

# final report

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## Global veal market outlook

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## Executive summary

The global veal market is a small, but important, niche of some 1.2 mio t cwe of the 69 mio t cwe total beef and veal sector, of which is accounts for a minor share of <2%. However, it is a difficult market to analyse given the widespread range of definitions, and production practices and a general lack of robust data.

This project aimed to provide an update on the global veal market and identify opportunities which may exists for the Australia veal sector. Specifically this report provides insights on the follow:

- Size and segmentation of the global veal market
- Current and future veal demand in key countries
- Profile of key competitors
- Strengths and weaknesses of the Australian veal sector, as well as potential opportunities.

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# 1 Acronyms

<b>AU</b>	Australia
<b>BE</b>	Belgium
<b>Bf</b>	Beef & veal
<b>CA</b>	Canada
<b>CN</b>	China
<b>cwe</b>	Carcass weight equivalent
<b>DE</b>	Germany
<b>EG</b>	Egypt
<b>ES</b>	Spain
<b>EU</b>	European Union
<b>FR</b>	France
<b>IT</b>	Italy
<b>JP</b>	Japan
<b>lw</b>	Liveweight
<b>MS</b>	Member State(s) (of the EU)
<b>NL</b>	Netherlands
<b>NZ</b>	New Zealand
<b>Pk</b>	Pork
<b>pw</b>	Product weight
<b>Py</b>	Poultrymeat
<b>SA</b>	Saudi Arabia
<b>SG</b>	Singapore
<b>Sh</b>	Sheep & goat meat
<b>t</b>	Tonnes
<b>US</b>	United States of America

## 2 Introduction

This is a summary of a more detailed report, produced by Gira on behalf of MLA to illuminate the somewhat opaque world veal market. Analysis of the veal market segment and making comparisons between different countries is difficult given a widespread range of definitions and production practices and a lack of specific data individualised from total beef & veal, especially for trade flow assessments.

### 2.1 Definitions

There is no globally accepted definition for veal; even worse, some countries do not have a veal production and therefore no definition for the product (e.g. CN and SG).

Table 1 below summarises the definitions found in the present study target countries<sup>1</sup>. There are different criteria for defining veal-producing calves:

- An age limit, measured through dentition (despite its uncertainties) or with a reliable birth date (as provided by the EU compulsory individual identification system);
- A liveweight limit;
- A carcass weight limit.

**Table 1. Veal definitions used in the target countries**

		Age limit		Liveweight limit	Carcass weight limit	Comment
		How much?	Measured by?			
EU	Veal (V)	<8 months	Birth date (passport)			V calf: essentially milk-fed Ambiguities in names due to translations in the different EU languages
	Young cattle (Z)	>8 but <12 months	Birth date (passport)			Z calf: essentially grass- and/or grain-fed
US	Veal	<9 months	?	<340kg		
CA	Veal				<180kg	
AU	Bobby calf	<30 days		<80kg		Pure dairy or beef x dairy calves fed only milk replacer
	Vealer				<150kg	
NZ	Bobby calf	<2 weeks			<30kg	
	Vealer				<160kg	
EG	Veal	<4 months		<70kg		Theoretical definition only
SA	Veal	<8 months				Commercial rather than official definition
AE	Veal					
CN	Veal	<12 months	Export certification			Only for imports No definition for domestic production
JP	Veal	<12 months	?			
SG	Veal					No official definition Commercial labelling only

Source: Gira compilations

<sup>1</sup> European Union, United States, Canada, Australia, New Zealand, Egypt, Saudi Arabia, United Arab Emirates, China, Japan and Singapore

In the absence of official definition, there may be commercial definitions proposed by operators.

In addition to the above-listed countries, Gira also found a veal definition in Uruguay based on what cannot be classified as beef from a young animal (the *novillito* category is based on the absence of adult teeth, a hot carcass  $\geq 170$ kg and minimum conformation and fat content criteria), which means that all carcasses  $< 170$ kg are classified as veal, but also those heavier than this minimum weight but not reaching the minimum conformation and fat content criteria...

### 2.1.1 Production practices

To make things more complex, there is across the world a wide heterogeneity of production types:

- Milk-fed veal
  - Bobby veal
  - 4-6 months milk-fed veal (EU-type)
- Grain-fed veal
  - Young rosé veal (< 8 months)
  - Young cattle veal (8-12 months).

### 2.1.2 Data availability

Production data are obviously inexistent if there is no official definition of the product.

In addition, even where such an official definition exists, international trade data usually do not differentiate veal from beef. This is especially the case in the EU, even though it is the biggest player in the world veal market. Where such international trade data is missing, it is impossible to calculate consumption with the balance method.

Where specific veal trade data exist, one needs to go at detailed custom code levels 8- or even 10-digit level) to get them, and these are not always easily accessible. In addition, reliability is another issue and Gira has repeatedly found inconsistencies in the trade flows recorded by countries such as AU, US and CA.

Given the heterogeneity in definitions and production types, Gira considers there is no such thing as a real veal market. We will nevertheless use this expression throughout the present report but the reader will have to bear those differences in mind. Gira thus estimates the total 'global veal market' at around 1.2 mio t.

It is therefore a limited market which only represents a small niche in the total beef & veal sector: while world beef & veal output amounts to some 69 mio t cwe in 2019, all forms of veal added together only account for less than 2% of that amount.

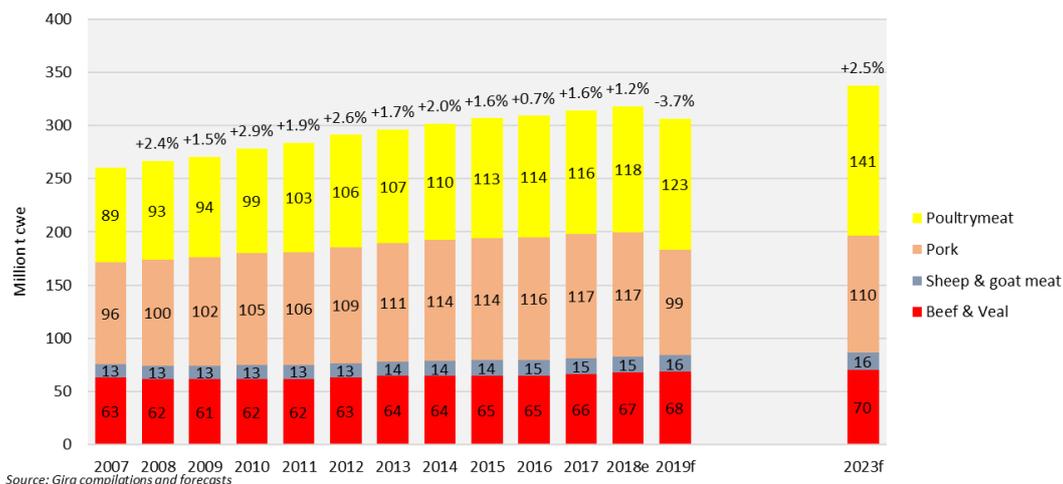
### 3 Global meat market outlook

#### 3.1 World meat consumption

World meat consumption<sup>2</sup> increased regularly over the past decade, registering a 1.8% CAGR from 2007 to 2018, with a slightly more moderate growth (+1.2%) in 2018 up to some 318 mio t cwe.

Species overviews are as follows:

- Beef & veal recorded the smallest growth rate at a mere 0.6% p.a. and thus lost shares of the meat basket (24% to 21%);
- Sheep and goat meat consumption grew by 1.7% p.a., reflecting larger supplies in CN, IN, MENA and SSA, and maintained its share in total consumption;
- Pork had a growth rate similar to that of total meat, +1.8% given strong developments in Northern America and China especially (excluding CN, world consumption recorded a significantly weaker growth, +1.3%). Over the past decade, pork held its share of the world meat basket at 37%;
- Py consumption enjoyed a sharply higher growth rate (+2.7% p.a.), with a broad base of growth reflecting supply changes and attractive prices. The share of poultry meat in the world meat basket grew from 34% in 2007 to 37% in 2018.



**Figure 1. Global meat consumption developments, 2007-2019f, 2023f**

In August 2018, African swine fever (ASF), which had been extending throughout Europe since 2007, but with minor impacts on production levels, was diagnosed for the first time in China. From the first outbreaks, it expanded quickly in the whole of the country and, from February 2019 onwards was diagnosed in several other Asian countries: Mongolia, Vietnam, Cambodia, North Korea, Laos, Myanmar, Philippines, South Korea, and Timor Leste. Many of these countries have high pig densities and an essentially backyard farming, making them extremely vulnerable to the disease.

<sup>2</sup> For the countries for which Gira records data (accounting for more than 95% of the world total according to FAO), calculated through the balance method, i.e. rather a domestic disappearance, or apparent consumption than a real consumption as food item.

The initial impact on production levels and consumption have been limited due to anticipated slaughtering's, breeding herd liquidation and a likely demand shift towards other species, but the full impact is now being felt in 2019, hence Gira's initial estimate for 2019 world consumption down by a sharp -3.7% (i.e. a drop of close to 12 mio t cwe):

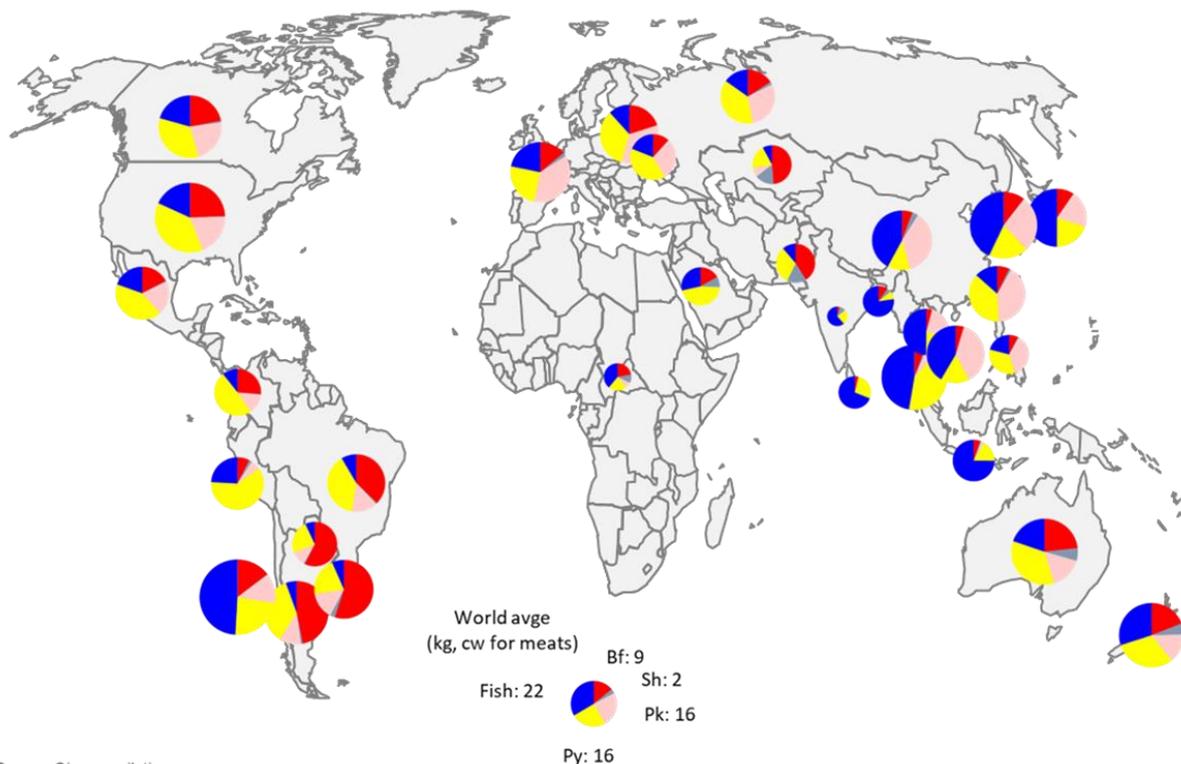
- Pork consumption is estimated to fall by some 15% (-17 to 18 mio t cwe);
- Both beef & veal and sheepmeat consumption are estimated to grow by 1.3%
- Poultry meat consumption should be rising by some 4% (close to + 5 mio t).

Through 2025, assuming no other serious animal health issue (and especially no propagation of African swine fever in North and/or South America), it is expected that pork production and consumption will recover in the strategically important China and, to a lesser extent, in some other Asian countries, however without getting back to 2018 levels as some losses to poultry meat are anticipated to be definitive.

Gira believes the share of beef & veal in the meat basket will continue to slowly decline and, in 2025, poultry meat consumption should be twice the volumes of beef consumption.

### 3.2 Beef and veal consumption

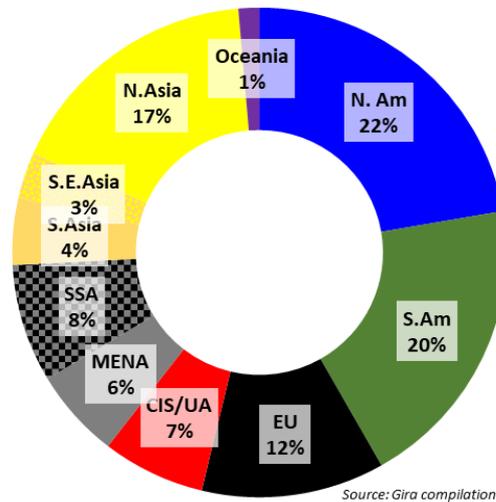
While globally beef & veal account for 21% of all meats consumed, there are obviously large differences in the meat basket composition across the world, the differences being even more striking when including fish in the balance as shown on the graph below.



**Figure 2. Per capita animal source protein consumption, 2016-18 average**

Beef & veal account for an especially large share of the meat diet in the big producing countries of South Americas (BR, AR, UY, PY and CL to a lesser extent), and remains a strong component of the

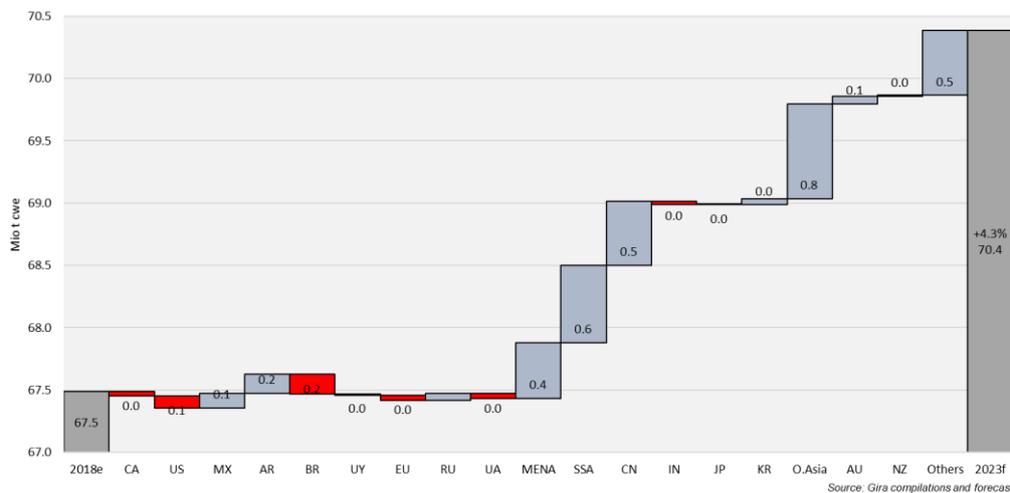
diet in North America, Oceania (AU and NZ), PK and the ‘other CIS countries’ (i.e. not including RU and BY). That share is lower in the EU and RU, sub Saharan Africa and MENA, as well as in most Asian countries.



**Figure 3. Total beef and veal consumption per region, 2018**

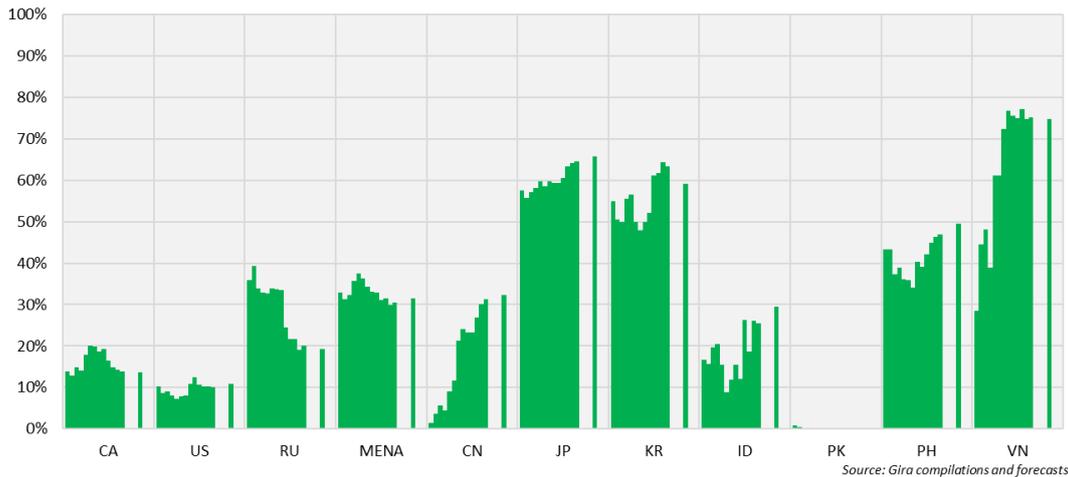
The December 2018 Gira Meat Club concluded that Asian countries will account for the largest growth in beef & veal consumption over the next few years as indicated in the graph below, CN, PK, ID, VN and PH being the countries which should experience the largest growth.

The other two areas where a large increase is expected are MENA and SSA.



**Figure 4. Forecast changes in beef and veal total consumption, 2018 through 2023**

Domestic production will obviously account for a large share of these increases but there will be a rising demand for imports in many of these countries in order to meet consumer demand. Imports will be a key component of total supplies in VN, JP, KR, PH and to a lesser extent but still quite significant CN and ID.



In many countries, however, production developments will be constrained by climatic issues as well as by more and more society pressures (animal welfare and above all sustainability issues). Production is nevertheless anticipated to record further strong growth in many developing countries, including IN and PK.

## 4 Global veal market overview

### 4.1 Different types of 'veal'

The EU is by far the leading veal producer at global level but there are several traditions of different types of veal production across the Union. The present definition used in the EU is thus the result of long negotiations between Member States. It applies to all bovine meat from animals <12 months, whether produced domestically or imported, and establishes two categories:

- Category V: < 8 months. Two thirds of EU production is made of such V calves, i.e. veal *per se*; most of it is milk-fed, although there is a rising trend to finish these animals with more cereals, producing what is known as 'rosé veal'. Gira estimates the proportion of milk-fed veal production at ~80%;
- Category Z: 8-12 months. The other third is made of such Z calves. Having been grain-fed these animals produce a soft and tender meat, much lighter than actual beef, and unfortunately also frequently referred to as 'rosé veal', hence confusion.

However, despite this 2007 regulation (entered into force on July 1<sup>st</sup>, 2008), there remain many ambiguities with the sales descriptions used in each language/MS. Gira considered as veal the meat from V calves (i.e. using the British sales description), but provides elements on Z calf production as well for the clarity of the picture and to facilitate comparisons with other countries. The major EU Z calf producer is Spain.

Gira has attempted to list and quantify the different categories of veal productions:

- Bobby (or 'bob') veal is derived from very young calves (up to 1-3 weeks), with a very light weight (up to 70kg). This type of production is essentially a way to dispose of small male calves from the dairy herd for which it is estimated rearing and fattening into a proper veal carcass is not worthwhile. Many calves end-up that way in the US and New Zealand, as well as, to a

lesser extent, in Australia and Canada. Meat from bobby calves is predominantly used in processing into lower value products such as mince, pies and burgers and into pet food. Gira estimates bobby veal production to account for ~5-8% of world production.

- Milk-fed veal (also called ‘white veal’), for those animals reared on a feed programme mainly using milk-based feeds, though now increasingly using partial replacement with soy proteins.

Veal calves enter the feeding system at ~25kg (5-7days) and are typically slaughtered at 230-250kg lw; finishing system varies according to regional traditions:

- The fattening cycle lasts from 20-22 weeks in France and calves are slaughtered at a final live weight of 200-220 kg;
- In Italy and the Netherlands, veal calves are slaughtered at a heavier live weight of 260-290kg and the fattening period is prolonged up to 26-28 weeks.
- Grain-fed veal (also frequently called ‘rosé veal’), for those reared on a feed programme using milk-based feeds for the first 6 weeks only and then given a whole grain and protein supplemented diet. Besides the EU Z calves, there is such a production in North America (Canada and US), as well as in Australia (where they are called vealers), and in China, Japan, Saudi Arabia and the UAE, the total accounting for 3-6% of world production
- In some cases, and countries, these grain-fed veal-producing animals may also be grazing.

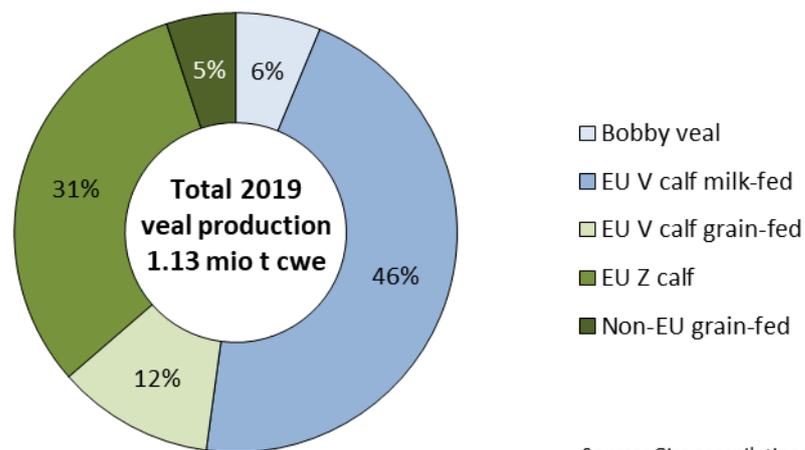
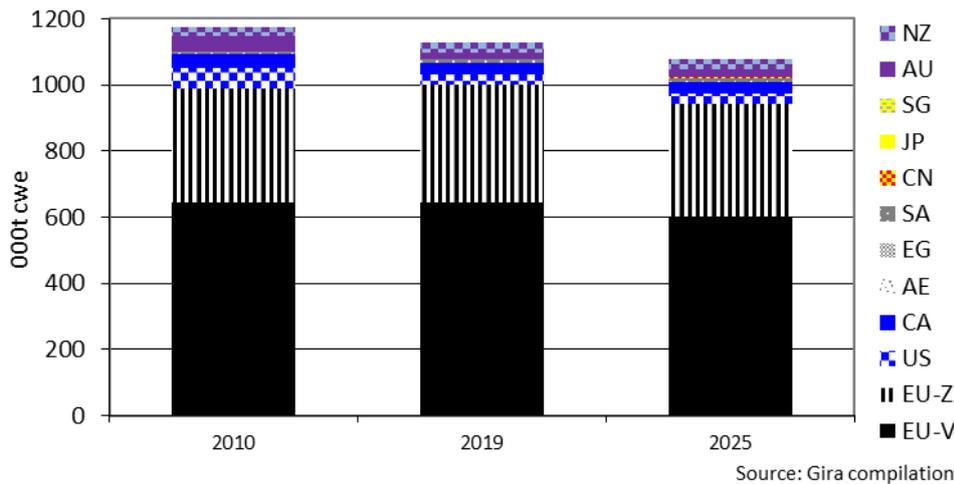


Figure 6. Estimated world veal production per type, 2019e

## 4.2 The EU dominates world ‘veal’ production

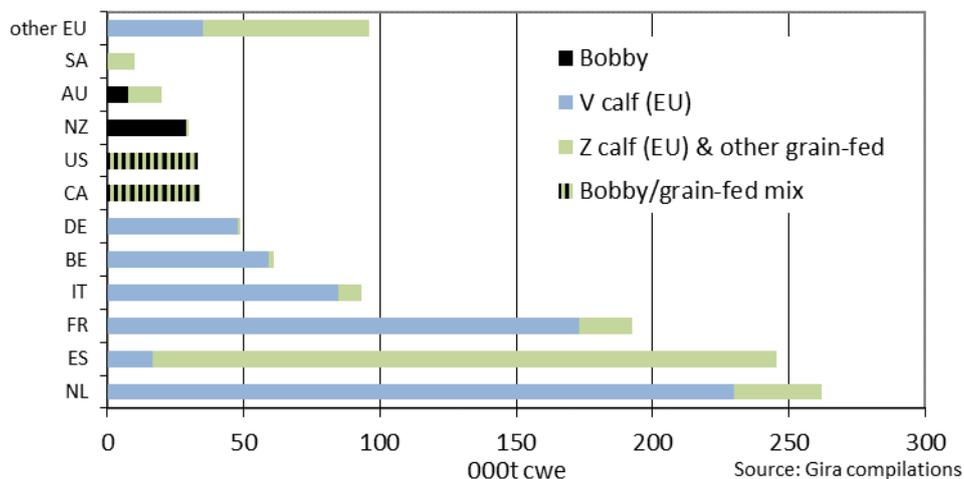
The EU is by far the dominant player in the global veal market, accounting for 90% of the total production recorded in this study (when adding V and Z calves). This dominance has actually increased as the percentage was only 84% in 2010; this is due to a decline in output in both North America and in Australia rather than to an increase in the EU.



**Figure 7. Leading global veal producers, 2010-2019-2025f**

In addition to the countries targeted in the present report, Argentina up to now recorded significant *ternero/ternera* (which translates into male/female calf<sup>3</sup>) production levels, close to 600kt cwe in 2018. According to slaughtering statistics, these are animals of a carcass weight slightly below 180kg (by law, it is forbidden to slaughter cattle weighing less than 280kg live (154kg average carcass weight) since January 2010). Gira however assumed these animals are >12 months old and cannot be compared to the productions detailed in the present report, an opinion comforted by the abandonment of the *ternero/ternera* category from Jan 1<sup>st</sup>, 2019. The above graph therefore does not include such South American production even though it is called veal.

Subdividing the EU in its individual Member States, the Netherlands is the world leading veal producing country, with production exceeding 260kt cwe in 2019; Spain follows immediately behind (245kt in 2019), but the two countries are focusing on different production systems: 88% of Dutch production is V calves, while this percentage is <10% in Spain.

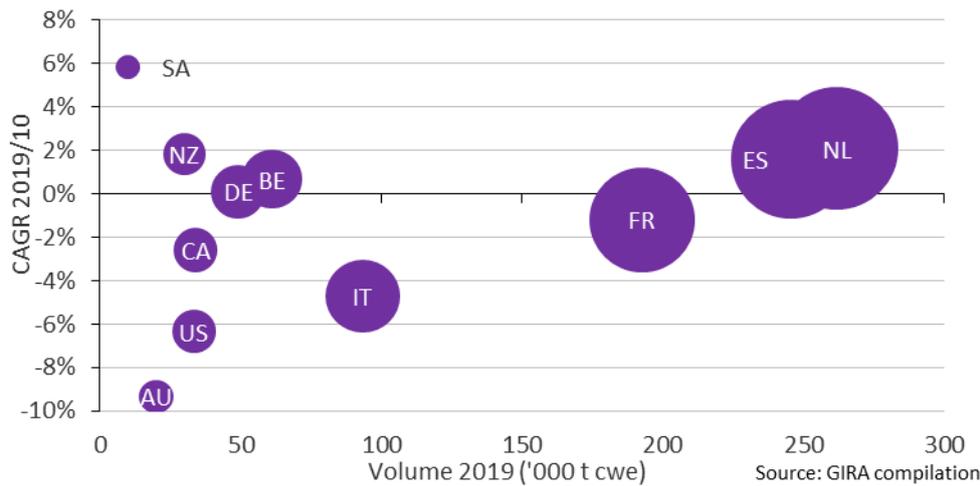


<sup>3</sup> In South America, *ternero/ternera* only refers to the live animal, not to a production type as *ternera* is in Spain (Z calf).

**Figure 8. Leading global veal producers per type of production, 2019**

In the EU as a whole, 65% of total production is from V calves, a proportion which did not change much since 2010.

Total veal production in the targeted countries has slowly declined from 2010 to 2019 (-0.4% CAGR), mainly due to output reductions in North America and in Australia, as total EU production was stable over the period. Within the EU however, there are some clear divergence, with reductions in France and Italy offset by increases in the Netherlands and in Spain.

**Figure 9. Leading global veal producers: 2019 volumes and 2019/10 CAGR**

### 4.3 Dutch veal production, the continuing EU success story

After years of consolidation, there are now 3 key Dutch players but VanDrie is by far the dominant force, on both the EU markets and in international trade.

VanDrie is the perfect example of a fully vertically integrated production model, giving it control over the whole chain, efficiency and productivity gains. Through a mix of organic growth and M&As, they have contracts with calf producers combined with their own feed plants, abattoirs, processing plants, transport and marketing division, not only in the Netherlands but in all the main EU veal markets. The company has a strategic marketing focused on exports, primarily to other EU markets but with sufficient surplus to target 3<sup>rd</sup> countries.

The Dutch veal industry has clearly out-performed and/or absorbed its EU competitors as reflected in the above growth graph. The main features are as follows:

- Low feed costs and high, specialised quality feed from own local dairy processing plants;
- High level of technical performance;
- Scale-efficient loose-housed farms;
- Specialist processors, with dedicated marketing;
- High level of coordination both horizontally and vertically in the chain;
- Proactive response to challenges: modernisation and improvement of industry structure and animal welfare.

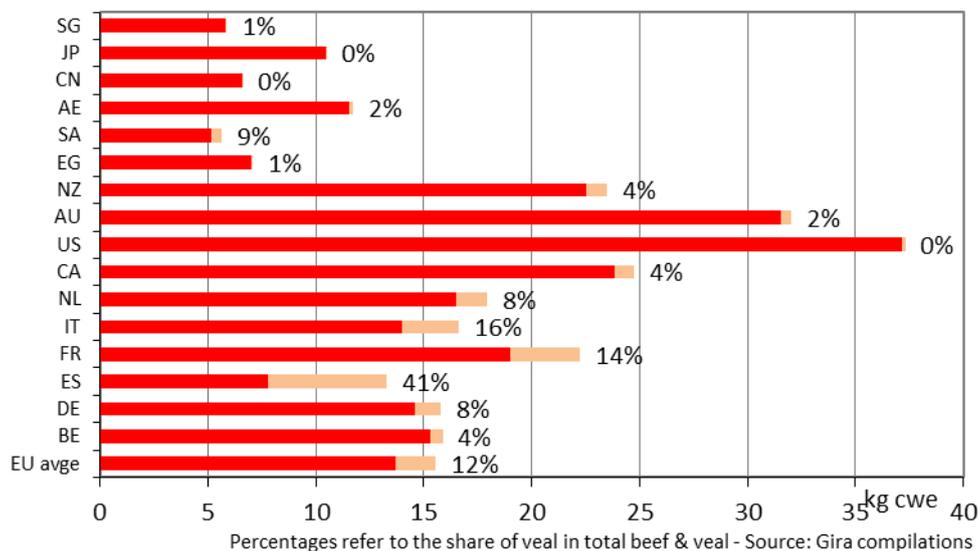
The search for scale efficiency (at all levels of the chain) lead to production cost control and technical leadership; beyond meat production, the veal industry also strongly focuses on 5th quarter valorisation, with the advantages of volumes.

#### 4.4 Veal consumption, mostly in the EU

According to Gira estimates, 87% of world consumption of all categories of veal (including from Z calves in the EU) occurs within the EU – and 75% of EU consumption, i.e. 2/3 of the world market, occurs in 4 markets only: Spain, France, Italy and Germany.

Veal consumption in all other markets remains a niche.

The veal share of total beef & veal consumption levels varies widely among the countries studied, being <1% in the US, China and Japan, and >10% only in Spain, France and Italy (as well as for the EU as a whole).

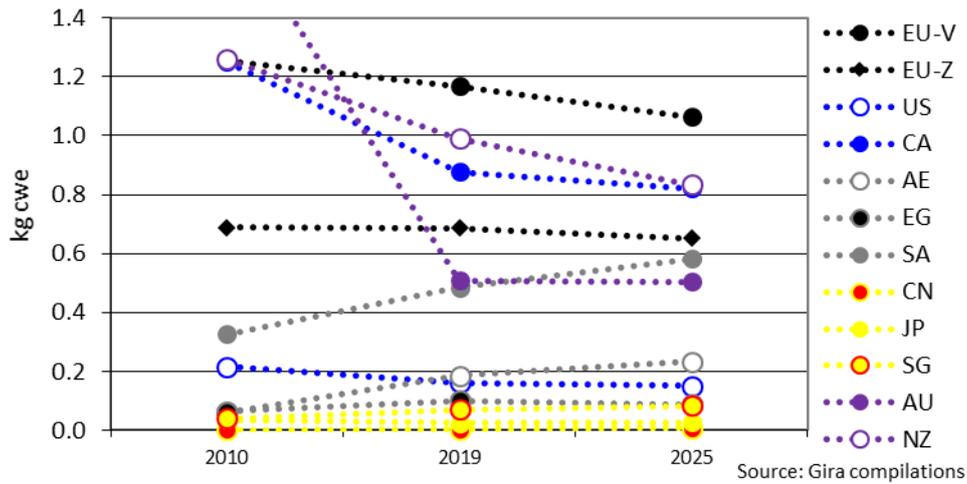


**Figure 10. Per capita beef and veal consumption, targeted countries, 2019e**

In all targeted countries, veal is a minor part of the meat basket. Per capita consumption levels are small. In 2019, it only exceeds 2kg in Spain, France and Italy only, with an average EU figure of 1.85kg. New Zealand is just below the 1kg threshold, and Canada and Australia are the only other countries where the level is > 0.5kg.

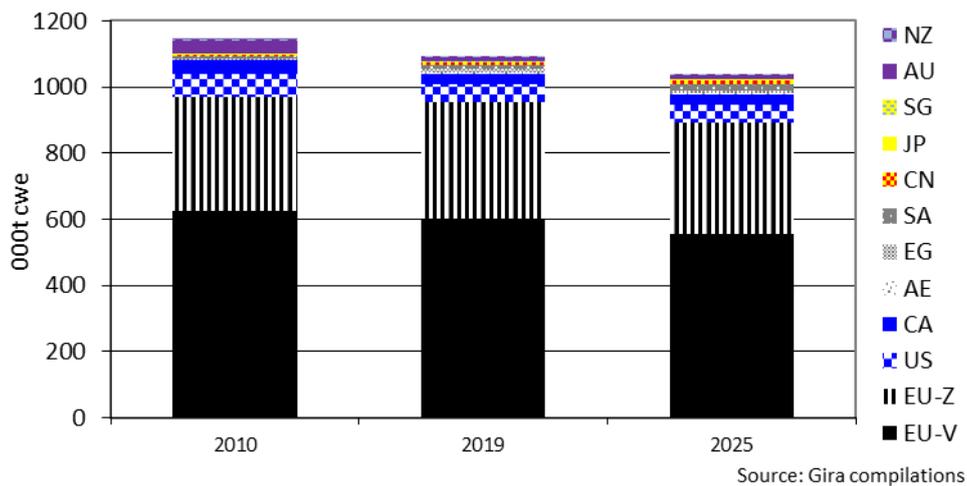
In addition, per capita consumption levels have been declining in all markets where there are reasonable data, with an especially sharp fall deducted from production and trade data in Australia. In the smaller markets, where Gira had to rely on industry information to assess consumption, growth was inferred from the development of total beef & veal demand, but that may be too optimistic. Growth was also assumed in Saudi Arabia and in the UAE on the basis of dairy production development and hence a possible rising domestic veal production.

Similar trends are expected through 2025, except in Australia where Gira anticipates some stabilisation.



**Figure 11. Per capita veal consumption in the leading veal producers: 2010-2019-2025f**

Given these per capita consumption levels, the breakdown of global consumption is very much like the picture for production, with the EU accounting for 87% of total consumption in 2019.



**Figure 12. Total veal consumption in the leading veal producers: 2010-2019-2025f**

Gira cannot be really optimistic for future trends, with consumption anticipated to further decline in all of the largest markets:

- EU markets are under pressure and the industry would be happy if present consumption levels would just hold on!
- Other traditional markets are also seeing declining consumption levels.
- The smaller Asian and the Middle-Eastern markets do have a potential to increase, but that will require significant marketing activity from exporters

There are however opportunities to develop a veal market in the smaller Asian and Middle-Eastern countries targeted in the present study:

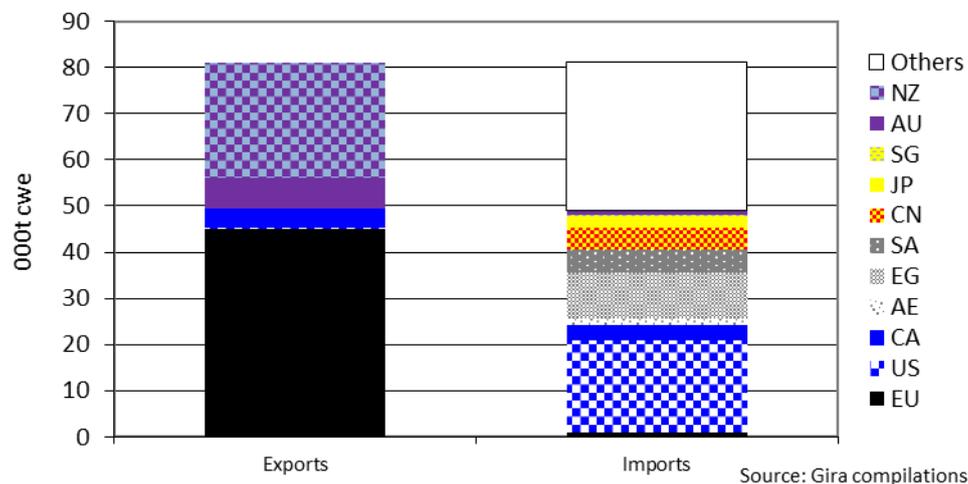
- Population and disposable income levels are growing, with expanding niche market segments;
- As total beef & veal demand increases, there should be a pull effect on veal as well.

However, this is not an easy task:

- Relative price is always a challenge for veal, the 2nd most expensive meat after lamb.
- Veal production generally lacks the scale economies of the other meats;
- In addition, marketing is also a challenge:
  - In none of those ‘promising’ markets is there anything as a veal culture or tradition, so there is nothing to build-on, to consolidate or reinforce;
  - Instead, the veal market has to be invented and built from scratch...
  - Finally, foodservice presently dominates the sales channels; it is a notoriously fragmented sector, difficult to overtly harness

#### 4.5 Very small volumes in international trade

According to Gira compilations, international trade in veal amounts to less than 100kt p.a. (not including intra-EU trade). Looking at exporters (EU, NZ, AU and CA) the total amounts to ~80kt in 2019, but imports into the countries surveyed only reach ~50kt, which would mean there are another 30kt going to other markets in Asia (HK, ID, TW...), the Pacific (French Polynesia, Papua New Guinea...) and other countries in the Middle East.



**Figure 13. Key veal import and export volumes, 2019**

According to the present study, in 2019 the largest exporter is the EU (and, within the Union, the Netherlands essentially), with trade to third countries reaching 40-50kt cwe, followed by New Zealand (~25kt). Australia and Canada are far behind with exported volumes well below 10kt.

As far as imports are concerned, the biggest market remains the US, with some 20kt estimated in 2019, followed by Egypt (~10kt), Saudi Arabia (5kt), China (4.5kt), Canada and Japan (~3kt each).

International trade in veal thus would account for some 4 to 7% of total production (excluding intra-EU trade), which is less than the percentage found for any meat, and far less than the 17% reached in total beef & veal.

## 5 Key drivers and brakes for veal: demand and supply

### 5.1 Demand dynamics

#### 5.1.1 A traditional demand... in some countries only

Veal is not a common meat and is only really appreciated in few countries:

- In the EU, France, Italy and Germany account for 80% of total veal consumption (V calves), while Spain accounts for 2/3 of total Z calf consumption. In these countries there is a true culture of veal consumption, with many world-renowned veal recipes;
- In the other countries, veal is mostly consumed by communities of European origin maintaining cultivating their traditions (e.g. in Canada) or by EU expatriates, in which case essentially in the catering, fine French and/or Italian dining segment.

Consumption levels are very limited in the countries where there is no veal tradition. In these countries, on the contrary, veal lacks a proper image:

- The quality reference in the beef & veal sector is often occupied by highly marbled beef (Angus or even Wagyu), while veal is lean;
- Even worse, in some Asian countries (China notably), the visual characteristics of veal bring confusion as they are closer to pork than to beef.

However, in MENA and other Muslim markets, there is a preference for meat from younger animals due to their softer taste and texture. Beef is therefore often from young animals, sometimes marketed as veal...!

#### 5.1.2 Traditions are fading

In countries where there is a significant level of consumption, traditional modes of eating and veal consumption are under pressure from a range of socio-cultural factors such as an aging population (people buying meat tend to be older than the average shopper), smaller families, the decline in domestic cooking skill and the growth of convenience foods.

In the EU, the industry is making lots of promotional efforts (including with the financial support of the EU Commission) to encourage veal consumption, notably among young consumers.

#### 5.1.3 An expensive meat

Retail prices are usually lacking for a thorough analysis but veal is an expensive meat to produce; in the EU, lamb is the only meat that has a higher producer price.

The almost universal trend to reduce food expenditures is not favourable to expensive meats.

Even in the catering sector, many of our interviewees mentioned the price factor, acting against the inclusion of veal-based recipes in their menus. The same is true for the incorporation of veal as an ingredient in processed and convenience foods.

#### 5.1.4 Especially targeted by activists

Veal calf rearing methods (individual crates, time spent with mother before weaning, feed protocols, etc.) and transport conditions and duration have always been among the top priorities of animal

welfare groups. That many of these practices have been vastly improved does often not stop the animal welfare campaigns against veal.

In addition, sanitary conditions & practices have also been repeatedly attacked, starting with the use of growth hormones (issue dating back to the 1970/80, but still in the mind of many Europeans) and shifting now to the use of antibiotics and its relationship to antimicrobial resistance.

Even though the veal industry has adapted in order to meet society demands and new regulation constraints, the image of the product remains fragile.

## 5.2 Supply dynamics

### 5.2.1 Ever-rising animal welfare requirements

Animal welfare organisations continue to advocate stricter rules, claiming both physical and mental well-being, as well as natural living conditions are all compromised by periods of confinement in veal crates (banned within the EU, but still used in some other countries, notably in many US states) or barren environments (slatted floors with no requirement for bedding after the first two weeks, little space/animal), malnutrition (especially in the white veal production systems where they claim EU minimum iron requirements are too low for full health and robustness) and distress and long-term social development problems caused by early separation from their mothers. In addition, the transport issue remains a hot topic as animal welfare organisations oppose any 'long distance' journeys.

In the EU, Council Directive 2008/119/EC prohibits the use of confined individual pens after the age of eight weeks. The Directive sets out minimum dimensions for individual pens and for calves kept in groups. Calves are not to be tethered (except under very specific circumstances) and must be fed according to their physiological needs; in particular their food must contain sufficient iron (to avoid anaemia) and a minimum daily ration and fibre food must be provided.

A 2012 EFSA scientific opinion on the intensive calf farming systems concluded among other things that:

- Further research is needed on possible indicators of anaemia in order to safeguard the welfare of veal calves restricted in their dietary iron supply;
- Treatment with supplemental iron should take place as much as possible at the level of the individual animal rather than the herd;
- More research should be focused on pen design to improve calf comfort and achieve environmental enrichment;
- Group housing of calves results in better welfare for this social species, except when there is significant risk of enteric or respiratory infectious diseases.
- Calves reared for veal production should be neither disbudded nor castrated.

While legislation is moving to meet society concerns, downstream operator (retailers mainly) demands are normally ahead of it, imposing their production criteria.

The usual pattern is that the EU normally sets the example and the rest of the world slowly follows.

Gira believes there will be more constraints in the future, the major issues focusing on:

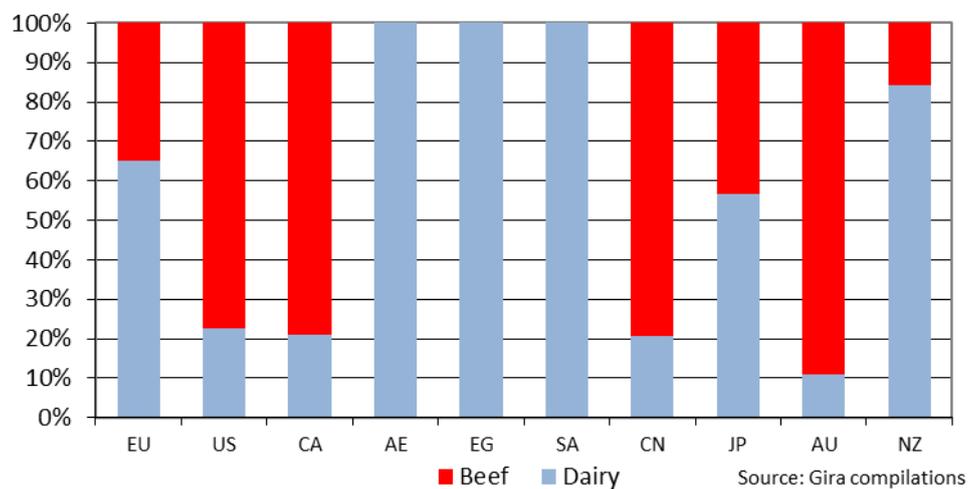
- Slatted floors;
- Densities in the pens;
- Higher haemoglobin level and monitoring;
- Time spent with mother before weaning;
- Antimicrobial usage.

### 5.2.2 Veal calf supply sources in selected countries

Calves reared for veal production are typically dairy-bred.

The EU has by far the largest dairy herd among the countries targeted, with ~23 mio dairy cows in 2019. That is more than twice the number in the US (9.3 mio) and more than 4 times the other significant dairy cow herds such as in New Zealand (4.9 mio), Egypt (4.4 mio) and China (4.2 mio).

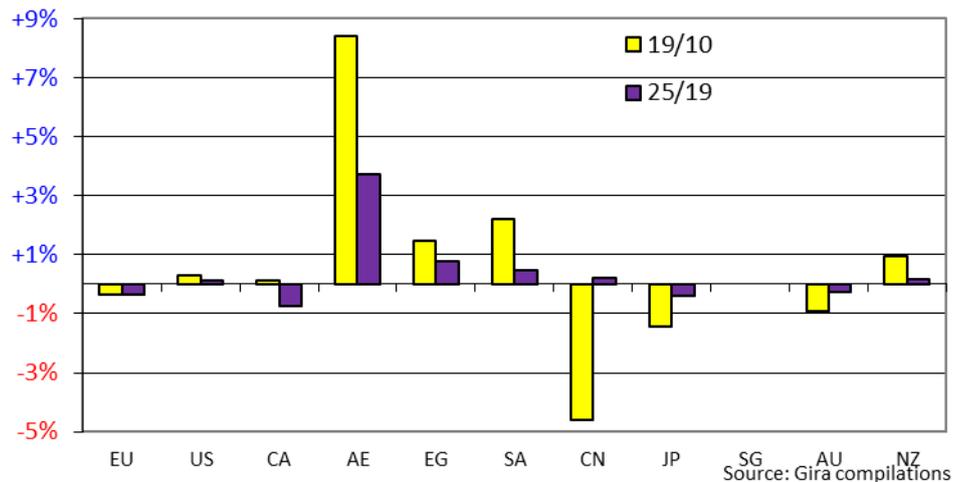
Dairy breeds dominate the herds in the EU and New Zealand, as well as in the Middle East, but beef breeds are by far predominant in North and South America as well as in Australia and in China.



**Figure 14. Dairy/beef cow split, targeted countries, 2019**

Looking at dairy cow number developments, apart from the strong growth recorded in the small dairy cow herds of the UAE and Saudi Arabia, the herds have been slowly increasing in Egypt and New Zealand and rather stable in the US and Canada. On the other hand, the EU dairy herd has been stable to slowly declining since 2010 (a sharper decline was recorded in the 2000s) and sharper decreases were recorded in Australia, Japan and above all China. The decline is mainly explained by ever-increasing milk yields and productivity per cow.

In the future, given a rather positive outlook for world dairy markets, Gira only expects minor changes in dairy cow numbers aside from an anticipated further growth in the UAE.



**Figure 15. Changes in dairy cow numbers, targeted countries, 19/10 & 25/19 CAGRs**

Within the EU, the two main producers, the Netherlands and France will see herd declines (CAGRs - 0.3% and -0.6% respectively) due to a combination of higher dairy yields, reducing the number of cows needed to produce a given amount of milk, industry caution given weak milk prices and volatility, aging farmers abandoning their activity and environmental pressures limiting the density of livestock farming.

The result is that the veal industry often has to secure its calf sourcing from further afield, hence the ~1.5 mio head of calves <80kg moving from one EU MS to the other every year (and the animal welfare NGO critics). The Netherlands is the main importer (for V calf production), followed by Spain (for Z calf and beef production), while Germany is the largest exporter.

Further complicating veal calf sourcing despite the apparent stability in total cow numbers, male veal calf numbers are likely to diminish given a larger use of sexed semen in dairy production; pure-bred dairy offspring will be targeting females; that leads to more crossbred male calves ... which are also attractive to the beef production system, in competition to their use for veal production.

Finally, the type of dairy breed is also making a difference. Industry sources made it very clear that the smaller dairy cow formats used in New Zealand (especially the Jersey cows), produce calves which are of little value and cannot be fattened profitably into veal, hence the large production of bobby calves.

### 5.2.3 Feed costs

Feed costs for milk-fed veal are very closely linked to whey powder and SMP price, themselves influenced by global commodity market supply and demand.

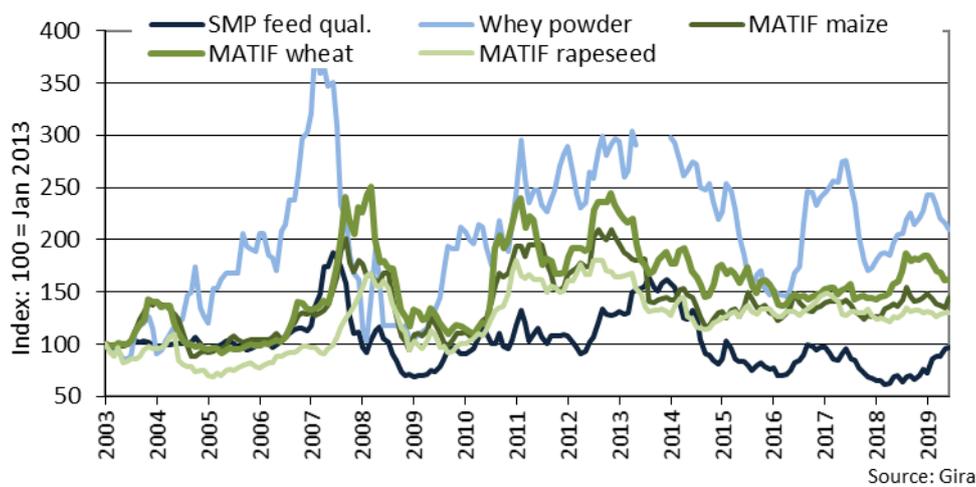
Rosé veal costs on the other hand are influenced by grain prices.

The following graph depicts indices of EU feed cost ingredients since January 2003

- The trends have been rising for all ingredients except SMP (slightly declining trend over the period);

- Volatility has been the rule for all ingredients looked at, but more for dairy than for plant ingredients;
- The average indices since January 2010 were of:
  - 100 for SMP;
  - 228 for whey powder as ingredient demand for a whole series of whey-based products has sharply increased;
  - 150 for maize;
  - 172 for wheat;
  - 139 for rapeseed.

Depending on the period, the comparative profitability of white vs. grain-fed veal production may have favoured one or the other of these two productions systems.



**Figure 16. Indices of feed ingredient cost, EU, Jan2003-June2019**