

**PIENAS LT**

**YOUR MILK PROTEINS PARTNER**

ŽEMĖ  
MODE  
(PARA  
  
Proje  
Lietu  
  
Projekto vy  
Žemės ūki  
Pienas LT

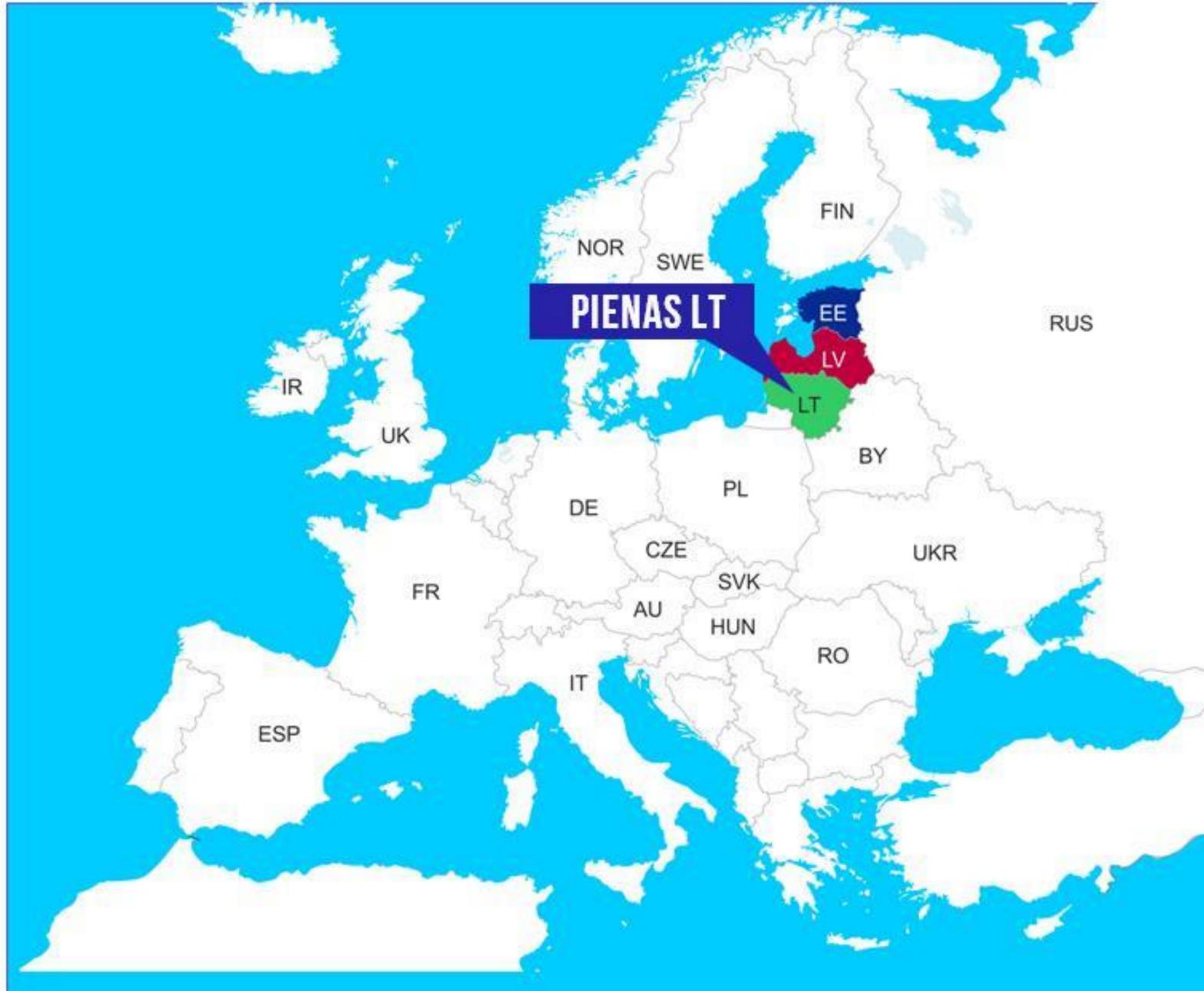
A man and a woman are smiling and standing in a grassy field. The man is wearing a dark vest over a light blue shirt, and the woman is wearing a dark vest over a white shirt. They are both wearing gloves. In the background, there are several cows, including a brown one and a white one. The scene is set in a rural, agricultural environment.

# PIENAS LT — AGRICULTURAL MILK COOPERATIVE

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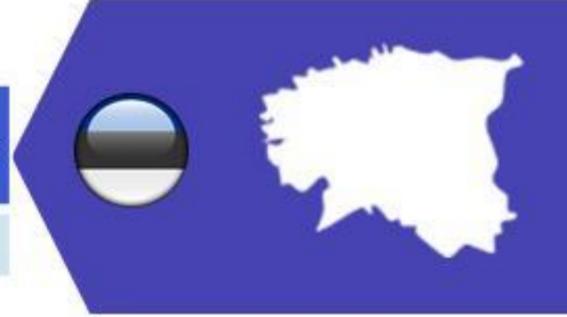
WE ARE THE BIGGEST, VERTICALLY INTEGRATED  
MILK COOPERATIVE IN THE BALTIC STATES

# Today we are biggest dairy cooperative in Baltic States



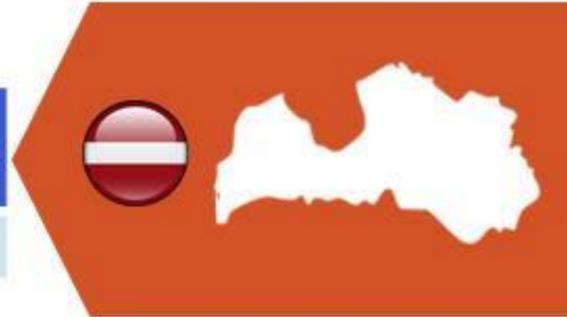
## ESTONIA

Population	No of dairy cows	Cow milk deliveries, t	Cow milk production per capital, kg
1.300.000	96.000	730.000	560



## LATVIA

Population	No of dairy cows	Cow milk deliveries, t	Cow milk production per capital, kg
2.000.000	166.000	804.000	402



## LITHUANIA

Population	No of dairy cows	Cow milk deliveries, t	Cow milk production per capital, kg
2.900.000	314.000	1.435.000	495



## PIENAS LT

Farms	No of dairy cows	Cow milk deliveries, t	Pienas LT/LT, %
215	17.000	149.650	10,43%



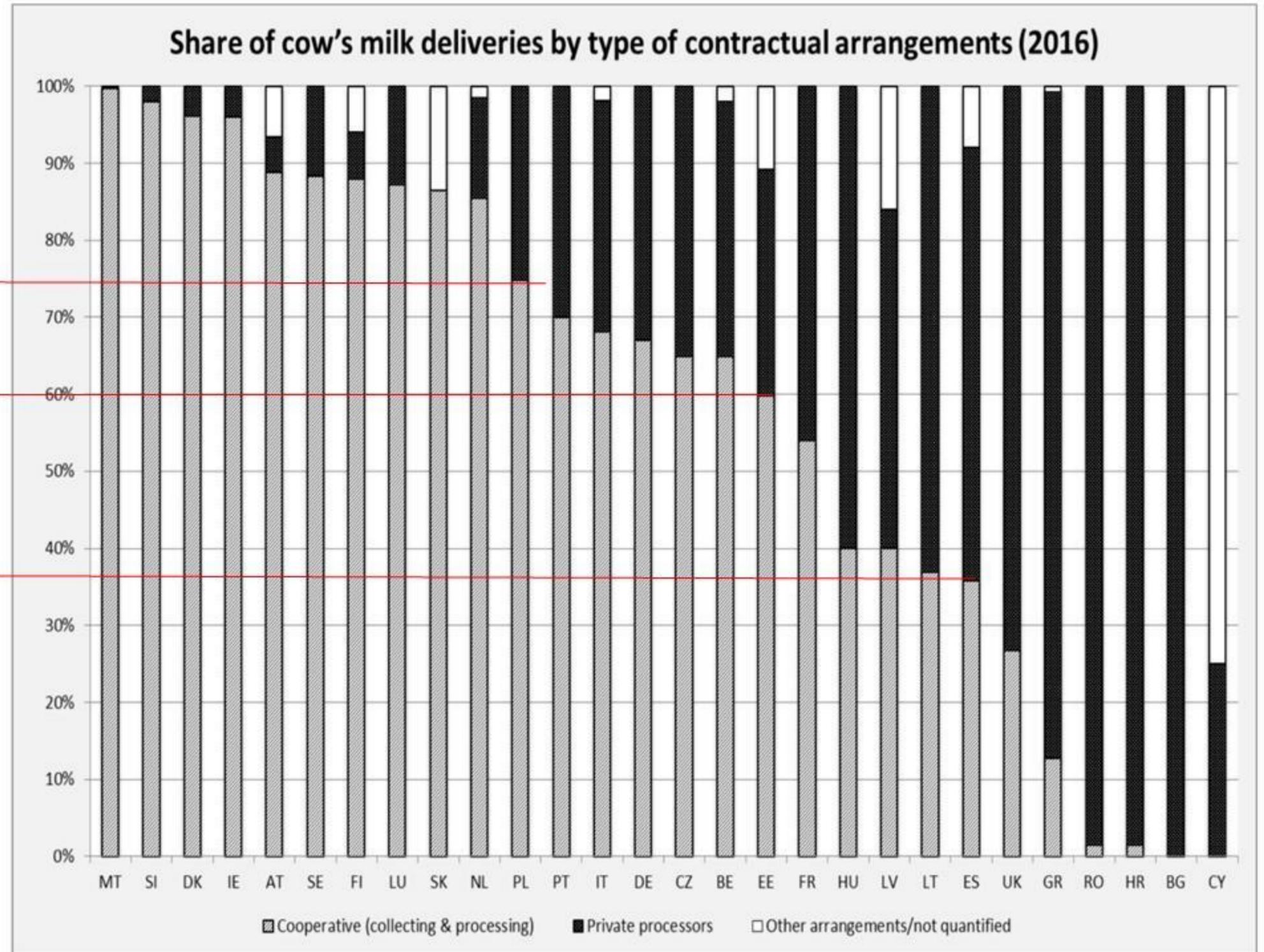
# Main reasons for it: small farms in LT&LV and no vertical integrated coops

Average farm:

- LT 11 cows
- LV 20 cows

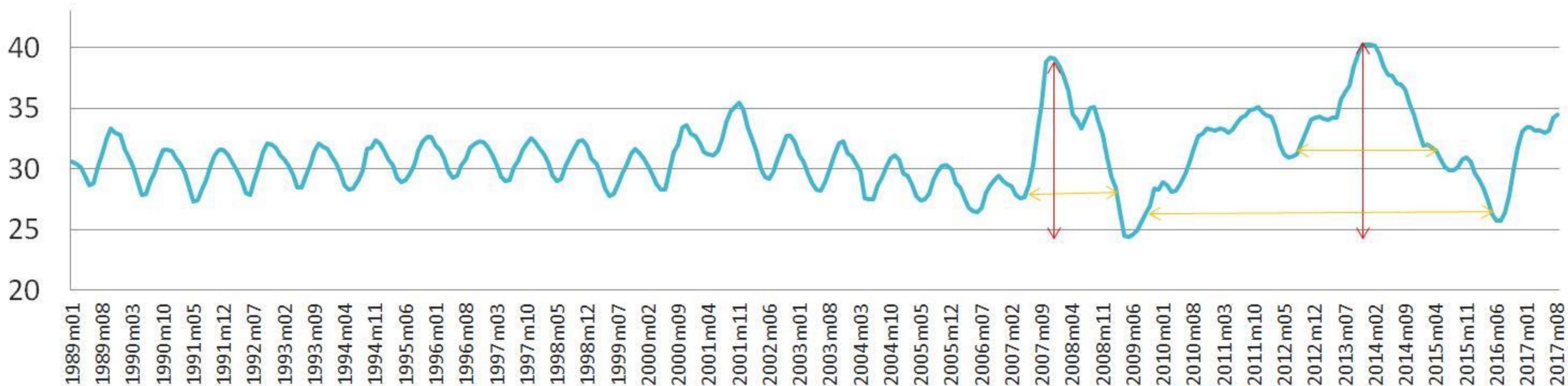
Milk procesing in the plant of milk

coops - **< 5%** (All 3 Baltic Countries)



# Milk price fluctuation

## EU milk price fluctuation 1989-2017



## Reasons why we created our cooperative?

### World economy crisis

2008

The global crisis has affected the world prices of dairy products and, thus, also the prices of raw milk

01 Economy crisis

### Oligopoly situation on the market

5 processing plants bought over 90% of raw milk, which did not allow farmers to "hope for competition"

02 Oligopoly situation

**Establishment  
in 2008**

### 40:60 Local market/ Export

40% of dairy products are used internally, 60% is export. It was necessary to look for solutions that would allow the export of milk or dairy products

04 Local market just 40%

### World practice

The world practice suggests that a vertically integrated cooperative can be a solution to the problem.

03 Best practice

# The path from the idea to the milk factory

2008

## Establishment

During the first year of operation, 160 farms of different sizes has joined the cooperative.

2008

## Personal logistics

From the very beginning, the cooperative purchased milk carriers for the collection and transport of milk.

Also it was beginning, of working on quality control of milk.

2010

## Milk export

By controlling the assemblage and quality of milk, we started exporting to other countries.

2011

## Project- „factory“

The idea of own production gets its course. We started search of possible funding.

# The path from the idea to the milk factory

2013/07

## Start of construction

The cornerstone of the new plant was laid on the pure field.

2015/06

## Technological line

The assembly of processing line for the production of milk protein concentrates begins.

2016/07

## Launching a "wet line"

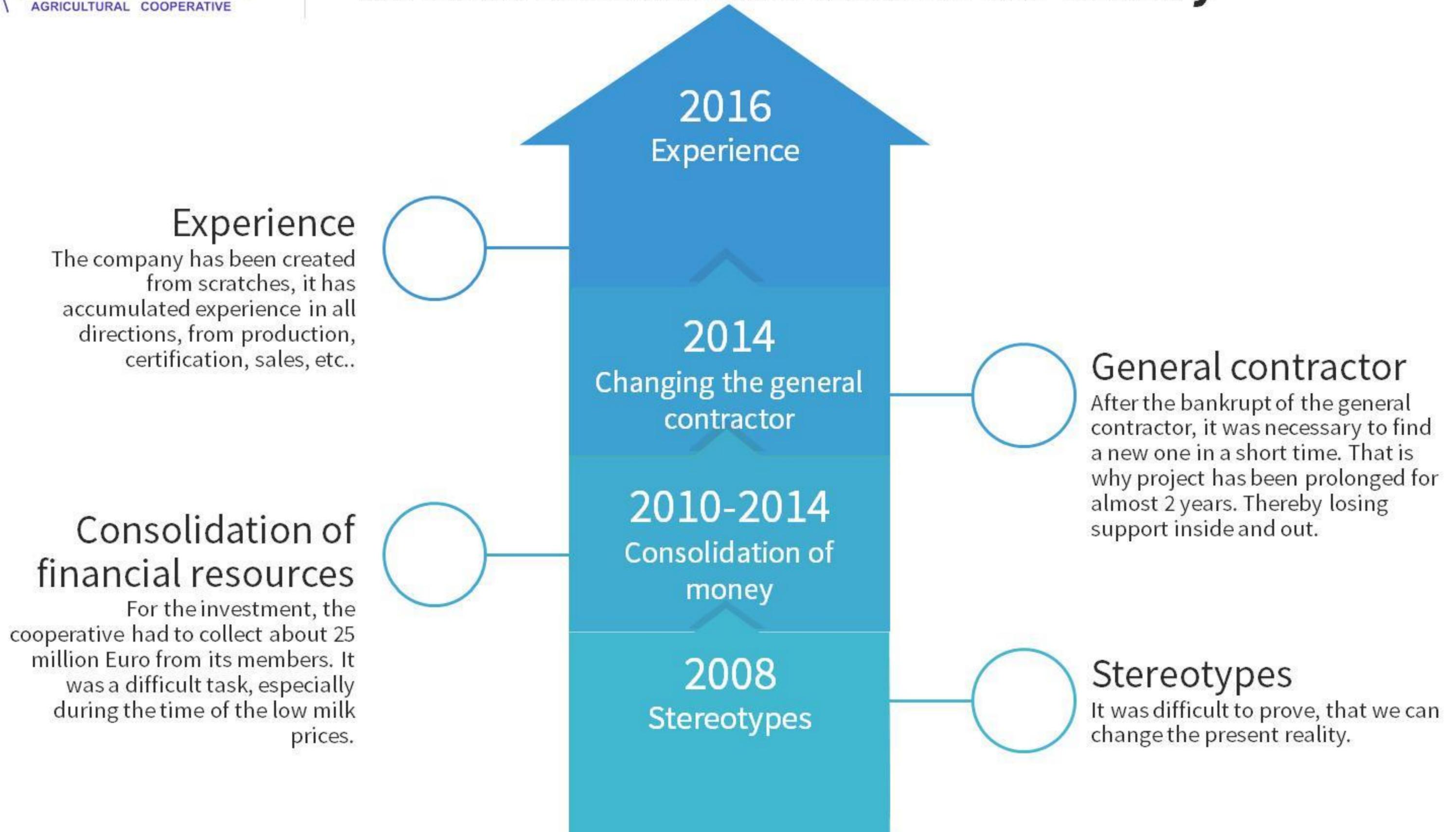
The technological line of milk processing was launched.

2017/01

## Launching drying towers

The drying towers for drying of milk proteins and milk permeate were launched.

# The most difficult moments of our history



## WHO ARE WE IN FIGURES?



**>17000 COWS**

There are more than 17000,- cows in the farms of our farmers



**>210  
DAIRY FARMS**

210 dairy farms are owners. And this number of farms is increasing



**>410 T  
OF RAW MILK A DAY**

More than 410t of raw milk per day are produced on our farms and delivered for milk proteins processing plant. It is around 10% of Lithuanian origin milk



**650 T/DAY  
PRODUCTION  
CAPACITY**

Production processing plant capacity for milk proteins is up to 650t/day



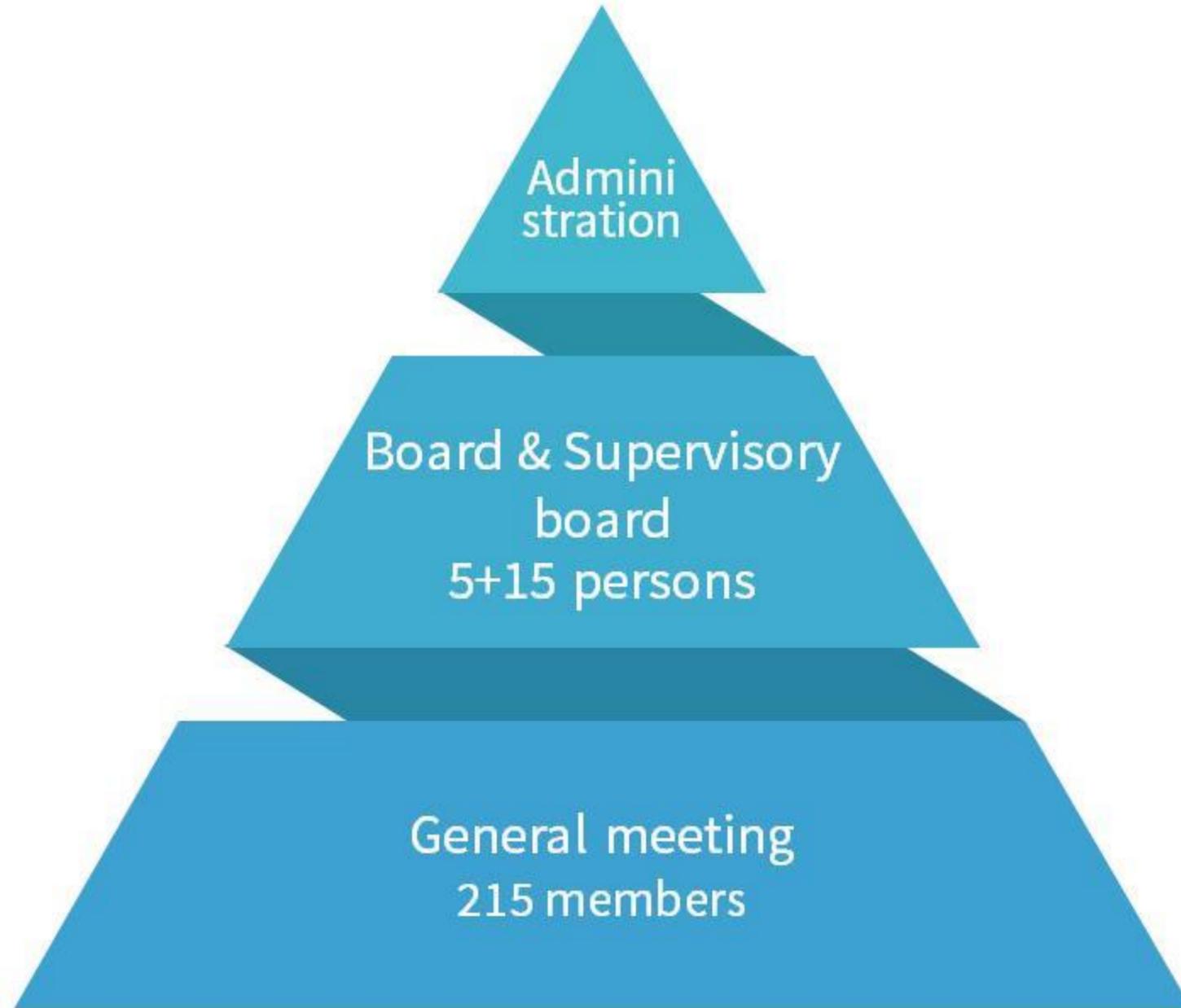
**>100 EMPLOYEES**

More than 100 employees are working in milk collection, processing and quality control

**Pienas LT** could be the  
right regional  
solution and an open  
platform for **Regional  
cooperation**



# Management and responsibility



## Administration

Managing daily activities. Responsible for fulfilling the task.

## Board

Exposes the tasks of the Administration, supervises, creates strategic plans of development, etc.

## General meeting

Decides and approves all strategic, principle issues, elects the Board, etc.

# WE ARE VERTICALLY INTEGRATED DAIRY COOPERATIVE

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## OUR WAY OF MILK

### MILK PRODUCTION

1

210 farmers produce around 410t of raw milk per day. The number of farms increased from 160 in 2008 to 210 in 2016

26 of our milk collection trucks collect milk every day 365 days/year

2

### MILK COLLECTION

## RAW MILK QUALITY TESTS

3

Each farm, on each collecting day is under quality control of on inhibitors, TPC, SCC, fat, proteins and etc.

The milk processing plant produces:

- Cream;
- MPC-85
- MSPC-80
- MicCC-85
- MPP

All proteins and milk permeate can be in powder or in liquid concentrate

4

## MILK PROCESSING

## MILK PROCESSING QUALITY CONTROL

5

During the milk processing process we use strict quality control upon request of Halal, Kosher, FSSC-22000

All products are delivered to the customer, upon placement order request and should not be kept in stock longer than 2 months



## PRODUCT DELIVERIES

## CUSTOMER ORIENTATED APPROACH



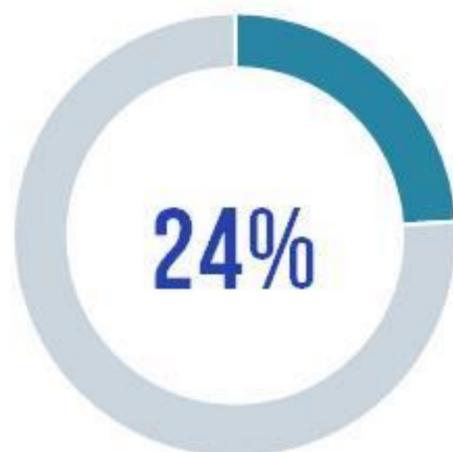
We are a small and flexible company, which is completely dedicated to our customer needs, so we can adopt our production under customer request

# PIENAS LT – MILK PROTEINS PROCESSING PLANT

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A COMPLETELY NEW STATE-OF-THE-ART MILK  
PROCESSING PLANT IN LITHUANIA

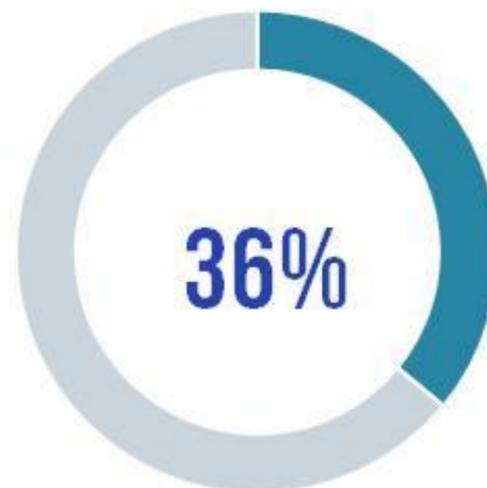
**TOTAL COST OF THE PROJECT WAS 39.431.502 EUR**



**BUILDINGS AND  
INFRASTRUCTURE**



**TECHNOLOGICAL  
LINE OF THE „WET  
PART“**



**3 DRYING  
TOWERS**



**EU FUNDS**

# DAIRY PLANT IN DETAILS

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## SEPARATION

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Separation of up to 41,5 t of raw milk per h.  
Preparation of up to 4,4t of fresh pasteurized cream per h

## MICROFILTRATION 1

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Microfiltration of skim milk in case to take off TPC, SCC and control microbiology

## ULTRAFILTRATION 1&2

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Using ultrafiltration 1 to divide milk into proteins and milk permeate

## MICROFILTRATION 2

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Using microfiltration 2 to divide milk proteins into casein and native whey proteins

## NANO FILTRATION

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Using nano filtration to reduce amount of salts in milk permeate

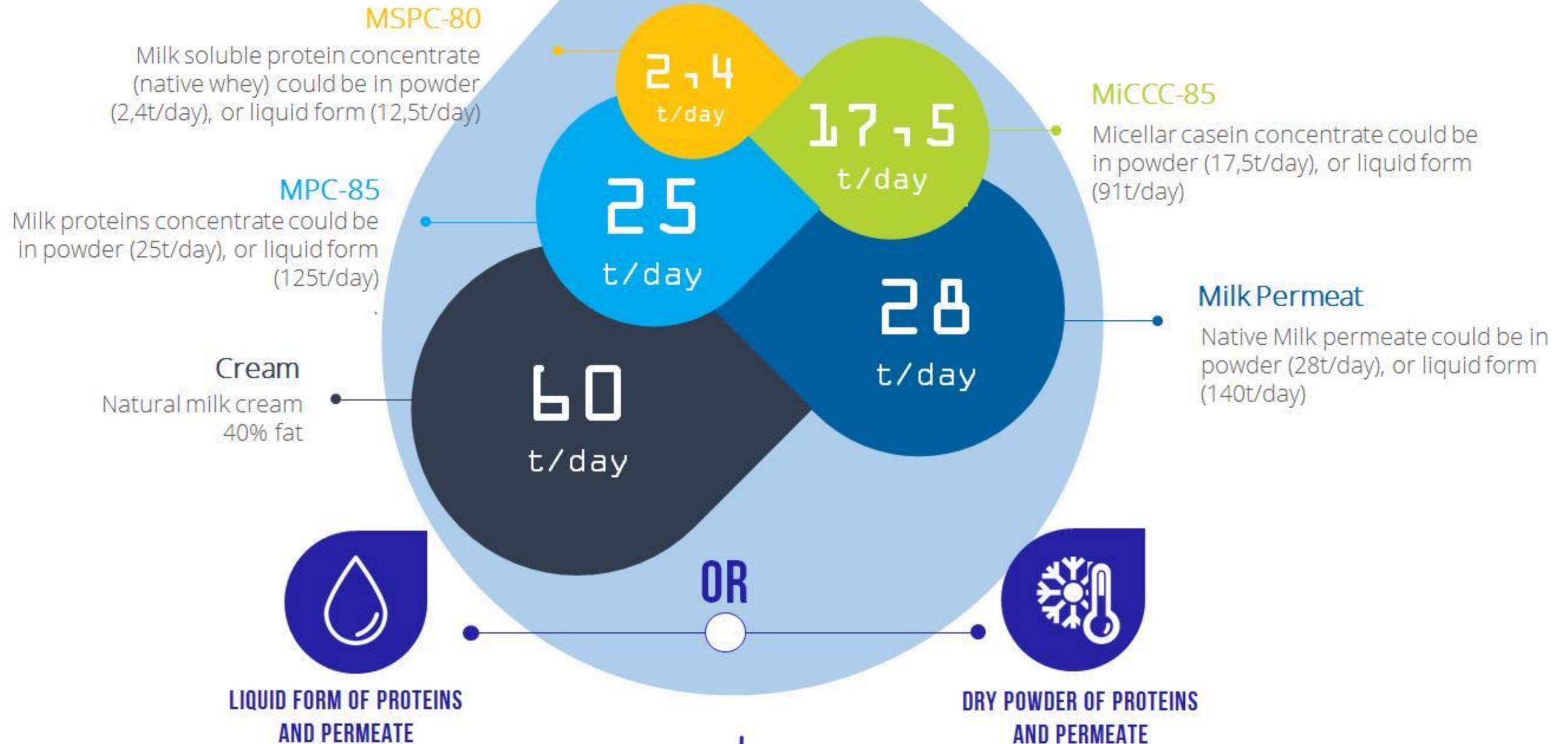
## 3 DRYING TOWERS

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Using 2 dedicated spray drying towers for proteins drying and 1 disc drying tower for milk permeate drying. The total capacity of drying towers is up to 3000 kg/h of powder. With our drying towers we can reach different features of our products

# PRODUCTION CAPACITY PER PRODUCT

## OPTIONS FOR PRODUCTION OF PRODUCTS IN POWDER OR IN LIQUID FORM



# DAIRY PLANT

At the moment it is a completely new dairy plant, which is 100% focused on the production of milk proteins concentrates via micro, ultra and nano filtration process from raw milk collected on the farms of the fixed in the radius of 300km around it.



It is the only vertically integrated dairy plant of such type in Lithuania and the Baltic states and hundreds of km around

# PIENAS LT – MILK PROTEINS PRODUCTS

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HIGH CONCENTRATION HIGH QUALITY MILK  
PROTEINS PRODUCTS

# DRY PRODUCTS LIST

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## **MPC-85**

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### **MILK PROTEIN CONCENTRATE**

Milk protein concentrate MPC85 is powder of total milk protein processed by ultrafiltration and spray drying process. Moisture (not more than)-6%. Protein in dry matter- 85%.

## **MSPC-80**

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### **MILK SOLUBLE PROTEIN CONCENTRATE**

Milk soluble protein concentrate MSPC80 is powder of total milk protein of which the casein fraction has been formerly removed by microfiltration, processed by ultrafiltration and spray drying process. Moisture (not more than)-5%. Milk soluble protein in dry matter- 80%.

## **MicCC-85**

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### **MICELLAR PROTEIN CONCENTRATE**

Micellar protein concentrate MicCC85 is powder of total milk protein processed by ultrafiltration and spray drying process. Moisture (not more than)-6%. Protein in dry matter- 85%. Ratio „casein/soluble proteins“, minimum-92/8

## **MPP**

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### **MILK PERMEATE POWDER**

Milk permeate powder is a partly demineralized powder of fresh pasteurized skimmed milk processed by ultrafiltration and spray drying process. Moisture (not more than)-4%.

# PRODUCT APPLICATION



## SPORT FOOD POWER

Enhanced endurance performance, greater muscle protein synthesis, faster muscle recovery



## FUNCTIONAL FOOD HEALTH

Age related muscle loss, weight management, cognitive performance



## DAIRY PRODUCTS FEATURES

Cheese, yogurts features. Proteins enrichment for dairy products



## BAKERY EFFECTIVENESS

Texture  
Air incorporation  
Moistness  
Freshness  
Egg reduction  
Protein enrichment  
Gluten free options  
Calcium enrichment

# PIENAS LT FUTURE

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SMART-INCLUSIVE-  
SUSTAINABLE-GROWTH



# PIENAS LT – LONG TERM DEVELOPMENT STRATEGY

The first stage of the development project will be completely finished at the end of 2016 with completely integrated plant for the production of concentrated milk proteins MPC, MiCCC, MSPC as well as cream and milk permeate as a site product.



We see our future as a Smart-Inclusive-Sustainable-Growth company. So have already started the preparation of a long-term development strategy, which would be based on research and development of high-value-added products and solutions. The development strategy would be for the period of 2017-2020.

# PIENAS LT – LONG TERM DEVELOPMENT STRATEGY

## PRIORITIES OF SECOND STEP DEVELOPMENT

### SMART

We would like to focus our and EU investments on the development of products which could help to create value-added >40 EUR/t milk. We do not want to enter into competition with standard milk products

>40  
EUR/t

>20  
%

### INCLUSIVE

We would like to cooperate and vertically integrate >20% of Lithuanian milk, or >10% of milk from the Baltic states

### SUSTAINABLE

We would like to focus on products with growing demand in the world and base possible sales on the diversification of different markets from the EU to the USA or Japan

>40  
EUR/t

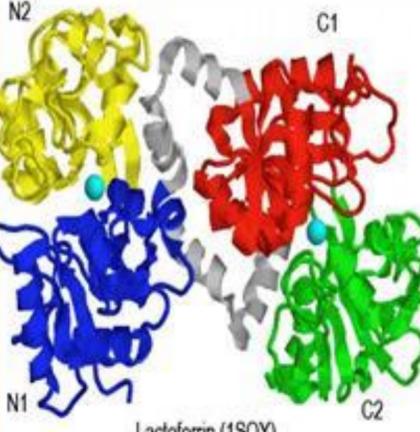
>15  
%

### GROWTH

That would allow us to increase raw milk processing by 15% for the next 10 years or more than 25% per next 5 years at vertically integrated cooperation company

# PIENAS LT – LONG TERM DEVELOPMENT STRATEGY

## POSSIBLE WAYS

 <p><b>PEOPLE</b></p> <p><b>PROFIT</b></p> <p><b>PLANET</b></p> <p><b>SUSTAINABILITY</b></p>	<p><b>Adjustments:</b></p> <ul style="list-style-type: none"> <li>- Powders for special applications</li> <li>- Mixes</li> <li>- Organic proteins</li> <li>- A2 casein</li> <li>- Isolates</li> </ul>	 <p>Lactoferrin (1SQY)</p>	<p><b>Double capacity:</b></p> <ul style="list-style-type: none"> <li>- To double processing capacities 2x</li> </ul>	
<p><b>Closing the cycle:</b></p> <ul style="list-style-type: none"> <li>- Cream processing</li> <li>- Lactose</li> <li>- Bio energy</li> <li>- CIP waste</li> </ul>		<p><b>Milk proteins derivatives:</b></p> <ul style="list-style-type: none"> <li>- Lactoferrin</li> <li>- Lactoglobulines</li> <li>- Lactopharrin</li> <li>- Peptides</li> <li>- Caseinates/phosphopeptides</li> </ul>		<p><b>Functional food:</b></p> <ul style="list-style-type: none"> <li>- Infant formula</li> <li>- Sport nutrition</li> <li>- Health nutrition</li> <li>- Diet related nutrition</li> <li>- Clinical nutrition</li> </ul>

# PIENAS LT – LONG TERM DEVELOPMENT STRATEGY

OUR EXPECTATIONS FOR EU AND NATIONAL SUPPORT

**WE ARE READY TO INVEST, BUT AT THE SAME TIME WE EXPECT EU AND NATIONAL SUPPORT, BECAUSE IT WOULD BE:**

## LONG TERM SOLUTION

It would be not a single day, or a single crisis issue, it is a long-term solution

## HIGHER ADDED VALUE

High-value-added products for farms, state and EU

## REGIONAL SOLUTION

It could be a vertically integrated cooperative with 20% of Lithuanian milk or 10% of the Baltic states milk

## GROWING MARKET

We are talking about products for markets worldwide, which still are at the growing stage

## SOCIAL DEVELOPMENT

It would be catalyst for the development of cooperation in the Baltic states as well as creation of working places for specialists

## CONVERGENCE

It would be an option to make convergence at the EU level faster

# PIENAS LT – OPEN MIND FOR ANY GOOD IDEA

WE INVITE YOU TO DISCUSS ANY GOOD IDEA BECAUSE



**WE ARE A REGIONAL PROJECT**

We would like to make implementation throughout the entire Baltic region



**WE ARE OPEN FOR EVERY MILK PRODUCER**

We are open for every milk producer to join us



**A NEW INVESTMENT UP TO EUR 40 MLN**

The Second step investment program would be EUR 30-40 mln



**INVESTMENT PERIOD 2017-2020**

We expect support from EU spec program



**EU SPEC PROJECT**

We expect support from the EU spec program

# PIENAS LT – OPEN MIND

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WE ARE OPEN-MINDED ABOUT NEW IDEAS,  
COMENTS AND POSSIBILITIES

## CONTACT US!

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