



# THE SUSTAINABLE REAL MILK COMPANY

December 2020

# MISSION STATEMENT

---



**Revolutionize the dairy industry by leveraging deep technology to allow the sustainable production of high-value dairy products with the lowest carbon footprint.**

---

# FORWARD LOOKING STATEMENT



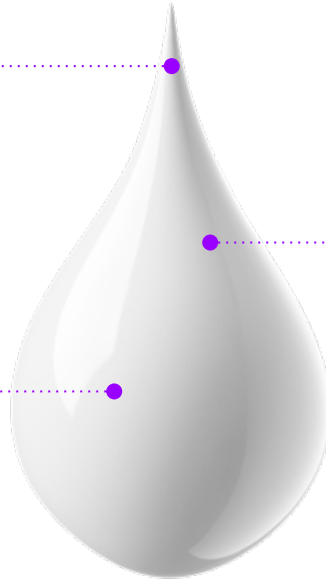
This presentation was prepared by Bio Milk Ltd. (the "Company"), and is given to you only for the provision of concise information for the sake of convenience, and may not be copied or distributed to any other person. The data and information included in this presentation should not be interpreted as advice and should not be relied on for any purpose. Such data and information should not be copied or used except as expressly permitted in writing. This presentation does not purport to be comprehensive or to contain any and all information which might be relevant in connection with the making of a decision on an investment in securities of the Company. No explicit or implicit representation or undertaking is given by any person regarding the accuracy or integrity of any information included in this presentation. In particular, no representation or undertaking is given regarding the realization or reasonableness of any forecasts regarding the future chances of the Company. To obtain a full picture of the activities of the Company and the risks entailed thereby, see the full immediate and periodic reports filed in

connection with the Company with the Israel Securities Authority and the Tel Aviv Stock Exchange Ltd., including warnings regarding forward-looking information, as defined in the Securities Law, 5728-1968, included therein. The forward-looking information in the presentation may not materialize, in whole or in part, or may materialize differently than expected, or may be affected by factors that cannot be assessed in advance. For the avoidance of doubt, it is clarified that the Company do not undertake to update and/or modify the information included in the presentation to reflect events and/or circumstances occurring after the date of preparation of the presentation. This presentation is not an offer or invitation to buy or subscribe for any securities. This presentation and anything contained herein are not a basis for any contract or undertaking, and are not to be relied upon in such context. The information provided in the presentation is not a basis for the making of any investment decision, nor a recommendation or an opinion, nor a substitute for the discretion of a potential investor.

# WHAT IS MILK?

A white fluid secreted by the mammary glands of female mammals for a period beginning immediately after birth.

**Milk intrinsically holds unknown secrets, while factually being the essence of food and subsistence.**



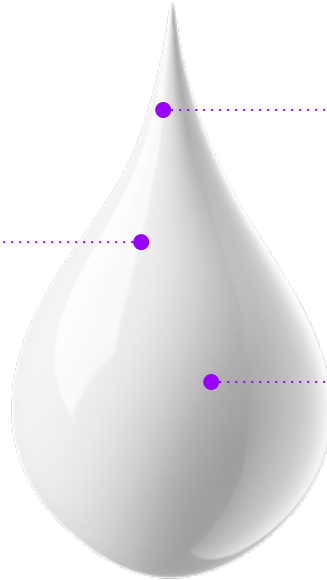
Lactation is a unique feature of female mammals. There is no food in nature that resembles its characteristics.

We've had it since we were born, and we enjoy it growing up

# MILK IS A PRODUCT OF EVOLUTION



Milk holds the secrets that have allowed living creatures to provide nourishment to their offspring with everything they need to survive, develop and live a healthy life.

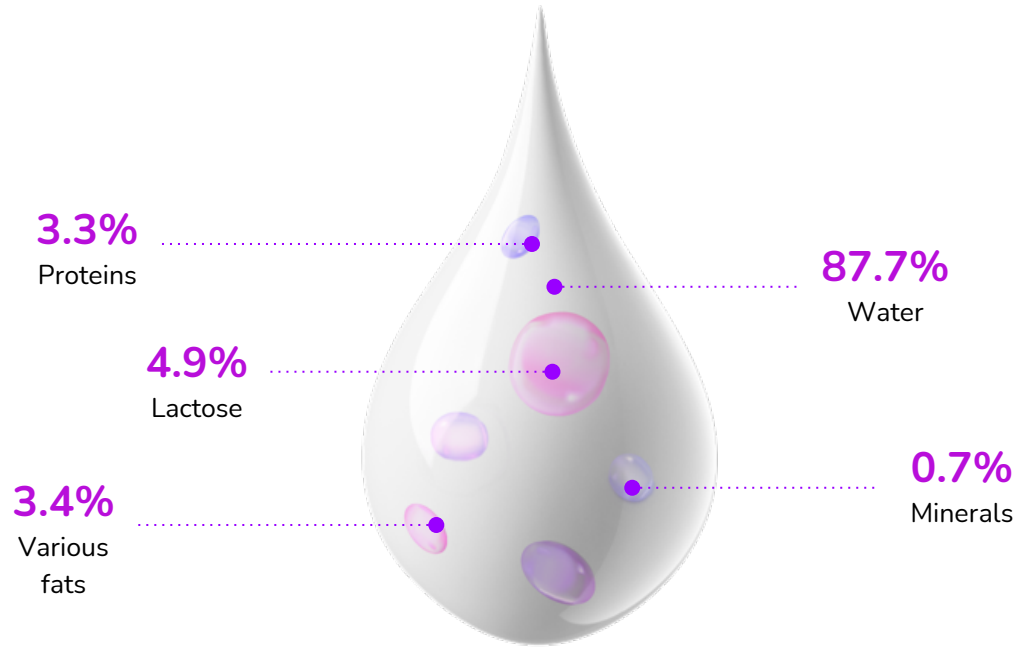


**The milk produced by a mammalian mother is a full diet on its own for a child.**

The mothers' mammary gland creates an environment that allows for the making of milk.

Milk and its components are a primary dietary staple of our life

# Milk Composition (\*cow)



Milk is both simple in appearance and complex in composition

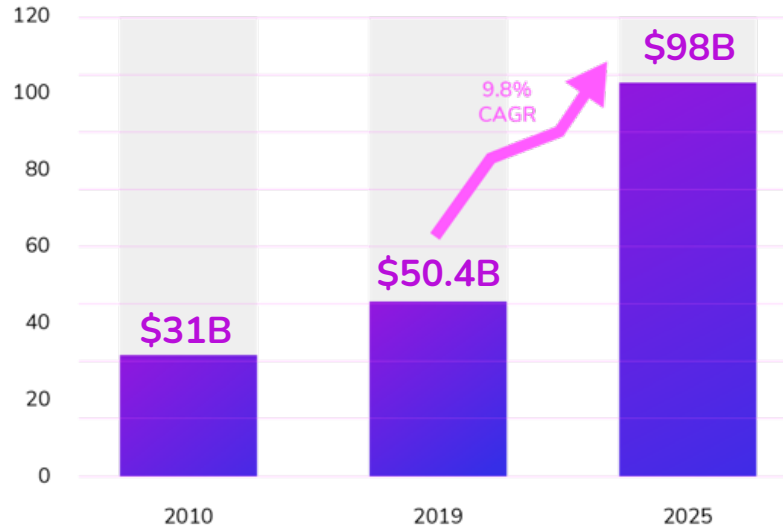
# LEADING US TO THE DAIRY INDUSTRY



Milk moves around and ends up in a variety of forms and shapes

# INFANT FORMULA

The global infant formula market (in billion USD)

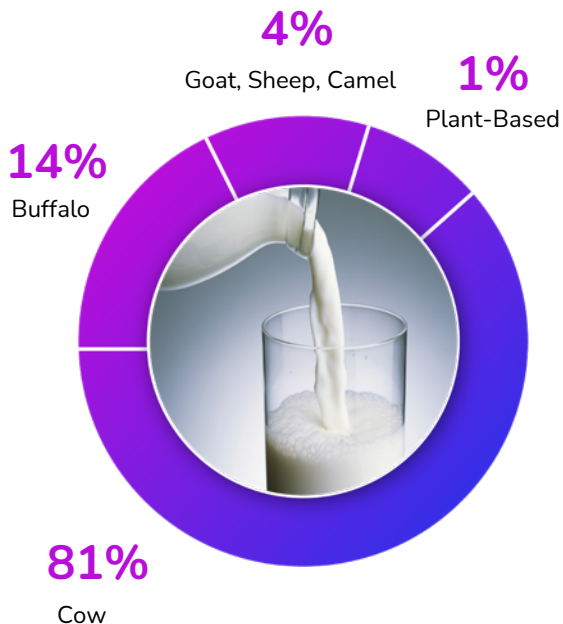


Sources: International dairy federation, Global market insights Inc.

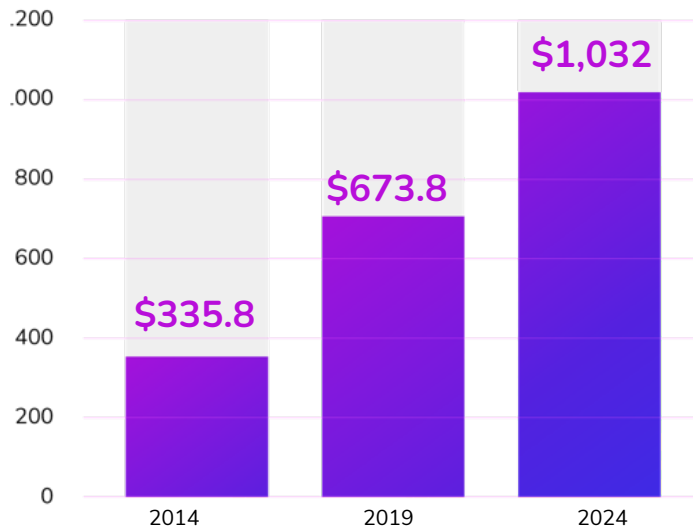




# THE DAIRY MARKET

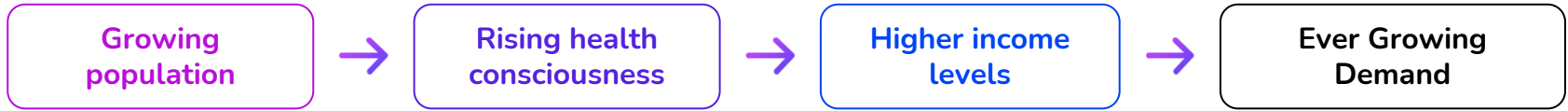


The global dairy industry (in billion USD)

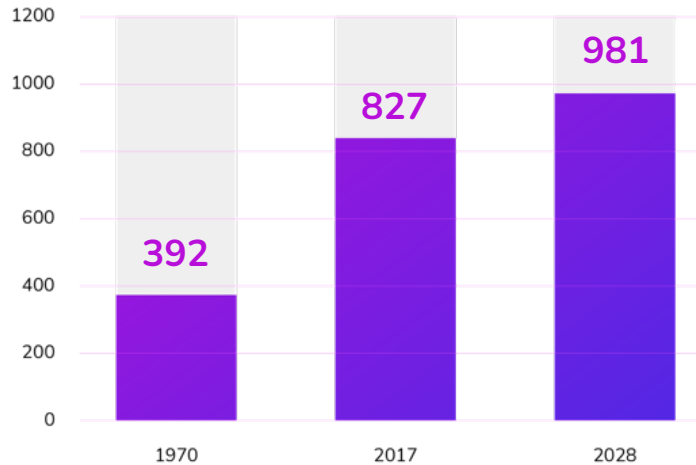


Sources: OECD, FAO, Gira, International dairy federation, IMARC Group

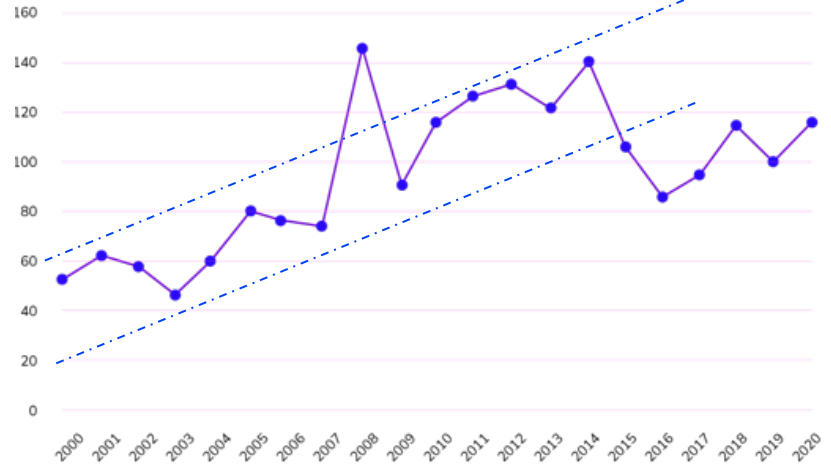
# INCREASING DEMAND



Global milk production (in millions of ton)



FAO Dairy Price Index



Source: The Food and Agriculture Organization of the United Nations

# MAKING THE HEADLINES



*France, Land of Croissants, Finds Butter Vanishing From Shelves*




**Huge Rising Demand for Camel Milk Market 2020**



**Non-Dairy Milk Alternatives Are Experiencing A 'Holy Cow!' Moment**

Dairy Processor News

Inside China



China's dairy farmers must increase production to meet demand for milk



**Got Milk: The Underground Online Marketplace for Human Breast Milk**

VICE



The New York Times

As Dairy Farms Grow Bigger, New Concerns About Pollution

**Liquid Gold: The Booming Market for Human Breast Milk**



Human milk is being bought, sold, and donated on an unprecedented scale. With demand comes fierce competition and potential risk.



The world needs to feed an additional 1.2 billion people... by 2030!

In 2050 our planet will be inhabited by close to 10 billion individuals.

**The demand for food will then be 56% greater than it was in 2010.**



**Countries aim to become immune to international supply disruptions, production shortfalls in other countries, or sudden and sharp rises in food prices.**

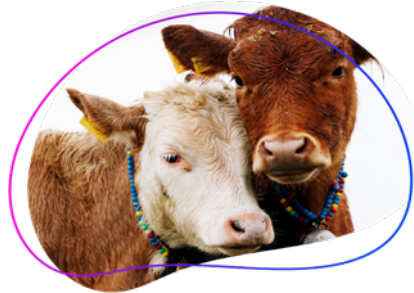
Reinforced by the impact of COVID-19, countries are pushing political agendas for becoming self-sufficient when it comes to essential products - milk and its by-products being on top of that list.

Today's conservative agricultural practices can't deliver enough food to meet ever-growing needs. A paradigm shift is needed in order to increase milk capacity and value across the globe. But it must not be done at the expense of an increasingly fragile environment.



## Gas Emissions

Overall 37% of global methane emissions come from cattle production



## Welfare

There are 270M dairy cows in the world



## Water Resources

900 Liter of water are required for every liter of milk produced



## Land Use

Billions of sq. meters are used to harvest animals to produce milk

The dairy industry alone contributes almost 4% to the total emissions of greenhouse gases from human activity

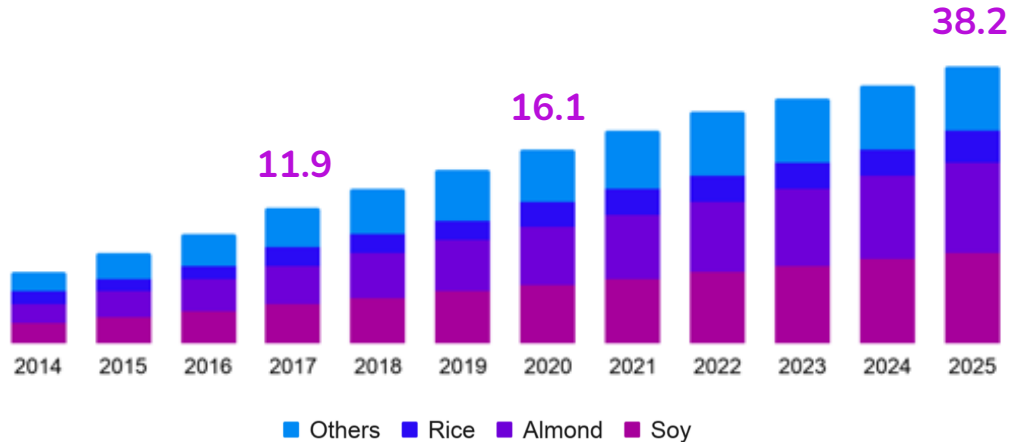
# MILK ALTERNATIVES (PLANT-BASED)



Plant-based dairy alternatives have the potential to be a pretty good replacement for the fluid, milk-drinking market.

**But when it comes to functionality, it does not fit the bill.** By-products - such as cheese, butter, cream, and yoghurt - they all need to be created with fresh raw milk.

Global dairy alternatives market estimates and forecasts (USD Billion)



Source: FIOR Markets

Consumer awareness and behavior shifts drive growing demand for alternatives to dairy.  
And with it, an ever-expanding array of plant-based products from which to choose.

”  
Despite some positive health effects  
of plant-based milk substitutes [...]   
they are not a replacement for  
animal-based milk products

---

Journal of Functional Foods, July 2020

\*And they are not that much better for our planet than animal milk

# NUTRITIONAL VALUE COMPARISON



	Cow's Milk	Soy Milk	Rice Milk	Coconut Milk	Almond Milk
Calories	158	95	130	45	35
Fats	9.05 g	4.5 g	2.5 g	4.25 g	2.5 g
Proteins	8.11 g	8 g	1 g	0 g	1 g
Carbohydrates	11.5 g	4 g	26 g	1 g	1 g
Calcium	294.2 mg	330 mg	315 mg	220 mg	330 mg

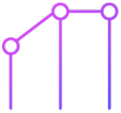
\*Based on averages for 240 ml serving





## **The world needs more milk**

Advances in modern agriculture such as careful breeding, intelligent farm management, and innovative technologies have all enabled to increase productivity and output of milk farms.



## **But those advances have reached a stage of plateau**

And resulted in a decline in milk solids.



## **The industry has proved to be unsustainable energetically and environmentally**

There is an urgent need to come up with new technologies which can give us the same products that we enjoy – milk, cheese, cream and butter – but that are less polluting.



“  
The food industry is on a  
journey to create products  
that have the highest  
Nutrient per carbon ratio

---



**Are you prepared to  
see the future of the  
milk industry?**

# OUR TECHNOLOGY

---



**01** First we isolate mammary cells, the ones whose job is originally to produce milk in their natural setting, inside of the mammal.



**02** We then culture those cells in our bioreactors and help them grow, enabling them to continue performing their original mission.



**03** Eventually the cells secrete milk, which can also be used for making the dairy by-products we all love.

That milk is a cultured dairy whole milk which can be personalized to meet consumers' taste, nutritional, and even therapeutic needs, and industries' functional requirements.

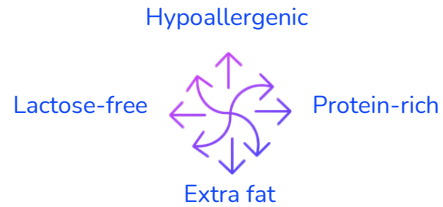
# BENEFITS



**Increased  
transparency & trust**



**Positive  
environmental impact**



**Personalization  
and versatility**



**Lab grade  
quality control**



Producing real cultured milk is impactful

# ANIMAL MILK



We have the unique ability to produce and tailor-make milk from all mammals

# HUMAN BREAST MILK

---



**We, humans, are the most sophisticated of all mammals.**  
And women stand at the cornerstone of human development.  
But the decent supply of women breast milk to young humans is often problematic.

---

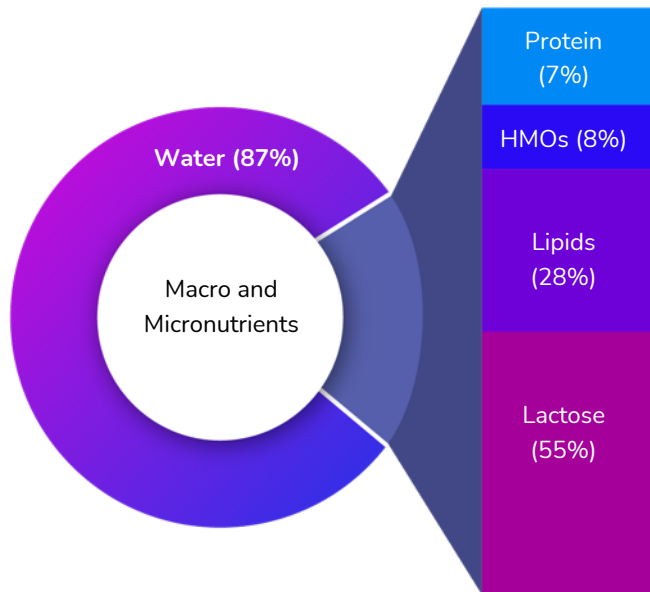
**At BioMilk we will leverage our knowledge and experience gained from the culture of animal milks,**  
and use non-invasive techniques in order to isolate and grow milk-secreting cells from human donors. As we do for other mammalian milks, we will culture those cells in our bioreactors.

---

We shall then produce the **Eve's Milk**,  
to feed and protect



## Human Breast Milk Composition



**Human milk oligosaccharides - aka HMO** - is a complex non-digestible sugar that is available only in human breast milk.

They promote infant health by supporting digestive, immune, and cognitive development.

HMOs form the third most abundant solid component of breast milk after lactose and fat.

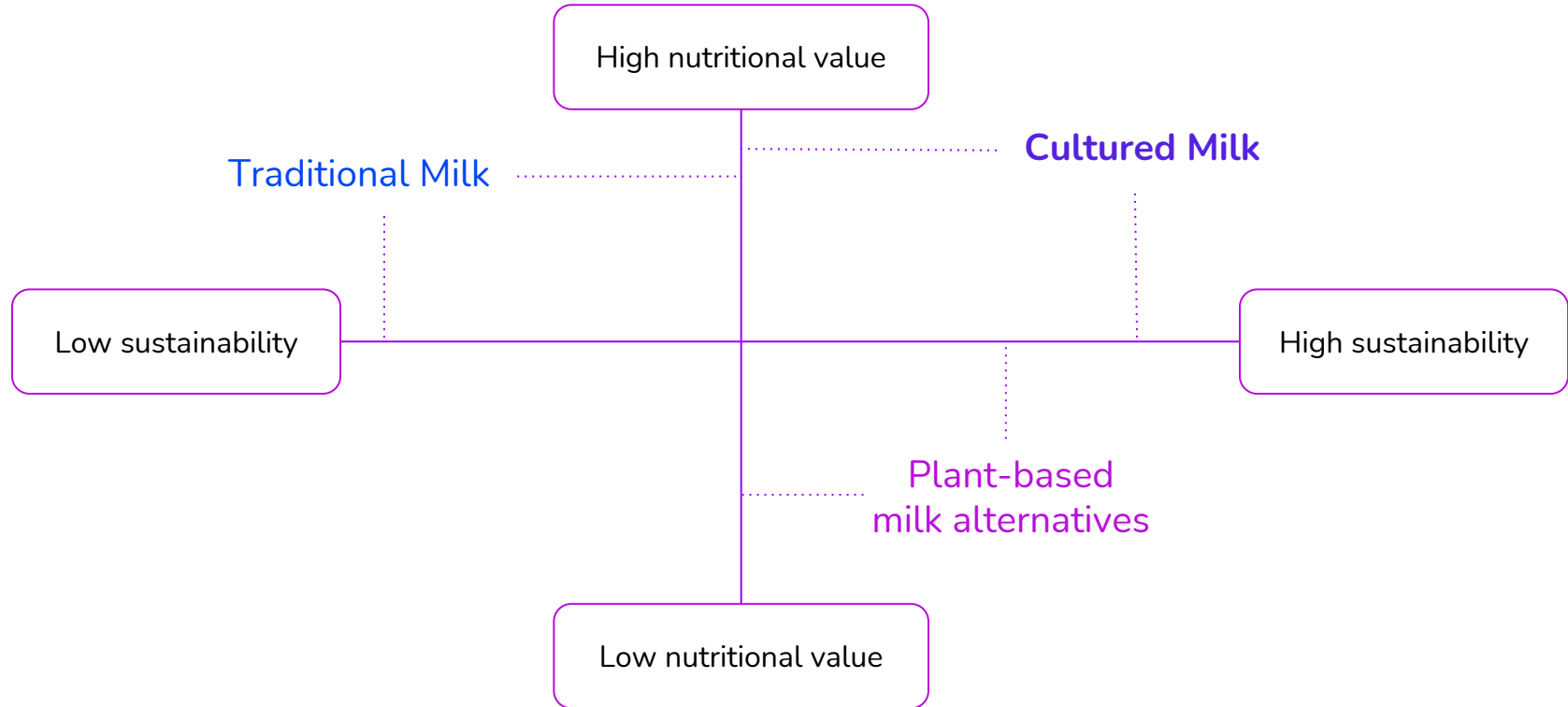
At BioMilk we focus on mastering the process of producing high-grade HMOs using an advanced fermentation methodology.



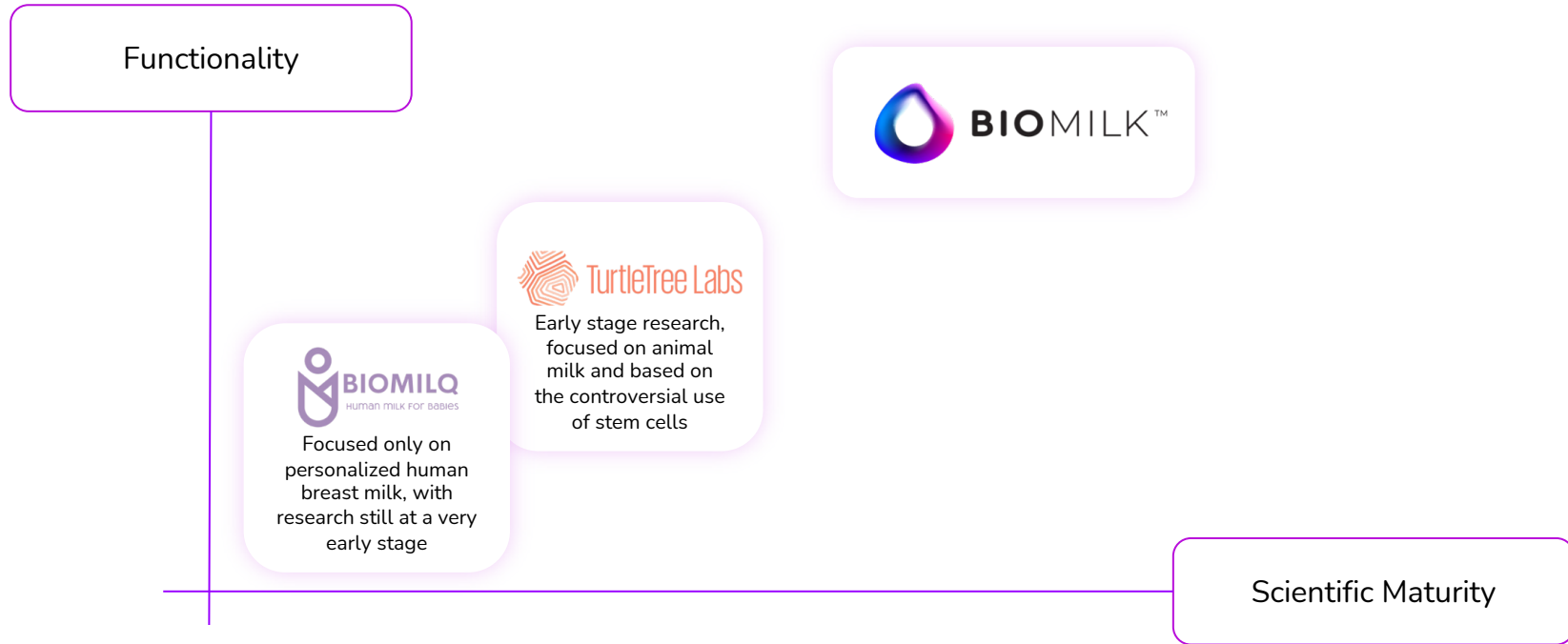
# GO TO MARKET STRATEGY



# COMPETITIVE LANDSCAPE



# CULTURED MILK LANDSCAPE



Over 10 years of research made us understand so much

# COMPANY TIMELINE



2009

Dr. Nurit Argov-Argaman opens a physiology lab at the Hebrew University of Jerusalem, after acknowledging the desperate need to develop quality food for infants to mimic breast milk complex composition and structural properties of milk solids.

2014

Development of protocols to culture bovine mammary cells, and methods to detect the secretion of milk proteins, lactose and fat from cultured mammary gland cells.

2018

Incorporation of Bio Milk Ltd.

2020

- Q2** Biomilk purchased the licensing rights for the technological transfer of intellectual property and know-how from the Hebrew University of Jerusalem to the company.
- Q3** Biomilk raised a substantial round of funding from leading private investors to fuel the technological scale-up.
- Q4** Biomilk becomes a publicly traded company in the Tel Aviv Stock Exchange.

# THE ROADMAP



2020

## Full Year

Building of scientific and business team, and capital raising of 12M NIS.

2021

## Q1

1. Production of the 3 main ingredients of cultured animal milk - protein (Casein), Sugar (Lactose) and fat.
1. Submission of research proposal for clinical experiments to the Helsinki Committee - focus on human cultured breastmilk.

## Q2

Development and isolation of various genes for the development of HMO.

## Q3

Presentation of milliliters of cultured animal milk containing all 3 ingredients (protein, sugar and fat).

## Q4

Production of human breast milk ingredients - protein, sugar and fat.

2022

## Q1

Production of HMO ingredients.

## Q2

First tasting of drinking cultured animal milk (colour, taste and texture).

## Q4

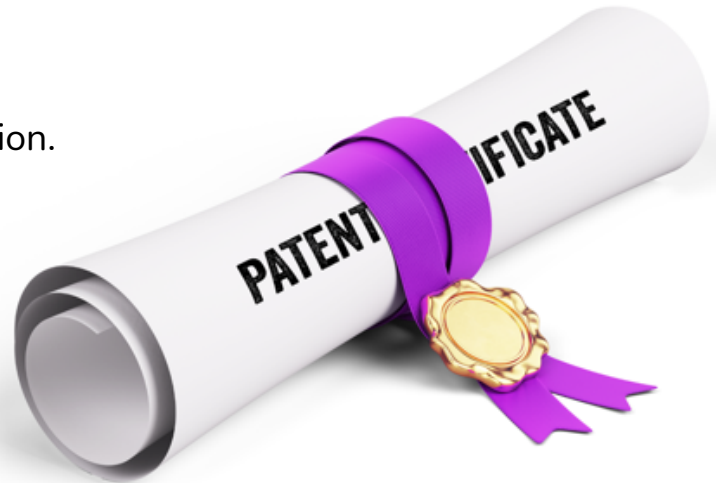
Presentation of milliliters of human breast milk containing all 3 ingredients.

2023

## Full Year

Scale up of the 3 processes - animal milk, human milk, and HMO.

- **Over a decade of dedicated research and unique know-how from the Academia.**  
Biomilk holds an exclusive license agreement from the technology transfer company of the Hebrew University of Jerusalem.
- **PCT** for methods and systems of in-vitro milk production.
- A comprehensive IP portfolio is being designed with additional patents in queue.



# LEADERSHIP



**Tomer Aizen**  
**CEO**

Tomer is an experienced executive having worked for over 15 years at multinational companies in the healthcare industry and holding several leading commercial and management positions. Prior to BioMilk, Tomer was managing Ethicon, a significant business unit at Johnson & Johnson specialized in surgical technologies and solutions. Skilled in creating value through multidimensional synergies, leading performance and teams successfully, Tomer holds an LL.B and is a licensed lawyer.



**Nathaniel Benchemhoun**  
**VP Business Development**

Nathaniel brings a familiarity with a variety of industries and technologies and rich experience in venture capital and corporate innovation. His professional background ranges from operational executive roles at tech startups and venture funds, to innovation and strategy consulting for global Fortune 500 companies. Nathaniel graduated in Finance and Entrepreneurship from the University of Melbourne and the University of Southern California, following a bachelor's degree in Economics at the University of Paris La Sorbonne.



**Dr. Nurit Argov-Argaman**  
**Chief Scientist**

Nurit is a senior lecturer at the Faculty of Agriculture, Food and Environment of the Hebrew University. Nurit's field of expertise in lactation physiology and milk quality, topics she's been researching for the last 14 years. Her academic focus is set on the metabolic regulation of milk composition, aiming to increase production efficiency of milk solids and product quality in terms of positive health effect on people. Nurit graduated in Animal Science at the Hebrew University of Jerusalem, and followed with a postdoc fellowship in the Food Science and Technology department at UC Davis.



**Dr. Maggie Levy**  
**HMO Lead**

Maggie is an Assistant Professor at the Robert H. Smith Faculty of Agriculture, Food and Environment of the Hebrew University. She is an expert in molecular biology of fungi and metabolic engineering of secondary metabolites. Her combined expertise will allow her to develop a unique metabolic engineering and fermentation technology for Human Milk Oligosaccharides (HMO) production as a potential health additive. Maggie holds a PhD and MSc in Plant Sciences and BSc in Horticulture and Plant Protection.



**FOR A BETTER FUTURE**  
**ONE DR**  **P AT A TIME...**