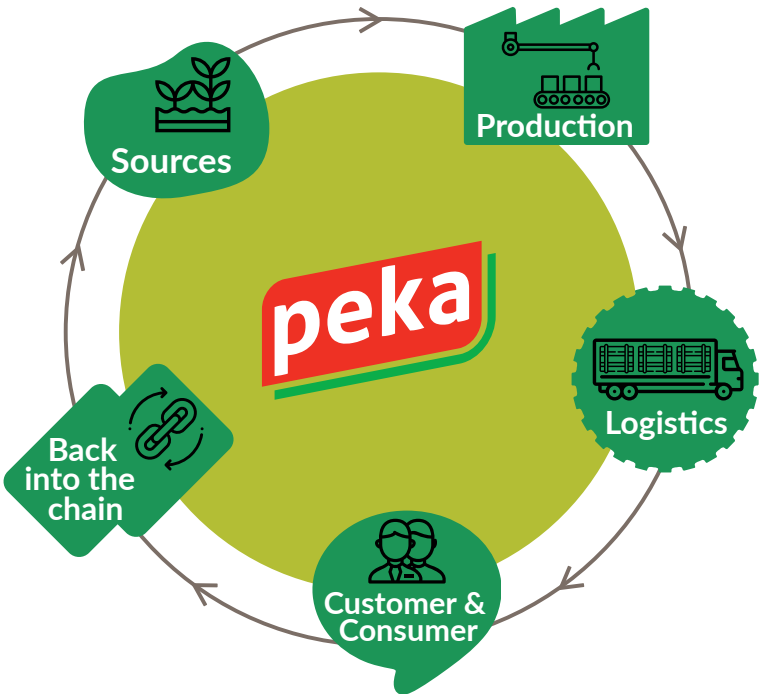
Circular business model

Doing business as a cycle: what Peka Kroef takes from nature for its production needs it gives back in the same or another form. This is the underlying ethos of the circular economy: a never-ending process, always running and with little to no raw materials being wasted. We strive towards a full circle, but realise that we need to push back the boundaries in order to accomplish this. The circular business model calls for pioneering spirit.

Peka Kroef is becoming increasingly efficient when it comes to dealing with available raw materials, and proportionally speaking we are producing less and less in terms of waste flow during our operational processes. Our products are produced in a way that minimises environmental impact and yet ensures that consumers receive a healthy, responsible product.



People

Planet

Potato

Click or tap on the icons for further information.

Sources

Our suppliers

Attaining to a circular model means scrutinizing the entire production chain. Consequently, Peka Kroef begins at the start of the production chain: our potatoes' quality, which our potato growers are dedicated to ensuring. They are all GLOBALG.A.P.-certified, meaning that their potato-growing operations satisfy international standards for agricultural and horticultural businesses in terms of food safety, sustainability and quality of the products supplied. Peka Kroef's cultivation support workers advise the growers when it comes to the Hansa, e.g. on the most suitable plots of land for this unique variety of potato. We grow a part of the potatoes according to the guidelines of the label "On the way to PlanetProof". PlanetProof focuses on five areas: soil, landscape & biodiversity, water, energy, production & consumption and climate.
The PlanetProof certified growers meet the non-statutory requirements like cleaner air, fertile soil, good water quality, more nature on the farm and circular waste processing and recycling. Those growers are audited by an independent inspection authority.

- Suppliers are **GLOBALG.A.P.-certified**
- Growers plant on plots that are the **most suitable for Hansa potatoes**
- **Sustainability, quality and food safety** go hand in hand

Local production

Peka Kroef is located in the heart of De Peel, an area known for its development of barren sandy soils at the start of the 20th century. 'Our' Hansa potatoes absolutely thrive in these sandy soils. 90% of our potatoes are cultivated within a 60-kilometre radius around Odiliapeel. Moreover, the stocks are built up in the immediate vicinity of the potato plots, minimizing driving distances during the harvest. Peka Kroef has been working with the lion's share of its growers for many years now. Consequently, our growers know exactly how to fertilise and spray our Hansa potatoes and if need be apply plant protection agents. This is the benefit of investing in relationships.

- **90% of our potatoes** are grown in Odiliapeel and surrounding area
- Storage **as close to** the growing site as possible
- **Long-term partnerships** with growers

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Growing regions in the Netherlands, Belgium and Germany

Varietal selection prevents waste

Breeding of new potato varieties plays an important role in the circular business model. Cross-fertilizing different varieties of potato enables us to achieve better quality, higher crop yields and increased disease resistance. Environmental impact is also minimised.

- Breeding of varieties **prevents crop failures**
- **Increased resistance** to potato diseases
- Breeding of varieties **limits environmental impact**

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Production

Biomass plant

We need steam for our production processes. Our desire to do business sustainably prompted us to enter into a partnership with Attero, an organization providing a sustainable solution for waste flows. A power plant has been built opposite our factory for the purposes of burning biomass. Each year Attero collects 27,000 tonnes of prunings from 5 local authorities in the surrounding area. This biomass is burned and the energy thereby released is converted into steam. Peka Kroef uses this steam, amongst others, to peel potatoes. By doing so, we are eliminating the need for 7 million Nm^3 of natural gas and replacing it with green energy.

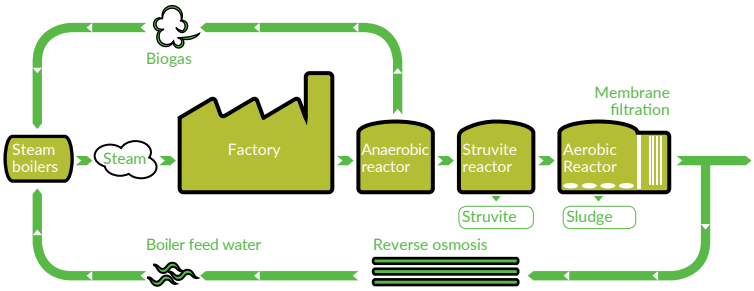
- Converting **27,000 tonnes of biomass** into usable steam
- The equivalent of **7 million Nm^3 of natural gas**
- Corresponds to the **annual energy consumption of more than 4,500 families**

Water purification

Water is vital to human survival. Hence water is also an indispensable component in our comprehensive production process from plot to plate. The potatoes are thoroughly washed, peeled and then precooked.
Our water purification unit ensures that the process water is purified with the aid of the most modern technology, enabling us to reuse 100,000 m^3 on an annual basis. This equates to the water consumption of 800 average Dutch households in one year.

- **100,000 m^3 of water** is reused
- Equating to the water consumption of **800 Dutch households** in one year

Water purification unit



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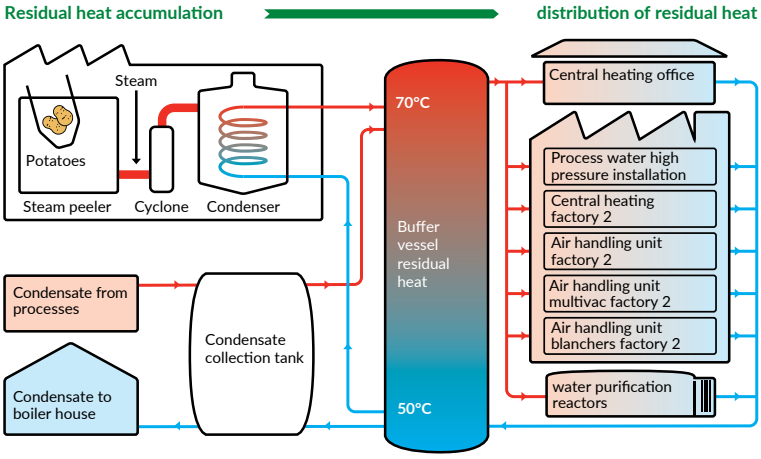
Solid cooling

In order to extend shelf life, packaged and pasteurized products are rapidly chilled and stored in cold storage rooms at 4° C. In order to keep the rooms at a constant 4° C, Peka Kroef uses a new refrigeration system, which uses heat exchange in a natural way to make the most of the difference in temperature between the warm end product and the outside temperature, which is always lower. As an extra cooling step, water can be sprayed over the system in a mist when the weather is warm.
Due to this water vaporizing, the excess heat in the system is extracted. Cooling with water and air is extremely energy-efficient and ensures a huge CO_2 reduction.

- Smart use of water **reduces overall water consumption**
- Handy use of **natural environmental factors**
- **Significant reduction** in CO_2

Residual heat network

Global warming must be curbed. Peka Kroef also takes its responsibility in this and strives for a CO_2 neutral production. A big part of this is optimal and maximum use of (residual) heat. For that reason, the first part of the residual heat network put into use end of 2019. Residual heat from, among other things, the steam peelers is collected and stored in a buffer vessel.
The collected heat is then used for the heating of heat installations. Meanwhile, the personnel office, the high pressure installation, reactors of the water purification and air handling units are also connected.
It is a plug-and-play system, so from now on all possible installations are concatenated.
Sustainable investment is investing in the future and investing in a world without fossil fuels!



More

Steam production

Peka Kroef invested in new steam boilers with a considerably higher output than the old boilers. These boilers are primarily fed with biogas from the water purification. Aside from the markedly more efficient burners, heat exchange is also used: the residual heat from the outgoing air flow is used to preheat both the incoming air and the boiler feed water.
Thus ensuring that residual heat is used optimally in a single piece of equipment.

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Logistics

Reducing CO_2 emissions

Each day our drivers transport our chilled potato products to customers. Lorries emit CO_2. Making it advisable to minimise CO_2 emissions.
Our drivers are trained in 'new driving', as a result of which they know how they can drive as economically as possible. They adjust their actions accordingly. What's more, to the fullest extent possible we have the trailers' refrigeration systems run on electricity rather than diesel, resulting in a further reduction being achieved.
All our Volvo trucks are Euro 5 or 6, meaning they are compliant with current EU regulations on exhaust fume emissions. Euro 5 (from 2008-2012) and Euro 6 stipulate that a lorry may not emit more than 1.5 grams of CO_2 per kilowatt-hour.

- Drivers drive in line with **'new driving'** principles
- Refrigeration systems run **on electricity** to the fullest extent possible
- All trucks satisfy **current requirements** in terms of CO_2 emissions

Optimum shipping

The art of efficient driving lies partly in optimum pallet loading and partly in tight logistical planning. Optimum pallet loads ensure we achieve a considerable reduction in fuel. Good load planning ensures we minimise instances of empty trailers in the case of regional deliveries. When exporting our products, we adopt a groupage approach, which sees a lorry being loaded until full rather than just containing a couple of pallets.

- Using **groupage**
- Our lorries carry cargo on both the **outbound and inbound journeys**

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Customer & Consumer

Pure and honest

Our customers and the end consumers are keen for their food to be made using ingredients that are as honest as possible. This is termed Clean Label. Peka Kroef is homing in on this trend and reduces the number of artificial ingredients wherever possible. Salt reduction is another important trend. In excess of 85% of Europeans are ingesting more salt than the maximum recommended daily allowance of 6 grams. We are doing our bit towards reduction by producing our potato products with as little salt as possible, e.g. in our seasoned potato products. In conjunction with our customers, we are examining their need to nevertheless continue delivering the tastiest potato products!

- Peka endeavours to **minimise the use of artificial ingredients**
- Nigh on all natural potato products for the consumer market **have been made salt-free** in recent years
- Pasteurisation and cold storage ensure that **no artificial preservatives are required**

Combating waste

Millions of Europeans are doing their utmost to separate plastic from general waste. In turn, consumers expect companies to combat waste and separate waste flows as well. Consequently, Peka Kroef is not only reducing its own use of packaging but also expecting business associates to do so too.
We discuss with our customers the expected sales, rotations per store and campaign numbers. Optimizing these enables us to fine-tune production numbers to sales. This close cooperation makes it possible for us to minimise potential surplus in terms of potato products and packaging materials.
The consumer can take part in the war on waste by selecting a suitable pack size. Hence our packs vary in size from 200 grams up to our largest pack at 5 kilogrammes, with all manner of sizes in between. An additional way of combating waste is to choose our products that have a longer shelf life due to heat treatment.

- **Different pack sizes** to ensure everyone can buy exactly what they need
- **Longer shelf life** resulting in less being thrown away

Back

Back into the chain

Peka and recycling

Separating waste flows and subsequently putting these back into the chain completes the cycle that characterises the circular business model. Quantitatively a sizeable proportion of our waste flows comprises of potato peel or leftover potatoes which are sold off as animal food. By-products are a regular, inherent aspect of the production process, such as cling film or foil, paper and sewage sludge. These are reused. Peka Kroef strives towards maximizing its recycling and is therefore continuously looking for opportunities in the market.
The workplaces in the factory are facilitated so as to make separation of waste as straightforward as possible, which, in addition to ensuring a tidy, clear workplace, makes work easier. Separate your waste and others will follow suit!

- Selling off leftover product as high-quality animal food **rich in protein and high in fibre**
- Participant in GMP+ (Good Manufacturing Practice), as a result of which Peka Kroef is **recognized as a qualified animal food producer**
- **Efficient use of by-product** in the chain

Tare soil

Potatoes grow outdoors in the open fields. When dug up, some of the soil comes out with the potatoes. This soil stuck on the potatoes is called tare soil. The potatoes have to enter the production process clean. Consequently, the tare soil is rinsed or sieved off the potatoes in the factory. The tare soil thereby recovered is then returned to the land. Tare soil is deposited on selected plots to prevent spreading disease. Research has shown that tare soil satisfies all statutory requirements vis-à-vis environmental hygiene.
As a result, tare soil is returned to the environment in a responsible manner.

- Delineated depositing of tare soil to **prevent spreading disease and environmental impact**
- Internal control system to ensure **constant quality of tare soil**
- Consult **manufacturer self-declaration FEV009/1**

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People

It’s all about people

Peka Kroef’s chain consists of people. People growing our potatoes, people making our products, people buying our products, people eating our products. Peka Kroef has or is endeavouring to foster a relationship of trust with all our growers, staff, customers and suppliers. It is from the perspective of this philosophy that Peka Kroef formulates its corporate social responsibility (CSR) policy for staff constituting our Human Capital.
We encourage our employees on our way into the future. However not without a good atmosphere, corporate culture and family feeling.
We are keen to hear what is important to consumers, to enable us to tailor our products and services to their needs.

- Being a **good employer** and ensuring that people have equal opportunities, irrespective of their sex, age, ethnicity, sexual orientation, religion, etc.
- Investing in **education and training, broadening tasks, deployability and ergonomic workplaces**
- We **work together with schools** and are a recognised training and work placement company

Number of employees
328

Average term of employment
12 years
Staff turnover nil

Absence due to illness
Well under national average

Staff commuting distance
Nearly all staff live within a 15-kilometre radius

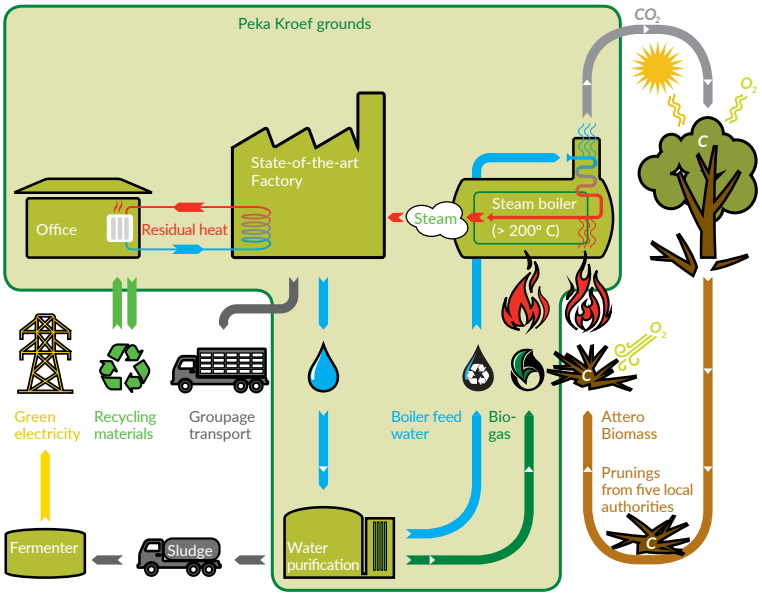
Back

Planet

Extremely important

Ensuring a good, stable environment is of the utmost importance to a company like Peka Kroef. After all, the quality of our potato products is dependent on environmental factors such as the weather and on climate change in the long run. Extreme weather impacts on potatoes' quality and growth, thereby having a direct effect on our business. Hence it goes without saying that Peka Kroef takes the environment seriously. For example, a sizeable proportion of our steam is generated by burning biogas and biomass. By adopting a circular business model, we are endeavouring to achieve climate-neutral operations: what we have taken from nature, we will give back in a different form or sell to the market for reuse.

Overview of environmental efforts



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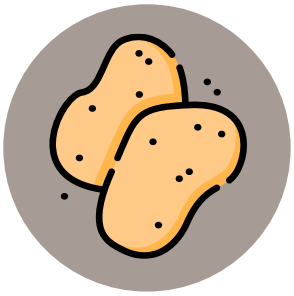
Potato



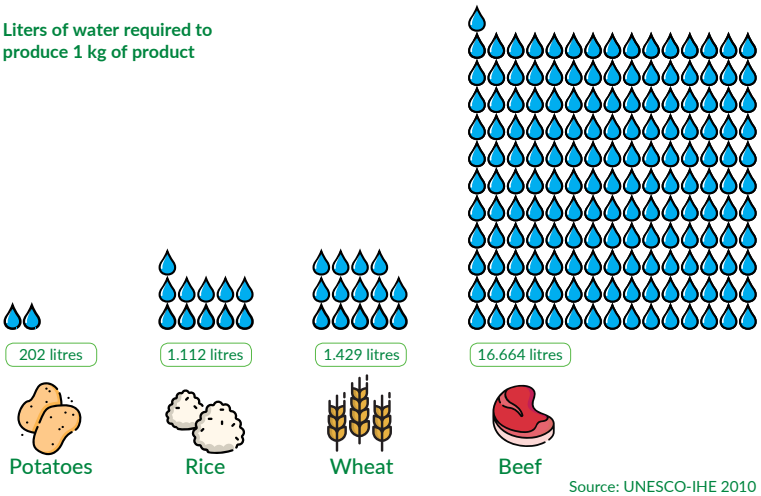
Healthy potatoes

Potatoes are fundamental to our existence. Both as a company and in terms of a healthy diet for humanity. Peka's potatoes are prepared in steam and water, thereby preserving all their beneficial and healthy properties. Furthermore, potatoes fit in perfectly with the goal of achieving a sustainable world. A kilogramme of harvested potatoes requires a relatively low level of fertilizer compared to other crops. Moreover, potatoes use very little water per kilogramme of harvested product, comparatively speaking. This is an advantage because the availability of fresh water is set to become a restrictive production factor throughout the world in the future.
Which is why potatoes could play a significant role in feeding the world's growing population. How very 'a-peeling'!

Unique characteristics

- Potatoes are exceedingly healthy: included **in the food pyramid issued by the Dutch Nutrition Centre (Voedingscentrum)**
- An important **source of fibre**, containing more fibre than white rice and white pasta
- Potatoes contain **essential nutrients** such as magnesium, zinc, copper, vitamins C, B1 and B6 and iron, and are a source of potassium and folic acid

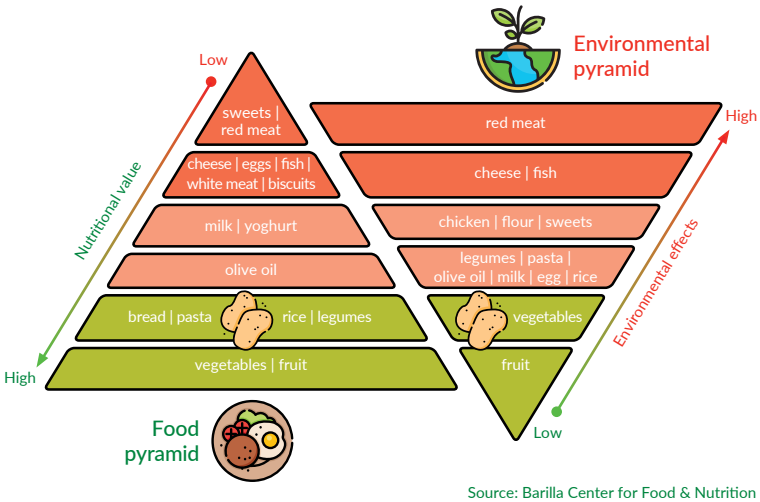
Potatoes are fundamental to our existence



Source: UNESCO-IHE 2010

More

High nutritional value of potato in relation to the environmental effects



Source: Barilla Center for Food & Nutrition

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