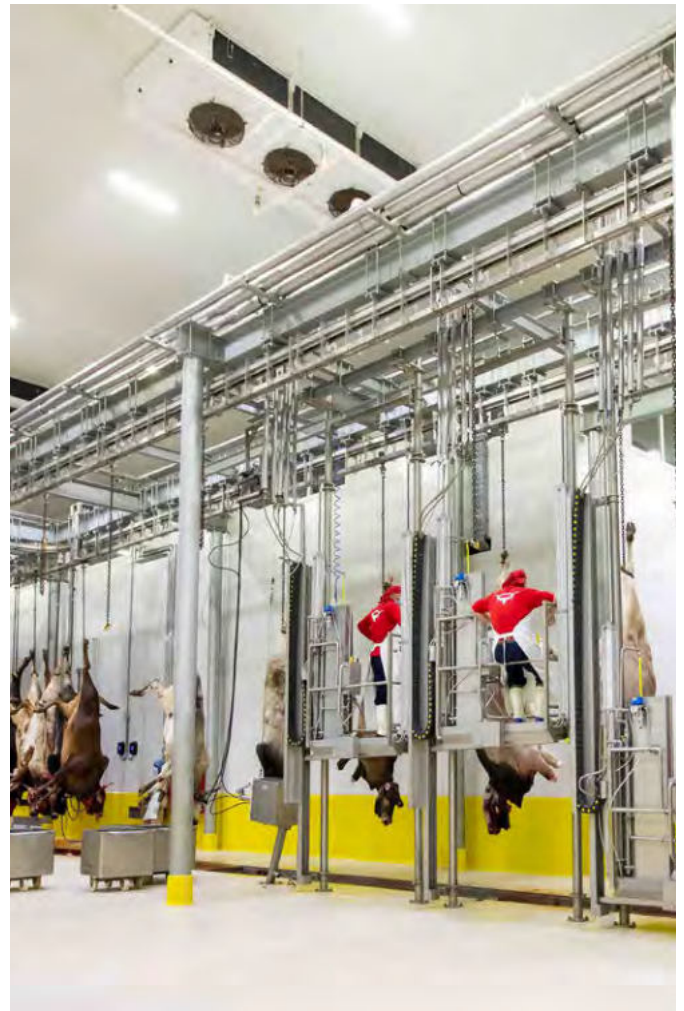




# Meat Technologies

The art of meat technologies



GANTEK

# About Cantek Group

Cantek is a food storage and processing expert. For over 30+ years, Cantek has successfully completed more than 15.000+ projects in 75+ countries. Cantek produces high technology equipment and realizes turnkey cold storage, slaughterhouse / meat processing and plant factory projects worldwide.

With a closed production area of 40.000 m<sup>2</sup>, Cantek offers complete solutions from one hand including project development, production of all equipment, facility installation, service, warranty, remote controlling and managing systems. In addition, Cantek provides exceptional energy saving.

## OUR ACTIVITIES & SOLUTIONS



### **Meat Technologies**

Red Meat Slaughterhouse and Processing Facilities

Poultry Slaughterhouse and Processing Facilities

Fish Processing Facilities



### **Turnkey Projects**

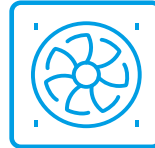
Slaughterhouse and Meat Processing Facilities

Cold Storage Facilities

Food Storage Warehouses

Food Centers

Mobile Solutions



### **Cooling Technologies**

Cooling Equipments

Different Types of Cold Storage

Special Cooling Applications

Snow Park and Ice Rink



### **Plant Factory**

Controlled Environment Indoor Vertical Farming

Design, Manufacturing, Insulation Consultancy

Continuous Harvest 365 Days all over the World

# PROCESSING TECHNOLOGIES

## Meat | Poultry | Fish

Meat Slaughterhouse & Processing

Poultry Slaughterhouse & Processing

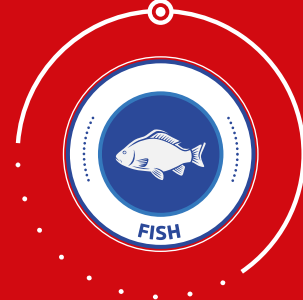
Fish Processing

Mobile Solutions

Meat & Poultry Farming & Quarantine

Project Consultancy

Turnkey Solutions





**ADD VALUE TO MEAT**



# Project Study Approaches

**Cantek offers their customers different project opportunities:**

Basic Process Project Solutions  
*From concept to delivery.*

Complete Project Solutions  
*From concept to handover with a turnkey or specific scope project.*

Consultancy Services  
*Preliminary detail engineering with a turnkey or specific scope project.*



## Basic Process Project Solutions

Planning, manufacturing and installing machines at specific steps of each project.

Slaughtering and further processing.

Cooling technologies, cold room panels and doors.

## Complete Project Solutions (Turnkey or Specific Scope Project)

Planning, manufacturing, contracting and installing tailored projects.

Complete project solutions including architectural project's structural, civil, electrical and mechanical works; manufacturing and installing slaughtering process equipment; cold storages; insulation panels and doors.

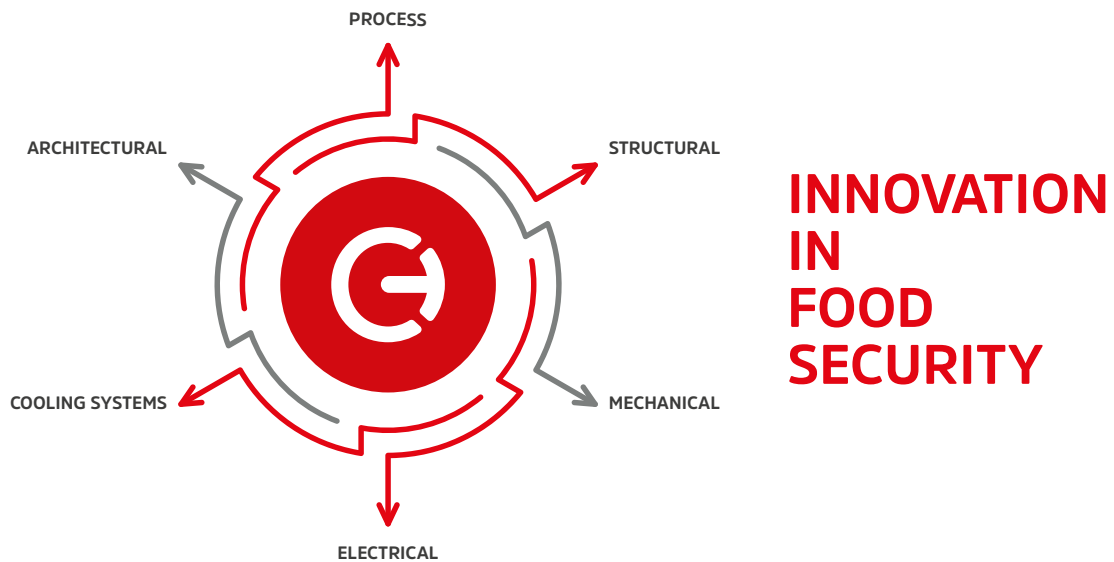
The scope and steps of each project is determined in cooperation with the customer.



## Consultancy Services (Turnkey or Specific Scope Project)

Cantek provides consultancy services for preliminary designs of turnkey and tailor-made projects. The consultancy services include (but are not limited to) the slaughtering process; cooling; insulation panels & doors; architectural project's structural, civil, electrical, and mechanical works. The scope of each project is determined in cooperation with our customers.

Cantek collects all the data and evaluate it in line with the experience and with the purpose to create sustainable and suitable projects for their customers.







## Project Study Approaches

- *Basic Process Project*  
→ *Complete Project (as a turnkey or tailor-made project)*

### Conceptual Studies

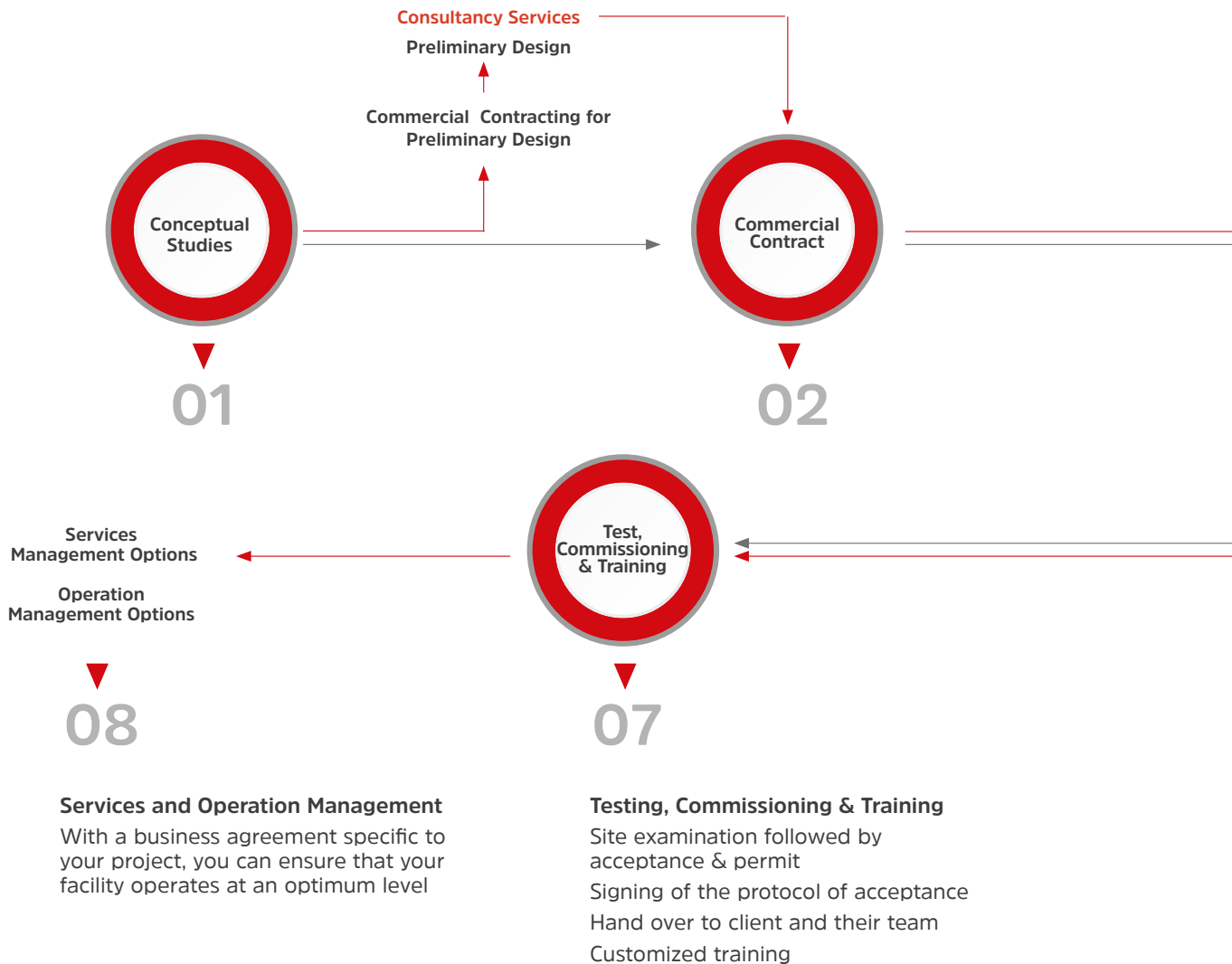
No detailed engineering, 2D sample layout, budgeting cost

### Consultancy Services

Agreement for preliminary design studies  
Detailed project engineering services for turnkey and tailor-made projects

### Commercial Contract

Product supply agreement  
2D layouts & quotation according to the clients request  
Technical data sheets  
Limit of supply & responsibilities  
Terms of delivery & payment  
Project work schedule & planning



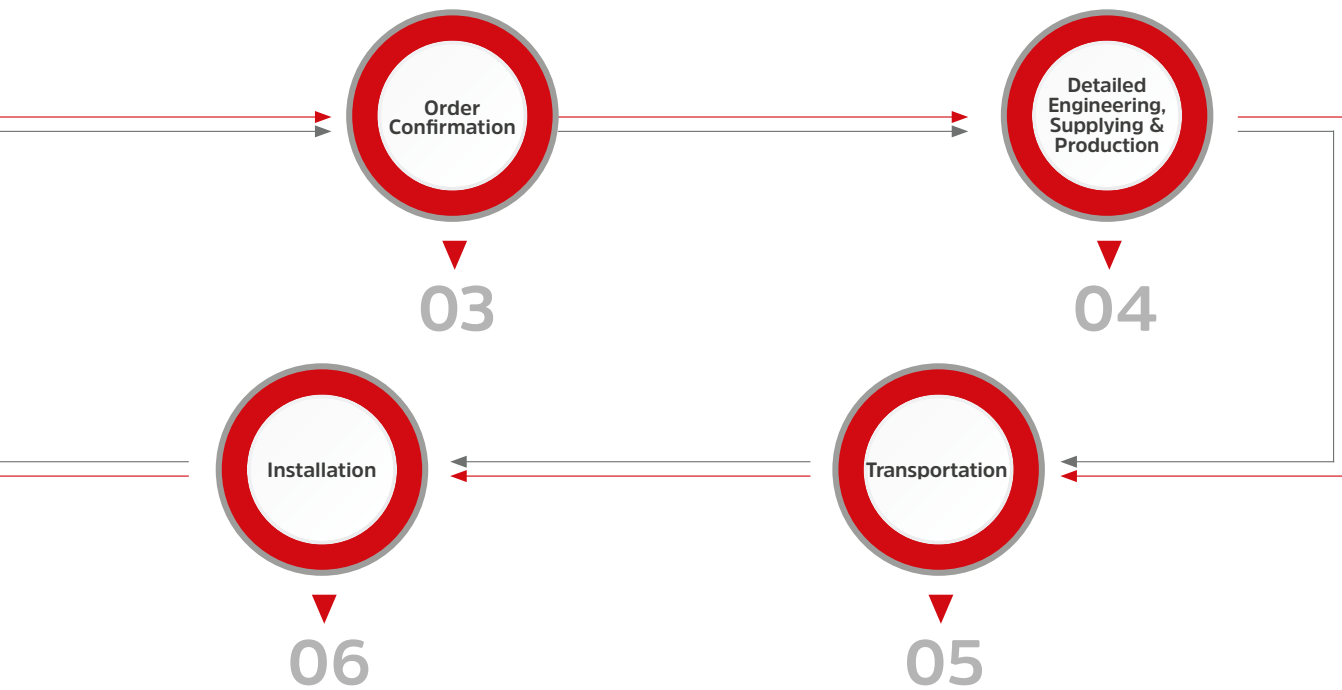


### Order Confirmation

Client signs order confirmation  
Initial down payment by client  
Confirmation of production according to contract terms

### Detailed Engineering, Supplying & Production

Project drawings (plans & sections) related to agreed and confirmed details  
Machines & equipment production & supply



### Installation

According to the scope of the contract, supervisor or full installation team



## Meat Processing Facilities

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Today, there are around 1.3 billion cattle, 1.2 billion sheep and 1 billion goats around the world.

Although the global demand for meat is varying on different rates in different regions, there is a steady increase. Thus the most important parts of the meat industry are slaughterhouses and meat processing plants.

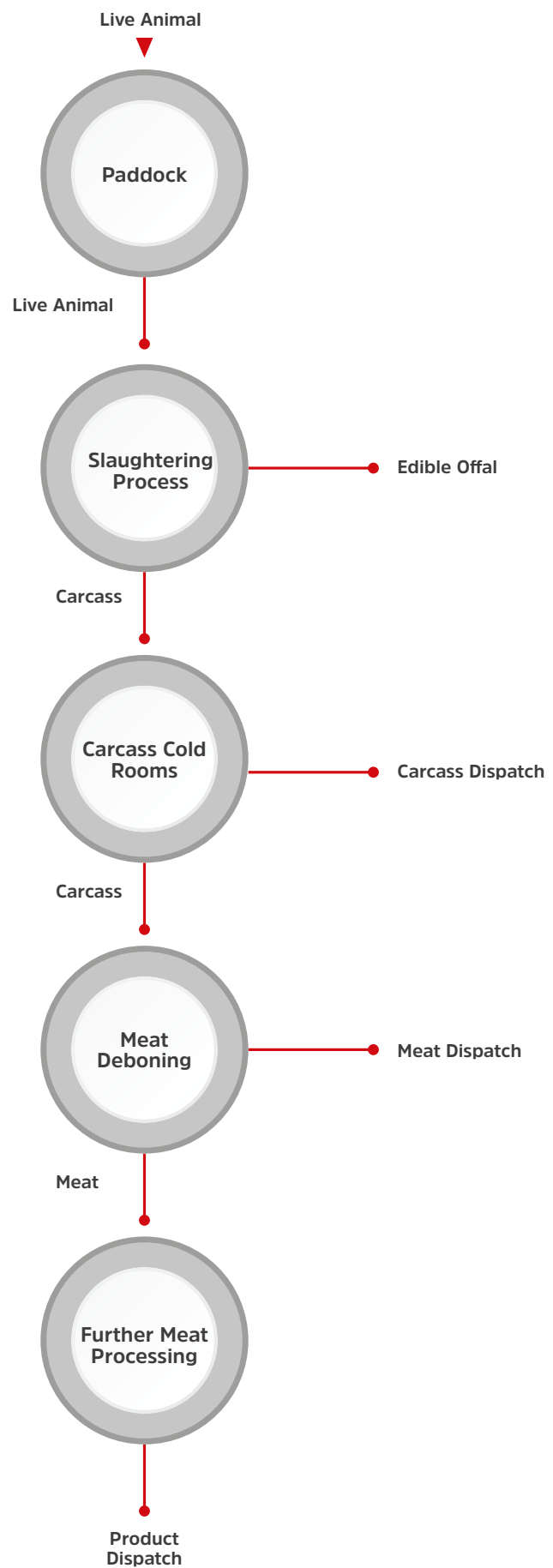
Cantek, having established major R&D activities and educational publications in the meat industry, offers services on all the stages of meat production from paddock to reaching consumers.

Cantek produces slaughterhouse equipment and advanced meat processing systems, along with turnkey installations of slaughterhouse and meat processing plants.





## Steps of Meat Processing





## Paddock



Live animals are kept in paddocks before slaughtering.  
All necessary conditions are fulfilled in accordance with the principles of animal welfare.

## Slaughterhouse



### Bleeding

Animals are kept under control in the slaughtering box and their movement is prevented. Their stress levels are controlled for their own welfare and also to obtain high-quality meat. Different types of slaughtering boxes can be used to comply with the animal welfare and Halal standards. Conveyors help controlling the animal and speeding up the slaughtering process. After slaughtering, the animals are hung on the overhead conveyor to finish the bleeding process.







### Dehiding

The hind legs are cut while the cattle are transferred from the bleeding line to the processing line. Then, the skin is removed from the animal.



### Evisceration

Following the dehiding process, white and red offal are removed.

Afterwards, the carcass is split and forwarded to the veterinary control point.

After weighing and washing, the carcass is transferred to the cooling area.

## Carcass Coldrooms



Optimum storage environment for short and long term storage and minimum weight loss is ensured during the cooling process.  
Energy-efficient and environmentally-friendly cooling system design.  
Equipped with high-quality sandwich panels and suitable lighting condition.

## Offal Processing



Offal contributes to the profitability of the meat processing industry.  
Cantek uses the newest technology for offal cleaning which increases the value of the edible byproducts.  
Suitable storage options are available to meet customer demands.



## Meat Deboning & Packaging



Following the cooling process, carcasses are transferred to the deboning area to be cut into small pieces. Butchers perform the deboning according to the customer's demands.

Primal cuts will be classified and transferred to the packaging area.

High-technology packaging methods are provided to lengthen the shelf life of the meat.

## Further Processing



Further processing lines are designed to produce different end products (meatballs, salami, sausages, ham etc.)

They are equipped with special processing machines and conditioning rooms (ovens, cooling units etc.)











## Poultry Processing Facilities

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The global population is growing rapidly since the 1950s and has exceeded 7.9 billion as of 2021.

The biggest problem that comes along with such exponential growth is food security and nutrition issues.

Chicken plays a significant role in the solution of these problems. Annual worldwide chicken production has reached 110 million tons nowadays. Chicken can be considered the most available type of meat.

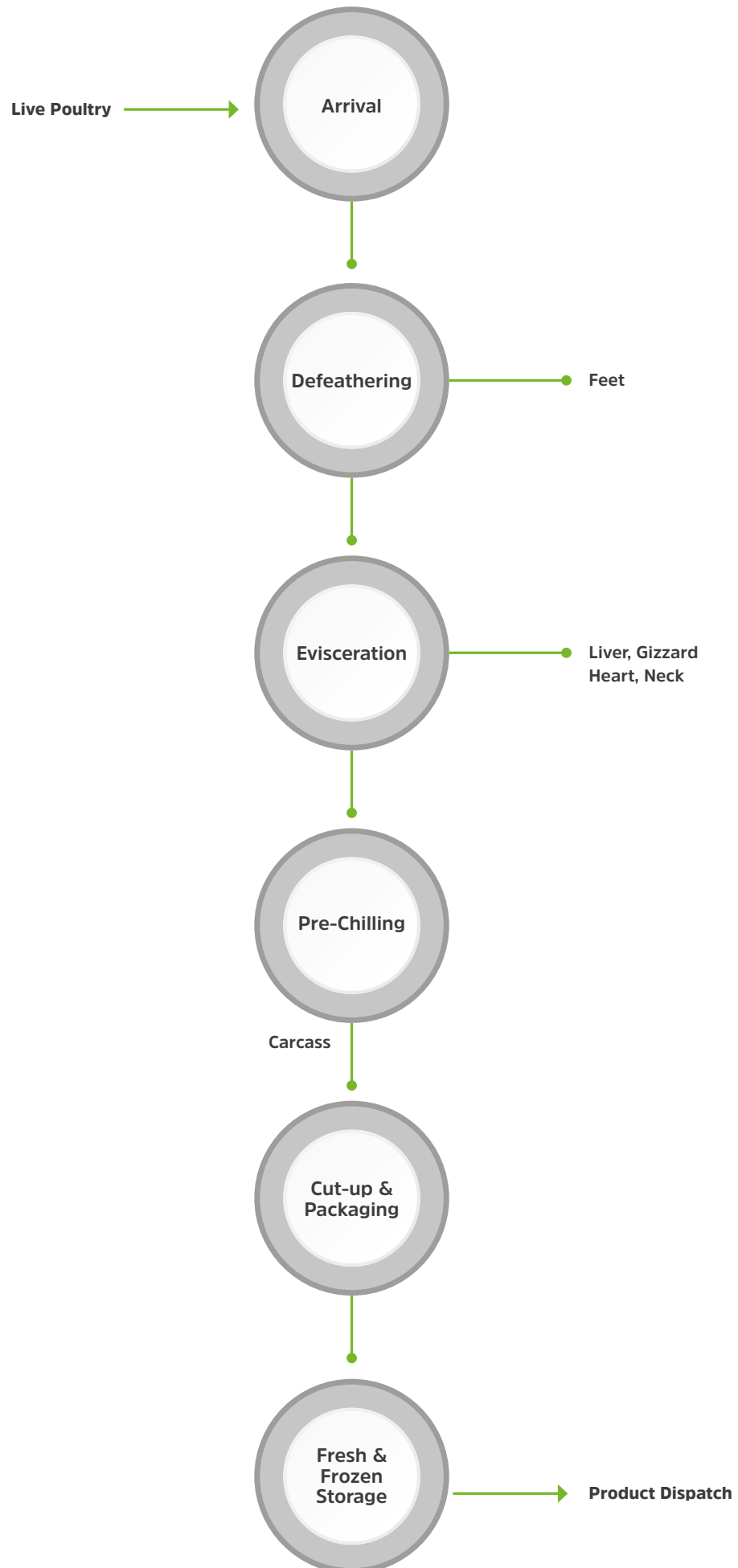
High demand for animal protein and therefore steady production growth brought about developments in industrial slaughtering and packaging facilities.

Cantek offers turnkey projects that prioritise technological, fast, efficient and automated systems in order to meet the needs in the right time.





## Poultry Processing Diagram





## Arrival Area



This is the starting point of poultry meat processing. Birds that reach a suitable slaughtering age are collected from coops and transported in crates to the slaughterhouse.

Upon arrival, they are taken from crates to the hanging area through live poultry receiving systems, where they are hung from their feet.

Finally, the emptied crates are cleaned, collected and returned to the coops.

This area is designed to relieve the animal's stress.

## Defeathering Area



Slaughtering is the stage where poultry processing initiates.

Here, the most important step is to handle the animals in an ethical way and take their psychology into account.

The process starts with hanging live poultry into shackles and followed by halal slaughtering, bleeding, scalding and plucking.

After slaughtering, they are transferred to the evisceration area.



## Evisceration Area



Evisceration is a process where the poultry carcass is opened to remove its viscera (internal organs). It is crucial to perform this process properly in order to maintain product quality.

Edible organs, such as gizzard, liver and heart are extracted, while inedible organs are taken to storage and processing area. In order to ensure long shelf life, carcass coming out of the evisceration area is quickly transferred to pre-chill area.

Depending on market demand, the neck can either be left on carcass, or sourced separately.

## Pre-Chilling Area



After evisceration, carcasses are transferred to the pre-chill area.

Air chilling uses controlled cool airflows. This system has become a preferred cooling method as it is very hygienic and does not generate waste water. Carcasses are chilled while passing through cold tunnels.

The lines can be designed longer to drop the temperatures of meat to below 4°C.

## Cut-up & Packing Area



The chilled carcasses can be cut-up into parts or packed as a whole according to the customer's request.

Cut-up parts and edible offal are usually packed in plates. The whole carcass can also be bagged.

## Cold Storage & Dispatch



Packaged poultry products can be stored both fresh or frozen according to customer demand.









## Fish Processing Facilities

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In 1970, the total global fish production was 60 million tonnes, 57 million tonnes of which were from capture fisheries and 3 million from aquaculture. The current total fish production is 170 million tonnes, 95 million tonnes of which are from capture fisheries and 75 million tonnes from aquaculture.

The global fish consumption per person is over 20 kilos thanks to the dynamic growth in aquaculture all around the world.

Therefore, storing and processing fish, which is a significant source of food and income for hundred millions of people around the world, is increasingly gaining importance. Cantek establishes turnkey facilities where all kinds of seafood from marine and freshwater wild capture fisheries or fish farms are processed.



## Fish Processing



With extensive experience in the fishery industry and a team of specialists, Cantek has established several facilities in different countries for processing the following types of seafood:

- Farmed fishes such as seabass, seabream, trout
- Marine capture fishes such as mackerel, sardine, tuna
- Fresh water capture fishes such as carp, trout, catfish
- Crustaceans and molluscs such as prawn, calamari, octopus, mussel, oyster





Cantek offers modern, technological, eco-friendly and efficient solutions to process and store seafood products properly.

Through tailor-made projects, Cantek designs fish processing facilities with features that suit each user individually. We provide single-handed services including project design, production, installation, servicing and remote monitoring. Besides, our unique cooling technology enables exceptional energy saving - which allows operations to run in the most efficient way.

Cantek has a wide range of products and services for canned, smoked or frozen seafood processing, fish drying, long-term storage, fishmeal and fish feed production. Cantek provides consultancy service, develops projects and undertakes facility installation all around the world.

# Mobile Solutions

## Mobile Solutions

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Mobile slaughtering units are great solutions for the farmers having difficulties finding modern slaughtering facilities near the farms. These systems provide opportunity for farmers to sell their livestock without additional transfer and slaughtering costs. Mobile systems enable to process sheep, cattle and poultry from start to finish and store in mobile chill rooms to keep the meat fresh.

Generally 40" HC shipping containers are used for easy shipment and installation. These systems have simple connection to on-site water and power. Differently mobile cattle slaughtering units are made from PU sandwich panels with steel supporting structure and it can be shipped dismantled or assembled.

Cantek offers innovative mobile solutions which facilitate the installation period of a slaughterhouse. It is possible to have modern and hygienic facilities in the desired area; with a low investment cost.

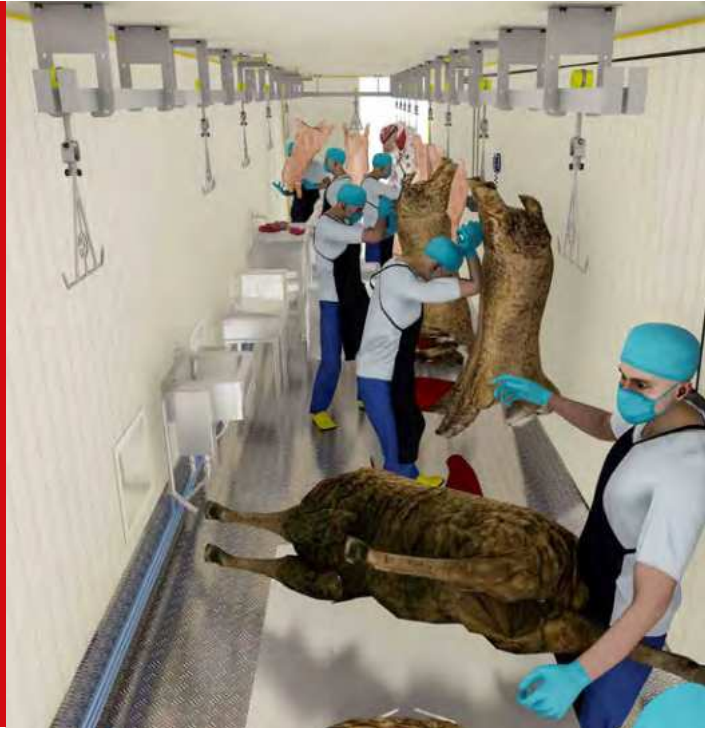






# Mobile Sheep & Goat Slaughtering Unit

Modern and hygienic, specially designed for slaughtering and shredding ovine and caprine animals such as lambs, kids and goats. Can be easily transported as the external structure is a standard 40" container.



- Complete containerized system with slaughtering equipment, dual rail and support materials
- 40" HC container
- Slaughter capacity: 8-10 sheep & goats/hour
- PU sandwich panel wall cladding
- Ready to use with complete electrical, lighting and mechanical installations
- Special design and equipment configuration according to user request
- No infrastructure required
- Fast shipping, easy commissioning



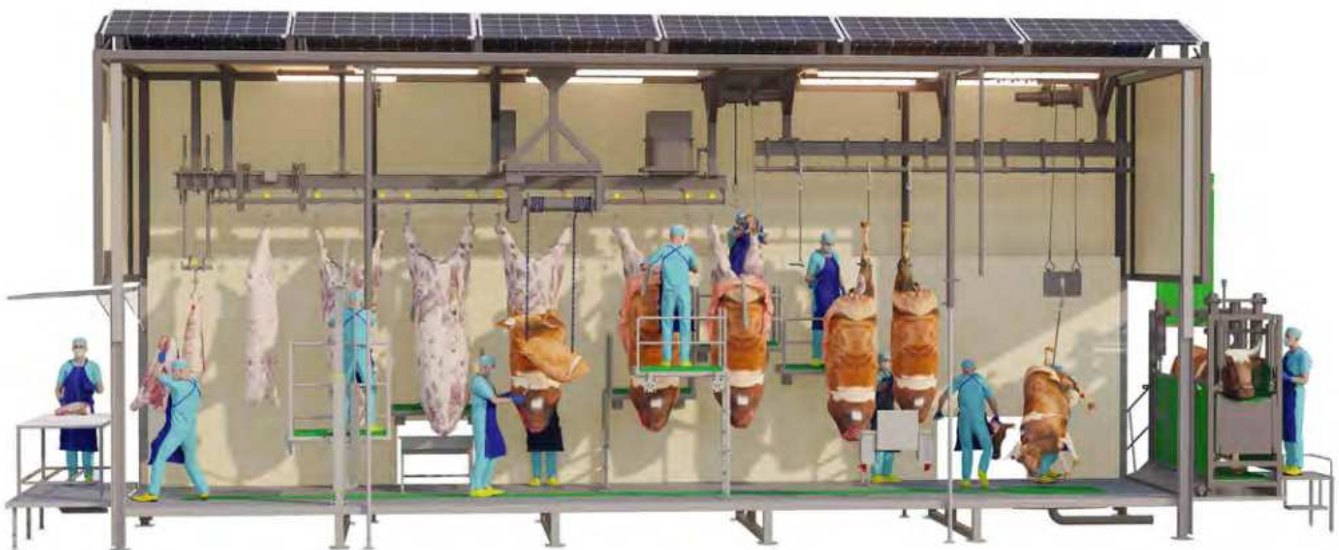


# Mobile Cattle Slaughtering Unit

Modern and hygienic, specially designed for slaughtering cattle such as calves, oxen and camels. Can be easily transported, assembled or dismantled.



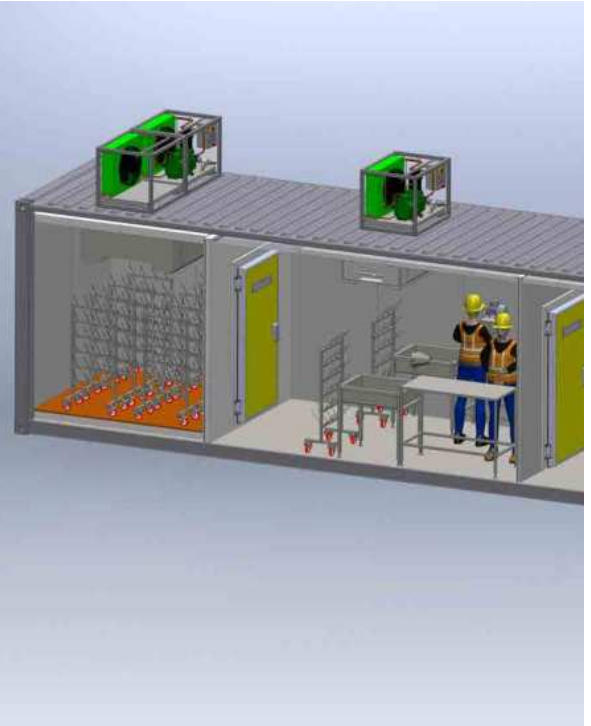
- Double-deck, hot-dip galvanized steel structure slaughtering equipment, dual rails and support materials.
- Slaughter capacity: 12 cattle/hour
- PU sandwich panel wall cladding
- Ready to use with complete electrical, lighting and mechanical installations
- Hygiene equipment included (sinks, knife sterilizers)
- Double-deck opening system: the upper deck is lifted by means of a hydraulic system or crane and prepared for slaughtering
- Lighting and mechanical installation included
- Special design and equipment configuration according to user request
- No infrastructure required
- Fast shipping, easy commissioning



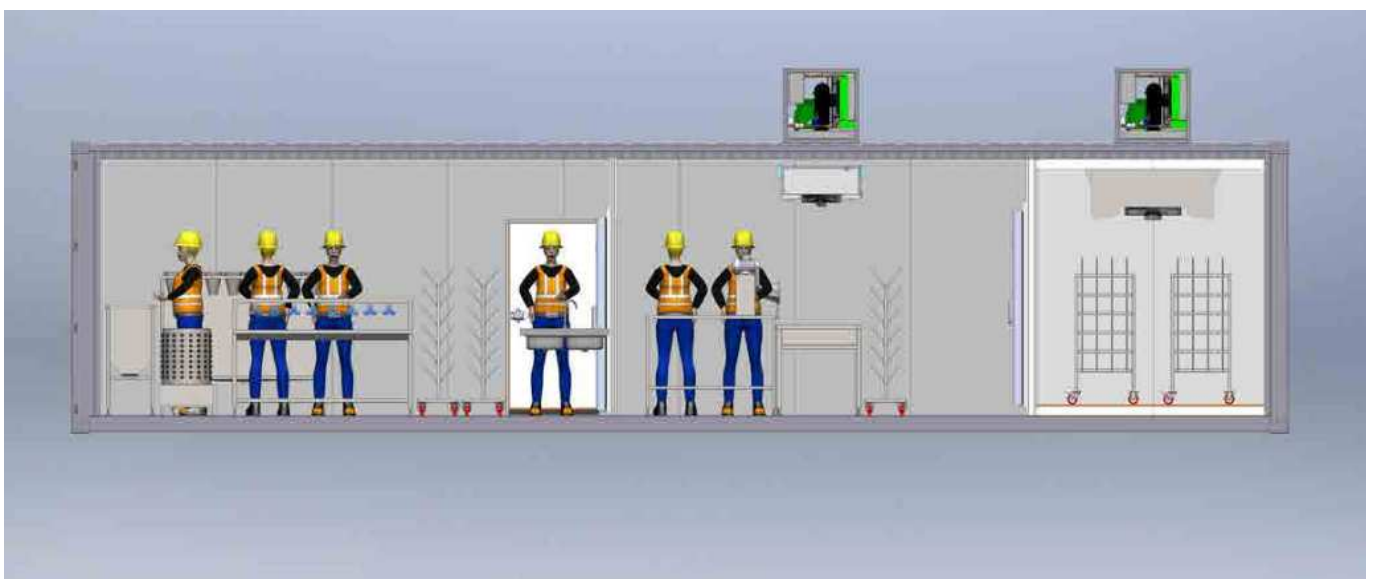


# Mobile Poultry Slaughtering Unit

Modern and hygienic, specially designed for slaughtering, pre-cooling and shredding poultry. Can be easily transported as the external structure is standard 40" container.



- Complete containerized system with slaughtering equipment
- 40" HC container
- Slaughter capacity: 100 pieces/hour
- PU sandwich panel wall cladding
- Ready to use with complete electrical, lighting and mechanical installations
- Cooling and ventilation system
- Stainless steel slaughtering tunnel
- Poultry slaughtering and packaging areas
- Pre-cooling room
- Special design and equipment configuration according to user request
- Fast shipping, easy commissioning



# Mobile Processing Unit

Offal is one of the most valuable parts of the animal and should be completely utilized. Mobile offal processing units have been specially designed for cleaning and processing of internal organs after slaughtering.

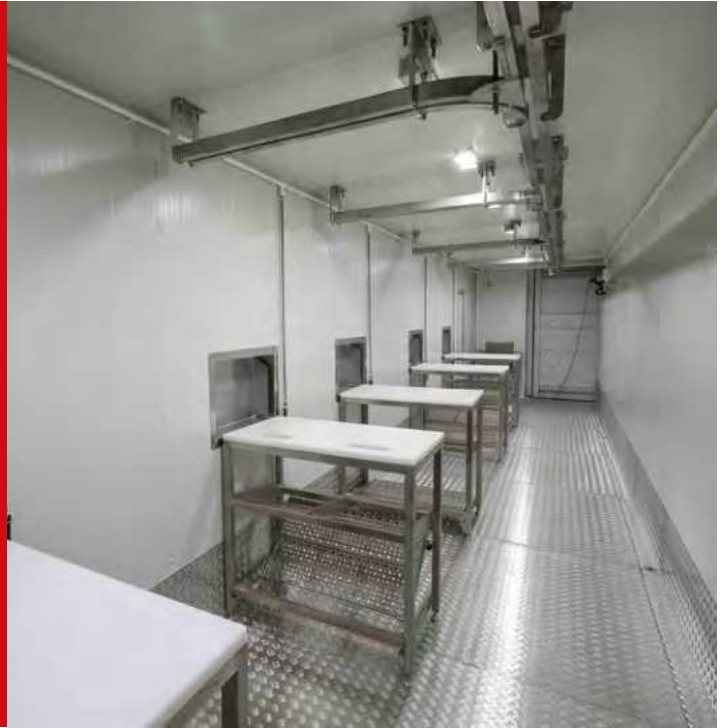


- 40" HC container
- Offal cleaning equipment included, optional tripe cleaning and feet dehairing
- Trolley, water gun, knife sterilization included
- PU sandwich panel wall cladding
- Ready to use with complete electrical, lighting and mechanical installations
- Hygiene equipment included (sinks, knife sterilizers)
- Special design and equipment configuration according to user request
- No infrastructure required
- Fast shipping, easy commissioning



# Mobile Carcass Deboning Unit

Deboning units are specially designed for shredding carcass into smaller pieces after slaughter. It can be used for cattle, sheep and goats.



- Complete containerized system, slaughter equipment, dual rail and support materials
- 40" HC container
- PU sandwich panel wall cladding
- Ready to use with complete electrical, lighting and mechanical installations
- Hygiene equipment included
- Special design and equipment configuration according to user request
- No infrastructure required
- Fast shipping, easy commissioning





# Mobile Fish Processing Facility

With mobile fish processing facility, easy to be established in desired area, it is possible to process fish products immediately, after coming out of water.



The facility consists of 5 containers:

- Processing area
- Packaging area
- Storage area
- Office area
- Styrofoam storage area

Processing capacity: 5 tons / day



## Meat Processing Technologies

### Waste Management

***Benefits of proper waste management plan for slaughterhouses:***

The meat industry can generate additional revenue by processing the waste to be used in industrial, household, and cosmetic products; livestock feed additives; pet foods; pharmaceutical and medical supplies and in many other areas.

It is also important to avoid costs related to disposing of these secondary items. Using waste as fertilizer contributes to organic farming and can reduce our dependence on synthetic fertilizers.

Additionally, waste water collected from facilities is treated and can be used for irrigation.





## Solutions to Minimise and Add Value to Waste



Skin Tanning



Blood, Offal, Bone and Meat Rendering



Pet Food Production



Composting



## Farm and Quarantine Projects

The aim of commercial livestock production is to achieve the best economic efficiency. That's why animal raising conditions have a significant importance.

Cantek aims to create a healthy and comfortable environment for animals by designing the facilities in the best possible way, in order to achieve a production that conforms to rules related to human health and environmental pollution.



## Smart Management Systems

SMS is a complete management and traceability solution specially designed for meat processing plants. This includes all operations starting from the animal receiving point to order processing point and farms.

The benefits stemming from traceability systems are:

- Assuring consumers of the origin and safety of food products
- Helping with the prompt identification of infected or substandard products
- Controlling livestock-related or other diseases, and monitoring residues on food products
- Validating support measures
- Concerning potential brand development, meeting regulation requirements

Economic benefits of having traceability systems in place include:

- Increasing efficiency and savings within many stages of the supply chain
- Reducing disease levels and compensation payments
- Allocating testing resources in a more efficient way





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