Entering the European market for frozen vegetables

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Food safety certification, combined with reliable and frequent laboratory testing, can help create a positive image for frozen vegetable suppliers wishing to export to Europe. Sustainable production and corporate social responsibility measures will help give emerging suppliers a competative advantage. Some of the toughest existing competitors for new suppliers are EU member states such as Belgium and Spain. Outside this region, China and Turkey pose challenges for new entrants.

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1. What requirements must frozen vegetables comply with to be allowed on the European market?

What are mandatory requirements?

All foods products in Europe are required to comply with EU Commission regulations. Additives must be approved and used within the permitted ranges. Harmful contaminants, such as bacteria, viruses, pesticide residues and excessive levels of heavy metals, are prohibited. Food labels must also provide information about, among other things, allergens, nutritional value and preservatives used.

Contaminant control in frozen vegetables

Contaminants are unwanted substances in or on food products that impact food constitution, purity and nutrition. The European Commission Regulation has set maximum levels for certain contaminants in food products. This regulation is frequently updated. Under EU regulations, food contamination must be avoided. Products that exceed the limits will be banned from European markets. The most common requirements regarding contaminants in frozen vegetables relate to the presence of nitrate, pesticide residues, heavy metals, microorganisms and mycotoxins.

Nitrate

A maximum level of 2,000 mg NO-3/kg applies for frozen spinach (see section 1 of Annex of Regulation (EC) No 1881/2006).

Pesticide residues

The EU has set maximum residue levels (MRLs) for pesticides in food products. Products containing pesticide residues beyond the prescribed limit are withdrawn from European markets. However, the number of border rejections of frozen vegetables has decreased thanks more laboratory testing. For information about border rejections, see the annual reports of the European Rapid Alert System for Food and Feed (RASFF).

The EU publishes a list of pesticides approved for use, which is frequently updated. In 2021, the European Commission adopted 20 new laws prescribing changes for various pesticides.

Microbiological contaminants

One reason frozen vegetable may be rejected at the border or withdrawn from the European market is the presence of microorganisms such as *Listeria monocytogenes*, *Salmonella* or histamine. Commission Regulation (EC) No 2073/2005 on microbiological criteria for foods lays down safety criteria for relevant foodborne bacteria. These criteria define the acceptability of a product or a batch of food products in the market. In addition, the regulation lays down certain process hygiene criteria for correct functioning of the production process. Microbiological criteria have been developed in accordance with internationally-recognised principles, such as those of the Codex Alimentarius. Scientific advice on microbiological risks in food is provided by the European Food Safety Authority (EFSA). In 2020, 40 cases of foodborne outbreaks were reported, of which 15 were probably caused by *Salmonella*, 10 were linked to norovirus, 5 to *Listeria monocytogenes*, and 4 to histamine poisoning.

Heavy metals and metalloids

Restrictions are in place for lead and cadmium content in fruits and vegetables. Spinach has the greatest sensitivity to heavy metals, particularly cadmium, which accumulates in leaves. Cadmium can come from the natural environment, such as soil or growing pots. (See section 3 of Annex of Regulation (EC) No 1881/2006.)

Unwanted foreign matter

The presence of any foreign matter such as insects, plastic pieces, stones, metal or glass make food products unsuitable for clearance and subject to thorough checks and careful reviews.

Tip:

Read more about MRLs on the European Commission website on maximum residue levels. To be prepared for any new changes in MRLs, read the ongoing reviews of MRLs in the European Union.

What additional requirements do buyers often have?

Product authenticity

Product specifications that are intentionally misleading are illegal in Europe. As undeclared preservatives, food ingredients, concentration levels or artificial colours in products may cause allergies, strict action is taken against offenders. Many laboratories in Europe have increased food testing to uncover this type of fraud.

Quality requirements

Frozen vegetables must meet the following quality requirements:

- Reasonably uniform colour, texture and crispness;
- Fresh, clean and free of foreign matter;
- Virtually free of pests and associated damage;
- Free of artificial or peculiar flavours and odours, with specification of other added ingredients.

Optional ingredients permitted in specific frozen vegetables are salt (sodium chloride), sugar, edible oils, aromatic herbs, stock or vegetable juices and vegetable garnishes, up to a maximum of 10% m/m of the total drained vegetable ingredient.
General quality requirements for processing, cutting, handling, labelling, defects and allowances are set out in

the Codex Alimentarius standards for Quick Frozen Vegetables (carrots, corn on the cob, leeks and whole kernel corn). In addition, separate standards exist for frozen peas, spinach, broccoli, cauliflower, Brussels sprouts, green and wax beans and French-fried potatoes.

Food safety certification

Although food safety certification is not obligatory under European legislation, it is required by almost all European food importers. Most established importers will not work with potential suppliers without proof of food safety certification.

The majority of buyers in Europe ask for certification recognised by the Global Food Safety Initiative (GFSI). For frozen vegetables, the most popular certifications are:

- International Featured Standards (IFS)
- British Retail Consortium Global Standards (BRCGS)
- Food Safety System Certification (FSSC 22000)

Other voluntary certifications are:

- EurepGAP: compliance with market standards set by EurepGAP can help smallholders obtain and maintain international market access, particularly to the EU. The standards covers agricultural production processes for the certified product from pre-planting to harvest. The EurepGAP certification scheme is based on a supply-chain partnership of retailers, producers, suppliers/growers and associate members from the agricultural and service sectors (for more information, see www.eurep.org (login required)).
- Safe Quality Food 2000: SQF 2000 is a retailer-driven initiative founded by the Food Business Forum and run by the US-based Food Marketing Institute, and is recognised by the GFSI. It works with food safety codes and quality system requirements for the food industry, with the aim to supply food that is safe and meets quality and legislative requirements. SQF 2000 applies the concepts and principles of HACCP, good manufacturing practice (GMP), good hygiene practice (GHP) and GAP.

Note that this is only a partial list and food certification systems are constantly under development. Most food safety certification schemes are based on existing ISO standards, such as ISO 22000.

Although different food safety certification systems are based on similar principles, some buyers prefer a particular system. For example, British buyers often require BRC, while IFS is more common for German retailers. Also note that food safety certification is only a basis from which to start exporting to Europe, and serious buyers usually also visit the production facilities.

Packaging requirements

Packaging and labelling requirements are crucial for entering the European market:

- Primary packaging (direct contact with food) may include moisture and vapour-resistant wraps, such as heavyweight aluminium foil, plastic-coated freezer paper and other plastic films. The primary package may be covered in a carton wrap or box.
- Secondary packaging is a form of multiple packaging used to process and display primary packs together for sale. Cardboard freezer boxes are frequently used as an outer covering for plastic bags to protect them against tearing, and for easy stacking in the freezer.
- Tertiary packaging is used for bulk transportation of products that are not displayed on the shelf (for example, carton boxes, pallets, sea containers).

Packaging must protect the product from contamination, leakage and dehydration. The Codex Alimentarius provides information about packaging individual fruits and vegetables, such as different styles, sizes and hygienic requirements for product packing. Packaging requirements differ widely among customers and market segments.

Labelling requirements

General EU labelling regulations for food also apply to frozen vegetables, and cover:

- Name under which the product is sold;
- Net weight of pre-packaged products;
- Minimum shelf life;
- Special conditions for storage or use;
- Business name and address of manufacturer, packager or seller based in the EU;
- Lot marking on pre-packaged products, with the marking preceded by the letter 'L';
- Nutrition information (the European Commission is working on various proposals, including harmonised regulations for the display of nutrient content on the front of product packaging, as part of the Green Deal's Farm to Fork Strategy);
- Information about the origin of primary ingredients, if different from the stated place of origin (mandatory requirement as from 1 April 2020).

Refer to Regulation (EU) 1169/2011 for detailed rules about food labelling requirements in the European market.

Specific labelling regulations for frozen vegetables

The label should state the name of the vegetable and the words 'quick-frozen' or 'frozen' and any additional ingredients used (salt, spices, etc.). It should also state the style, as appropriate (for example: IQF-whole, block, sized/unsized). If the frozen vegetables are cut, the cutting style should be on the label as well (diced, halved, julienne, trimmed, rings, chopped, etc.).

For bulk export packaging, the above information can be provided in the accompanying documents instead of on the packaging itself. However, frozen or quick-frozen + [name of the vegetable] and the name and address of the manufacturer or packer must appear on the packaging. In addition to the type of vegetable, product specifications often include the variety.

The EU requires the label text to be written in one of the official languages of an EU member state and be easy for consumers to understand. Specifications for nutrition labelling, net quantity, use-by date, date of freezing, process undergone, origin, allergens and legibility (minimum font size for mandatory information) apply to frozen vegetables. Celery is the sole vegetable in the regulation's allergen list.

EU Law provides labelling guidance for quick frozen foods.

Tips:

Get food safety certification. Consult with preferred buyers about their certification preferences and carefully select a certifying company.

Do a self-assessment using the producer starter kit available on the amfori BSCI website.

Green Deal

In 2019, the European Commission presented the Green Deal, containing measures for sustainable agriculture, consumption and the economy. This is expected to bring major changes to the European fruit and vegetable industry, impacting suppliers in Europe and worldwide. Overall, the aim is a climate-neutral society by 2050. As an intermediate step, by 2030 CO_2 emissions must be lowered 55% (compared to 1990), the use of pesticides reduced by 50%, and 25% of farming must be organic. The Green Deal's Farm to Fork Strategy sets out specific measures for the food industry, including to encourage vegetable consumption.

The Green Deal may require major changes to the manufacturing processes and cost structures of developing country suppliers.

Corporate social responsibility (CSR)

European companies have more, though varying, CSR requirements. Some companies require suppliers to sign a code of conduct stating that they conduct business in a responsible manner and in line with local, environmental and labour laws. Some also require adherence to common standards such as Supplier Ethical Data Exchange (SEDEX), Ethical Trading Initiative (ETI) or Business Social Compliance Initiative Code of Conduct (BSCI). Suppliers of frozen vegetables to retail segments will be asked to follow the specific code of conduct developed by retailers themselves. Many environmental sustainability and social responsibility issues are taken up at the farm level. Farmer sustainability is tested using the Sustainable Agriculture Initiative's Farmer Self-Assessment form.

Payment terms

Before any international transaction, it is important to sign a contract of sale. This defines the terms and method of payment, which may vary in how much security they give you. When exporting your first shipment, ask for an advanced payment by bank transfer (safest option) or letter of credit (second best, but may come with added costs). Some European importers may pressure you to accept deferred payment. This is fine if you have export insurance.

You are advised to insure your payments and goods, especially for higher volumes, to offset risks such as an importer's failure to pay, product damage or theft and currency fluctuations, among others. Export credit insurance is the most common type of insurance for processed fruit and vegetable exports. This is offered by export credit agencies, which can be private or government-owned.

What are the requirements for niche markets?

Organic frozen vegetables

Global demand for organic frozen vegetables is growing and Europe makes up a large share of this growth. EU Regulations set out the marketing requirements for organic vegetables.

All food producers, processors or traders wishing to market their goods as organic must be registered with an inspection authority. Farms that want to produce organically have to undergo a conversion process. European countries offer various forms of support to help organic producers get started. Growing and processing facilities must be audited by an accredited certifier before the EU's organic logo can be placed on products. The Agricultural European Innovation Partnership (EIP-AGRI) works to foster competitive and sustainable organic farming in Europe.

Note that to import organic products into Europe you need to have an electronic certificate of inspection (e-COI). Each batch of organic products imported into the EU has to be accompanied by an e-COI, as defined in the EU Regulation. This certificate has to be generated via the Trade Control and Expert System (TRACES).

Sustainability certification

Sustainability is a broad term with environmental, social and economic aspects. There is no one internationally-recognised certification covering all of them. The most important aspects currently are carbon neutrality, climate change, environmental and social governance policies and using recyclable packaging materials. Many companies make their CO2 emission rates public, but such claims are hard to verify. However, private certification schemes are under development. The best-known certification schemes focus on environmental protection and ethical trade. Implementing a management system such as ISO14000 (environmental aspects), OHSAS 18001 (occupational health and safety) or SA 8000 (social conditions) is one way to address sustainability and possibly gain a competitive advantage.

Although widely recognised, the Fairtrade and Rainforest Alliance certification schemes are little used in frozen vegetable production. Fairtrade International has developed a standard for prepared and preserved fruits and vegetables for small-scale producer organisations, but only a few frozen vegetable certifications are known. By contrast, several fresh vegetable dealers are Fairtrade certified.

Tips:

- Consult the organic farming legal guidelines on EcoEurope Quality and Traditions.
- Read more about payment, delivery and other practical issues in the CBI study on Organising Your Export to Europe.

2. Through what channels can you get frozen vegetables on the European market?

Manufacturers and processors have been working with local farmers in countries where vegetables are sourced and processed/frozen to export to other EU countries. Other suppliers import end products and re-pack them for sale under private labels to retailers or the food service sector.

How is the end market segmented?

The retail, food service and food industries are the largest users of frozen vegetables. Business buyers such as hotels, caterers, restaurants and fast-food chains are among the major users of frozen fruit and vegetables.

Figure 1: End market segments for frozen vegetables in Europe

Source: CBI Market Intelligence

Retail segment

Large retail chains tend to import frozen vegetables from developing countries through intermediaries or source them from neighbouring European countries. Usually, large-scale retail chains source vegetables from local farms and process them (sorting, grading, washing, chopping, freezing) in-house to sell under their private labels. As well as selling raw frozen vegetables, retailers also have in-house kitchens to season, grill, roast, freeze and re-pack them for end customers.

Import volumes for the retail sector have been low post-pandemic, mainly due to a lower dependence on international supplies and a higher dependence on local produce. Many government initiatives have supported this and retailers have followed suit with low prices amid fierce competition to gain an advantage.

Many leading retail companies in Europe are active in more than one country. Some examples are Schwartz Gruppe (Lidl and Kaufland brands), Carrefour (France), Aldi (Germany), Edeka, Metro Group, Rewe Group, Auchan, Intermarché and Ahold (Delhaize, Albert Heijn and several other brands).

Food service segment

The food service segment (hotels, restaurants and catering establishments) has different requirements for frozen vegetables as compared to retailers. Frozen vegetables are usually sourced from large manufacturers or distributors. They prefer to have contracts with suppliers to sustain the quality of output. Larger companies tend to source in bulk rather than small packs. Many food service providers choose to source ready-to-eat meals directly from distributors (as per their specifications) and sell them under their own brand name. Some wholesale companies catering to the food service segment are Ardo and Oerlemans (the Netherlands), Frosta Food Service (Germany) and Aronde (Belgium).

Food processing segment (food ingredient industry)

Compared to the retail and food service industries, demand for frozen vegetables is low in the food processing industry. Food processing sub-segments such as canned vegetables, baby food, processed juice and vegetable powders tend to use fresh vegetables, not frozen. The frozen pizza industry is the main user of frozen mushrooms and olives. Food processing companies need supplies to be regular and mostly high-quality. These companies work closely with importers, often under long-term contracts or partnerships. The wide variety of frozen prepared foods in Europe creates added opportunities for frozen vegetable suppliers. The growing trend in vegan food consumption is also boosting sales of frozen vegetables to the frozen meal industry.

The food ingredient industry also uses smaller quantities of frozen vegetables to make food additives. Vegetable snacks such as kale crisps and sweet potato chips are examples of innovative products made from frozen vegetables.

Tips:

- See www.fooddrinkeurope.eu for more information about the European food processing industry.
- See the SIAL Paris website to learn about the latest trends in the frozen food processing industry.

Through what channels do frozen vegetables reach the end market?

Importers (wholesalers) specialised in frozen vegetables, including some food ingredient suppliers, are the most important channel in Europe. Many large frozen vegetable producing companies also import frozen vegetables. Retail chains rarely source frozen vegetables from developing countries. European trading companies more often act as intermediaries and take part in retail chain procurement procedures.

Figure 2: European market channels for frozen vegetables

Source: CBI

Importers/wholesalers

In Europe, importers may also be distributors or wholesalers. They sell frozen vegetables to food processors/manufacturers. Some importers have cold storage warehouses and do in-house packaging/labelling, and sell products in bulk to retailers or re-export them. Many European countries are intermediary import and export hubs.

For new suppliers, the challenge is to build lasting relationships with established importers, as they usually work with a select few suppliers. Regulations are in place to ensure a smooth flow of goods into European countries.

Established importers may perform audits on quality and other aspects to ensure that safety protocols and strict contract terms are being followed. Due to current stiff competition for imports from developing countries, offering discounts and lower prices is challenging for new exporters. To ensure the supply chain is transparent, many importers develop their own codes of conduct and build long-lasting relationships with preferred suppliers in developing countries.

There are many importers of frozen vegetables and other frozen products. Some of the leading companies importing frozen vegetables in Europe include Nomad Foods (Iglo, Birds Eye and Findus brands), ARDO, Crops and Greenyard Frozen.

Retailers

Retailers often work with farmers/cooperatives directly, eliminating the need for middlemen and keeping prices down. This can put a higher burden on other suppliers (intermediaries). Offering organic, ‘free from’ or natural products as part of their range gives suppliers a better chance of attracting health-conscious European consumers.

Food processors

Importers usually sell frozen vegetables to food processing companies in bulk for processing, based on the needs of the specific end market (retailers, food service, food industry). Many importers are also food processors, which eliminates the middleman.

Examples of frozen meal processing companies in Europe are Nestle (Wagner frozen pizza brand), Dr Oetker (frozen pizzas and frozen ready meals), Nomad Foods brands, Picard, Amy’s Kitchen and Chef Martin.

What is the most interesting channel for you?

Specialised importers/wholesalers of frozen fruits and vegetables continue to be the most useful contact for marketing frozen vegetables in Europe. Most importers are knowledgeable about the European market and closely watch developments in frozen vegetable production countries. This makes them especially well informed about market developments and able to provide practical advice about exports. Importers normally import frozen fruit as well, so diversifying your product range can give a competitive edge.

As an end user of the frozen food industry, the retail channel is becoming more powerful compared to the food service and food industry segments. Retailers have benefitted from private labels, which are no longer seen as lower quality, but fresh and natural. Although the retail segment is extremely demanding for new suppliers, by identifying their unique selling points and focusing on quality, competitive pricing, sustainability and trends, they may be able to carve out a niche for themselves.

Tips:

- Identify your export market and do extra market research on private labelling for specific products.
- Learn about the food and drink manufacturing industry in Europe on the Food and Drink Europe website.
- Learn about frozen vegetable traders in Europe on the European Association of Fruit and Vegetable Processing Industries (PROFEL) website.

3. What competition do you face on the European frozen vegetables market?

Which countries are you competing with?

Competition is high in European countries. Many import frozen vegetables purely for re-export. Belgium is the leading frozen vegetable supplier and a large share of this supply is in the hands of local suppliers. Among non-European countries, China supplies a major share, followed by Turkey, Egypt and several other countries, each of which specialise in specific types of frozen vegetables.

Note: In terms of quantity, Germany exports more frozen vegetables than China. However, Germany is a transit country and does not produce all of this supply domestically. Most of it is re-exported.

Belgium: leading supplier of frozen vegetables in Europe

Belgium is the leading supplier of frozen vegetables in Europe and accounted for almost 31% of the total supply to other European countries in 2021. According to the Observatory of Economic Complexity (OEC), it was the world's largest exporter of frozen vegetables in 2020. Belgium exports most of its own production as domestic consumption is low. Belgian frozen vegetable producers in the South Flanders and West Flanders regions account for a quarter of all European frozen vegetable production.

Exports of frozen vegetables from Belgium to other European countries have decreased by more than 0.7 tonnes since 2017, to 0.8 million tonnes in 2021. The leading export destinations for Belgian frozen vegetables in Europe are Germany and France. Belgium is a very strong exporter of frozen vegetable mixtures (largest in the world). These mixtures are sold as own-brand products or tailored to the retail and food service industries across Europe. Outside Europe, the leading export destinations are the UK, US and developing countries.

Belgium is also a major importer of frozen vegetables. Around 50% of frozen vegetables it exports are not produced in Belgium itself, but imported from other (mainly European) countries. However, much of these imports are produced by a few Belgian companies with subsidiaries in other European countries.

The Belgian vegetable industry has a trade union for frozen vegetable wholesalers and processors, Vegebe, which has a list of member companies and initiatives to improve the sector. It actively supports research and represents Belgium's vegetable processing sector in PROFEL.

Spain: second-largest supplier in Europe

Spain was the second-largest exporter of frozen vegetables in Europe in 2021, and in 2020 was third-largest exporter in the world, according to the Observatory of Economic Complexity (OEC). It accounted for 16% of total exports to European countries in 2021. Spain's exports of frozen vegetables to other European countries grew by more than 57,677 tonnes over the past five years, from 378,254 tonnes in 2017 to 435,932 tonnes in 2021. A large share goes to other European countries, with France as the leading export destination. Its leading export products are frozen broccoli, sweet peppers and mixed vegetables. Outside Europe, the leading export destinations in 2020 were the US and Canada.

The Spanish Association of Frozen Vegetable Manufacturers (ASEVEC) brings together major frozen vegetable manufacturers in Spain. The Association is currently made up of eight companies that are active nationwide and account for 95% of total production. In 2021, 941 thousand tonnes of frozen produce was processed in Spain.

In Spain, frozen vegetables are produced in several regions, led by Navarra (northern Spain) and followed by Murcia (southeast Spain) and Andalusia (southern Spain).

Poland: export diversification

Poland was the third-largest exporter of frozen vegetables in Europe in 2021. Exports of frozen vegetables fell from 307,851 tonnes in 2017 to 283,585 tonnes in 2021. Frozen peas, beans, spinach, sweetcorn, sweet peppers, mushrooms, tomatoes and mixed vegetables are exported from Poland. Exports of frozen sweet peppers saw the fastest growth, of 11%, over a period of five years. According to the OEC, the main export destination in 2020 was Germany (22%), followed by France (9%) and Belgium (8%).

Poland is exporting more and more frozen vegetables to destinations outside the European Union. The United Kingdom and United States are becoming important destinations for Polish frozen vegetables.

The Netherlands: producer, exporter and importer

The Netherlands is a large vegetable producer in Europe, focused mainly on fresh vegetables. Exports of frozen vegetables have decreased in recent years, from 275,902 tonnes in 2017 to 264,411 tonnes in 2021. Almost 30% of this production is onions. The country exports nearly 75% of its produce to other countries (including Belgium) where it is frozen and re-exported to neighbouring countries. Belgium is a major processor of frozen vegetables for the Netherlands. According to the latest data from the OEC, the leading export destinations for the Netherlands in 2020 were Germany (27%), Belgium (13%) and France (8.5%). However, some vegetable exports to Belgium are produced by Belgian subsidiaries based in the Netherlands, such as the ARDO brand.

France: falling exports

France is the fifth-largest exporter of frozen vegetables in Europe and accounted for more than 8% of its total frozen vegetable exports in 2021. Between 2017 and 2021, these exports declined from 261,281 tonnes to 215,988 tonnes. France exports frozen peas, beans, leguminous vegetables, spinach, sweetcorn, olives, sweet peppers, mushrooms, tomatoes and mixed vegetables. In 2021, France was Europe’s largest exporter of sweetcorn with a volume of 23,441 tonnes, making up 23% of all frozen sweetcorn exports to Europe. French exports of frozen peas account for 10% of total frozen peas exports, but have fallen over the past five years. According to the OEC, the main export destination in 2020 was Belgium (35%), followed by Italy (13%), the United Kingdom (11%) and Spain (7%).

Germany: sixth largest exporter

Germany was Europe’s sixth-largest frozen vegetable exporter in 2021. Its exports of frozen vegetables increased from 125,082 tonnes in 2017 to 137,676 tonnes in 2021. In 2021, Germany was the largest exporter of frozen mixed vegetables in Europe. Frozen peas, beans, leguminous vegetables, spinach, sweetcorn, olives, sweet peppers, mushrooms, tomatoes, artichokes, asparagus and mixed vegetables are exported from Germany. According to the OEC, its main export destination in 2020 was Austria (18%), followed by the Netherlands (14%), Belgium (10%) and the United Kingdom (8%).

Suppliers from non-EU countries

- China is one of the world's largest exporters of frozen vegetables. This is mainly because the Chinese vegetable market is so large and there are production areas throughout the country. China exports frozen mushrooms, asparagus, beans, peas, leguminous vegetables and sweet peppers to Europe, with larger shares of mushrooms and asparagus.
- Turkey supplies frozen peas, beans, spinach, sweetcorn, olives and mushrooms. It exports large shares of frozen sweet peppers and frozen tomatoes to European suppliers.
- Egypt is the leading supplier of frozen artichokes to Europe, with Italy as the main export destination. Egyptian frozen artichokes are used by the European food service segment, particularly pizza restaurants. Egypt also supplies frozen peas, leguminous vegetables, spinach and mixed vegetables to Europe.
- Serbia has a highly developed frozen fruit industry and much of its processing capacity is also used to produce frozen vegetables. The main frozen vegetable exported to Europe is sweet pepper. Frozen pea production is also rising.
- Ecuador is an important supplier of frozen mixed vegetables and sweetcorn to Europe, with most exports going to Germany.

Tip:

You can find information about the frozen vegetable industry in Europe on the websites of leading producers, such as the Belgian vegetable processing sector union (Vegebe) and the Spanish Association of Manufacturers of Frozen Vegetables (Asevec).

Which companies are you competing with?

The supply of frozen vegetables is very concentrated in Europe as big processing companies have production subsidiaries in multiple countries in the region.

EU companies

Belgian vegetable processors are the European leaders, with freezing operations in many countries outside Belgium. They compete mainly with Spanish, Polish and Dutch companies. The biggest European competitors include Belgium's The Greenyard Foods Group, ARDO, D'Arta and Crop's, and Spain's Virto Group and Congelados De Navarra.

The Greenyard Foods Group is a global market leader in fresh and frozen foods. It caters to the top-20 retailers in Europe and has a turnover of €4.4 billion. Freezing plants are strategically located in the main vegetable producing areas for quick transport and freezing after harvesting. Greenyard is dedicated to sustainability and working towards a 50% reduction in CO2 emissions and 100% recyclable packaging by 2025.

ARDO is a leading frozen vegetable supplier in Europe, with a revenue of €1.9 billion. It has operations in nine countries including Belgium, France, Spain, Italy and Portugal and exports to more than 100 countries. Its customers are in retail (own brands and private labels), the food service sector and the food industry. ARDO emphasises sustainability and recently switched to sustainable packaging. Its Minimum Impact, Maximum Output Sustainable Agriculture (MIMOSA) programme aims to minimise climate impact and make crops more resilient to climate change.

D'Arta is a global player in the development, processing and commercialisation of fresh frozen products including vegetables, fruit and ready-made dishes. Based in West Flanders, which is a European production hub for frozen vegetables, it has production plants in Portugal and the UK. It produces for private label customers and mainly supplies the food service, retail and food industries.

Virto Group is one of the largest frozen vegetable companies in Spain and one of the most important in Europe. The company operates eight specialty centres in Spain and has an international presence in the UK, France, Germany, the US, Portugal and Brazil. The group offers a wide product range that extends beyond frozen vegetables to include pulses, fruits, vegetable mixes, rice, pasta, cereals and vegetable-based dishes.

Non-EU companies

The main non-EU competitors are based in China and many specialise in frozen mushrooms. They include S.F.I Asia, Fortune Foods, Baixing, Newfarm Food, Longhai Yide Industry and Trade, Frostar, Beswor Foods and Three People (Xiamen) International. Egypt is another non-EU hub for frozen vegetable production. Some of its main companies are Deluxe, EGCT Frozen, AlfaFrost, Frosty Foods and GIVREX.

Fortune Foods produces a range of IQF frozen vegetables, fruit and mushrooms. It is located in China's Hebei province and has a production capacity of 10,000 tonnes per year and an own lab to guarantee microbial control. The EU is the largest export market for Fortune Foods, with Germany, Italy, France and Spain being the biggest importers.

S.F.I Asia is a Chinese processor and trader of frozen vegetables, fruit and fish. It was established in 2003 as a joint venture of Superior Foods and Foodimpex.

Deluxe is a young Egyptian company specialised in high-quality IQF fruit and vegetables. Its frozen vegetables offering includes almost 20 different products.

AlfaFrost is one of the biggest producers of IQF fruit and vegetables in Egypt. It exports to almost all parts of the world, with a special focus on Europe.

Tips:

Find information about trading in the frozen vegetable industry on the websites of leading producers such as the Belgian vegetable processing sector union (Vegebe) or the Spanish Association of Manufacturers of Frozen Vegetables (Asevec).

Present your offering on B2B frozen food websites such as FrozenB2B.

Which products are you competing with?

Convenience and year-round availability are major drivers of frozen vegetable consumption. While frozen vegetables have unique selling points in terms of availability with added seasonings, pre-portioned and/or pre-roasted, they compete with fresh vegetables, which consumers see as unprocessed and rich in nutrients. Fresh vegetable prices have increased by on average 2% per year over the past decade and are expected to go up even more due to the war in Ukraine.

Canned and fermented vegetables generally have similar nutritional profiles to fresh vegetables, particularly in terms of mineral and fibre content. Fermented vegetables also have a range of health benefits thanks to their probiotic qualities. One disadvantage of fermented foods is that they have a completely different flavour profile from fresh and frozen vegetables.

Tip:

Use the unique characteristics of frozen vegetables to position them against fresh options. For example: year-round availability, range of seasonings, lower food waste, sustainable production and harvesting, table-ready, GMO-free, no added preservatives, no defrosting or thawing needed.

4. What are the prices for frozen vegetables on the European market?

The prices of frozen vegetables vary depending on the country of origin, type of vegetable, grade and quality, retail chain brand, production cost, climatic factors and other global economic factors. Below are average prices for some frozen vegetable categories in Europe:

Type of vegetable	Average €/100 kg net weight

Frozen carrots	€59.03
Frozen asparagus	€332.97
Frozen cauliflower	€89.29
Frozen mushrooms	€213.79
Frozen onion	€60.93
Frozen sweet peppers	€66.36

These are average prices of some sample categories of vegetables in different European countries in 2020. Prices fluctuated considerably between 2019 and 2020. Actual prices may vary due to other added costs such as logistics between European countries, specific freezing process, packaging, marketing and profit margins. Efficiency savings in operating, transportation or distribution costs can give suppliers a competitive advantage. Government support and partnerships can also boost productivity and reduce costs.

Tip:

- Subscribe to IHS Markit, one of the most respected market information service providers for the food sector. Subscribers have access to frozen vegetable price overviews, which are published and updated regularly.

This study was carried out on behalf of CBI by M-Brain.