are finished. This is to ensure all parts of the package go through the proper waste disposal process. We at Juhayna, have chosen to prioritize environmentally friendly packaging and join Tetra Pak in their initiative of eliminating and reducing the use of plastics.

We have also built sustainable infrastructure at the city of our factories, establishing roads, accelerated supply of electricity and water to our facilities and thereby increased the accessibility of employees, and transformed the area through enhanced safety and conditions. Furthermore, we build cross-sector partnerships for investments in energy infrastructure, industrial equipment and technology, as well as investments in infrastructure to support the development of dairy farming including water, technology and connectivity among others.

Goal 12 – Responsible production and consumption

"Ensure sustainable consumption and production patterns."

As a large producer of dairy products and juices, our responsibility goes along. We have applied a Waste Optimization Cycle for waste management system for our factories to ensure waste materials are identified, collected, removed, and disposed properly to prevent contamination and reduce adverse impacts on the environment.

For the downstream transportation, our set targets seek to reduce the emissions by looking over and optimizing our routes, as well as continuing to improve the operation and management of vehicle fleets to maximize the energy efficiency of transportation.

We apply global standards and methodologies for sustainability throughout the supply chain, reducing milk and food losses and solid waste, as well as adopting responsible packaging practices. For our international shipping, we contact with shipping companies that adhere to environmental standards and practices.

We have also launched our first pilot project to increase recycling of our by-products of fruits at the manufacturing processes. Another initiative is extensive communication with our stakeholders to raise awareness of sustainable patterns and reduce environmental impacts.

Goal 13 – Climate action

"Take urgent action to combat climate change and its impacts."

We joined the United Nations Industrial Development Organization's (UNIDO) MED TEST II initiative in 2017, aiming to encourage sustainable patterns in the Mediterranean region. By participating in this project, we want to continue learning about best practices in resource efficiency and integrated environmental management systems, to increase our productivity and reduce our environmental impacts.

We have set to measure and address our greenhouse gas emissions for the first time, taking all parts of Juhayna's business into consideration. By doing this, we aim to keep track on our emissions, gain insight into our business' main contributing activities of GHG emissions, and identifying additional opportunities and setting targets to reduce our carbon footprint.

INDIRECT POSITIVE IMPACTS

We at Juhayna, seek to promote healthy lives for all ages, as well as sustainable cities and communities. Actions in one area throughout all the mentioned SDGs directly related to our business carbon footprint, will affect the outcome in others, here listed as further 3 SDGs to have indirect positive impacts. We have particularly been working on our farms and manufacturing for certifications to reduce our emissions and impacts on the environment. By measuring our emissions and setting targets to reduce our carbon footprint, we seek to continue our work to promote a sustainable society, paying special attention to waste management, wastewater treatment and energy efficiency, as well as sustainable packaging solutions.

Goal 3 – Good health and well-being

Ensure healthy lives and promote well-being for all at all ages.

Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

Goal 11 – Sustainable cities and communities

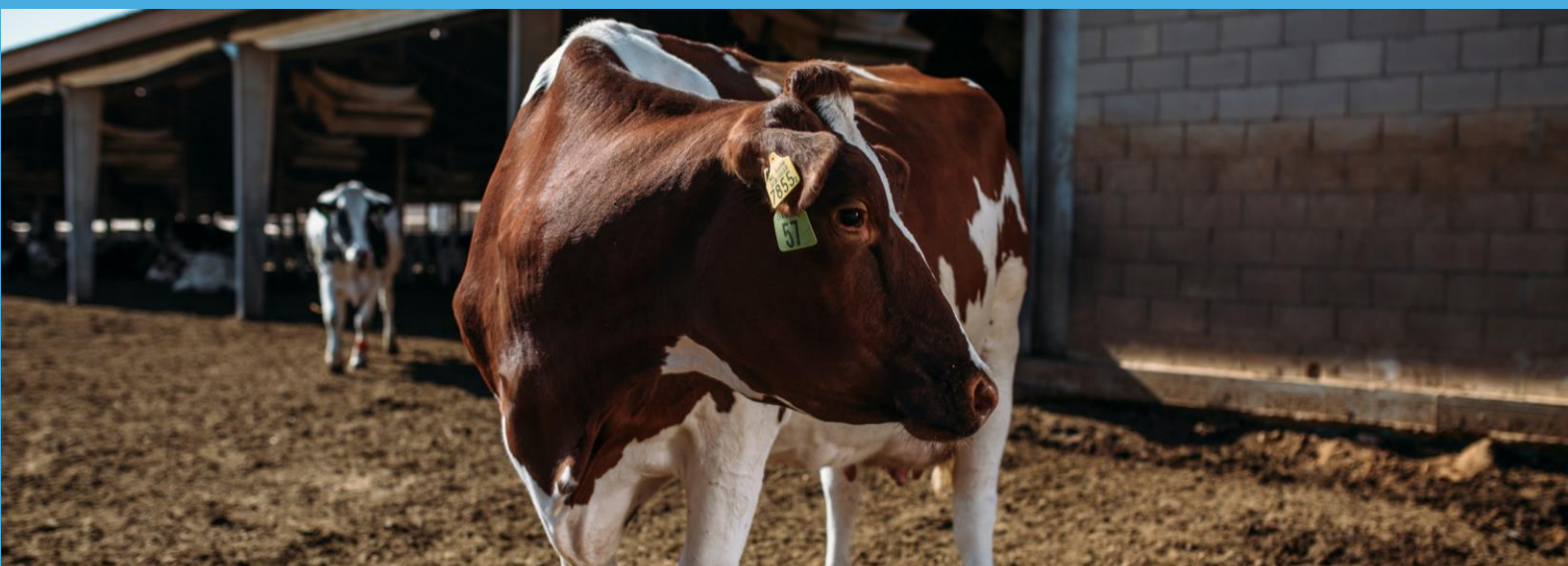
Make cities and human settlements inclusive, safe, resilient and sustainable.

- **Target 11.6:** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- **Target 11B:** By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change.

Goal 15 – Life on land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, forests, wetlands, mountains and drylands, in line with obligations under international agreements.



EGYPT VISION 2030

ALONG WITH THE UNIVERSAL SDGS BY THE UN, EGYPT HAS SET ITS OWN SUSTAINABLE DEVELOPMENT STRATEGY (SDS) - EGYPT VISION 2030 - ADDRESSING THE COUNTRY'S SPECIFIC CHALLENGES AND NEEDS. THE VISION HAS THREE DIMENSIONS; A SOCIAL, ENVIRONMENTAL AND AN ECONOMIC DIMENSION, EACH ONE WITH ITS OWN PILLARS WITH A TOTAL OF TEN PILLARS. OUR TARGETS TO REDUCE OUR CARBON FOOTPRINT ARE POSITIVELY COHERING TO THE NATIONAL SDS, WHERE WE PARTICULARLY CONTRIBUTE TO MEET TWO PILLARS, ONE PILLAR IN EACH OF THE ECONOMIC AND ENVIRONMENTAL DIMENSION, AND ADDITIONALLY ONE PILLAR IN THE SOCIAL DIMENSION AS AN INDIRECT CONTRIBUTION.

ECONOMIC DIMENSION

2ND PILLAR

Energy: An energy sector meeting national sustainable development requirements and maximizing the efficient use of various traditional and renewable resources contributing to economic growth, competitiveness, achieving social justice, and preserving the environment.

SOCIAL DIMENSION

5TH PILLAR

Social justice: By 2030, Egypt is a fair interdependent society characterized by equal economic, social, political rights and opportunities realizing social inclusion. A society that supports citizens, right in participation based on efficiency and according to law, encouraging social mobility based on skills. A society that provides protection, and support to marginalized and vulnerable groups.

ENVIRONMENTAL DIMENSION

9TH PILLAR

Environment is integrated in all economic sectors to preserve natural resources and support their efficient use and investment, while ensuring next generations' rights. A clean, safe and healthy environment leading to diversified production of resources and economic activities, supporting competitiveness, providing new jobs, eliminating poverty and achieving social justice.

QUALITY ASSURANCE STATEMENT

Masader has been appointed by Juhayna Group to conduct GHG calculations pertaining to Juhayna's operational activities in Egypt for the period from 1st of January to the 31st of December 2019. The scope covered Juhayna's farms, factories, distribution centers, and headquarters.

MASADER'S INDEPENDENCE AND QUALITY CONTROL

We adhere to the principles of integrity, objectivity, competence, due diligence, confidentiality, and professional behavior. We maintain a quality control system that includes policies and procedures regarding compliance with ethical requirements, professional standards, and applicable laws and regulations.

MASADER'S RESPONSIBILITY

In conducting GHG calculations, we have adopted the Greenhouse Gas Protocol and ISO 14064-1:2018, Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals.

It is our responsibility to express a conclusion about the quality and completeness of the raw data collected/ provided by Juhayna.

We have performed the following quality assurance/ quality control tasks:

- Several rounds of data requests were performed whenever the received information was not clear.
- All data presented in this report were provided by the reporting entity and revised and completed by our technical teams.
- For data outliers, meetings were held to investigate the accuracy of the data and new data was provided when requested.
- Any gaps, exclusions and/or assumptions have been clearly stated in the report.

CONCLUSION

Based on the aforementioned procedures, nothing has come to our attention that would cause us to believe that Juhayna's raw data used in the GHG calculations have not been thoroughly collected , verified and truly represent Juhayna's resource consumption in 2019 related to all categories/aspects identified in this report. We do not assume and will not accept responsibility to anyone other than Juhayna for the provided assurance and conclusion.

ABOUT US

MASADER is an innovative interdisciplinary consulting, design and engineering sustainability firm based in Cairo, aiming at leveraging positive impact across the MENA region and globally. It specializes in Resource Efficiency, Sustainable Management of Natural Resources and integrated Sustainability Solutions. Since 2015, Masader has led 100+ projects across the areas of energy, environment, climate change & carbon footprint, circular economy, green building (LEED), as well as corporate sustainability strategies, reporting and certification.

Dr. Abdelhamid Beshara

Founder and Chief Executive Officer
Masader, Environmental & Energy Services S.A.E

environmental & energy services masader

157 Baehler's Mansions Building, 26th of July Street, 2nd Floor Zamalek, Cairo, Egypt

Phone/ Fax:	+202 27354033
Email:	info@be-masader.com
Website:	www.be-masader.com

Juhayna

CARING EVERYDAY since 1983