

2016

# Consumption Census 2015



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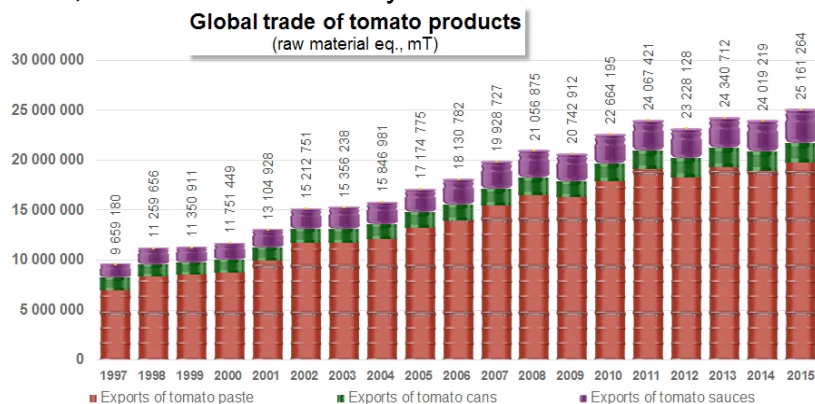
## Worldwide consumption census: 38 million mT in 2015

±1 kg of paste per year and per person, but growth has slowed

### Worldwide trade

Beyond the quantities that are produced and processed locally, worldwide trade is an essential component of consumption, both in terms of its development and its universal reach. Last year, product shipments amounted to 3.2 million metric tonnes (mT) of pastes (all quality grades and conditionings included), 1.6 million tonnes of canned products (peeled, chopped, etc.) and 1.4 million tonnes of sauces and ketchup. In total, no less than **25.2 million tonnes** (farm weight equivalent) were traded in 2015, amounting to slightly more than twice the quantities shipped in 2000/2001. In 2015, these product shipments represented the equivalent of 19.7 million mT of raw materials for pastes, slightly less than 2 million mT for canned tomato products and practically 3.5 million mT for sauces.

For the paste category, last year's performance was 5% above the average of the three previous years; for canned tomatoes, the quantities involved grew 2% compared to the average for the period running 2012-2014. And finally, for the sauces category, which appears to be currently the most dynamic category in terms of worldwide trade, volumes increased by 11% between 2011 and 2014.

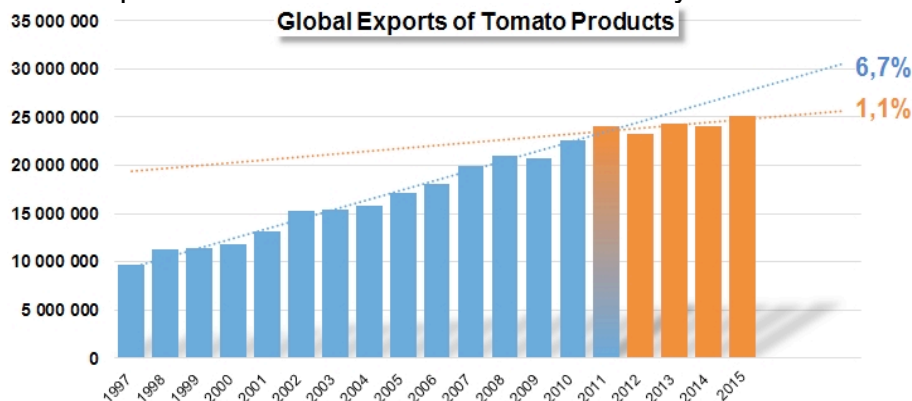


The proportion of the volumes processed each year that are absorbed by worldwide trade increased from 43% in 1997 to 61% in 2015. This considerable growth indicates a noticeable increase in volume as well as a strong globalization of demand, but mostly underlines the increasing role played by the big processing regions as worldwide supply sources (less than 10 countries in total). This concentration of the upstream agro-industrial sector is probably also one of the reasons for the excessive reactivity of the markets and the extreme volatility of prices, which are among the most important and specific features of our industry.

That said, the development of trade cannot be considered as a given: it seems that over the past four or five years, the growth of trade has slowed somewhat compared to the previous fifteen years. The volumes exchanged continue to increase, but at a slower rate. Between 1997 and 2011, the quantities absorbed by foreign sales from exporting countries grew from 9.7 million mT to 24.1 million mT, at an average annual growth rate of approximately 6.5%. Between 2011 and 2015, this rate fell to 1.2%, taking global export volumes to 25.2 million mT.

Global dynamics in the areas of trade, processing and consumption are tightly correlated: this "slowdown", like the reductions in processed quantities that have

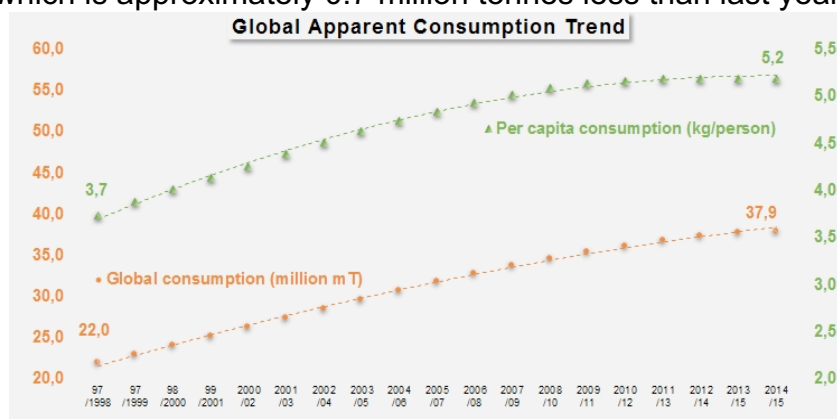
been programmed over the past 6 years, is most likely one of the consequences of the commercial, industrial and agricultural crisis that followed the over-abundant harvest of 2009. It can also be linked to the presence of more or less important volumes of carryover stocks, including in destination countries. Furthermore, it can be taken as a clear indication and an important component of the slowdown in the growth of consumption that has been observed in recent years.



### Changes in consumption patterns

Like for the previous editions of this global census, trade data has been smoothed over a period of three years in order to overcome the effects linked to "carryover stocks", for which the available information is only occasional, or insufficiently detailed and reliable. "First level" results, which are defined as the annual quantities available for consumption, indicate that the renewed activity observed in 2015 in terms of trade took the **total available volume** to about 41-42 million tonnes (farm weight equivalent). These results also define a model of consumption growth, or a way of looking at the global demand for tomato products, expressed in farm weight equivalent.

At the same time, the statistical information available has for the first time meant that the analysis of 2015 results can take account of data relating to annual inventories and to the uncertainties pertaining to the way certain items of information are declared. In the final count, "second level" results show that for the period 2014/2015, **real global consumption** amounted to close on **38 million tonnes**: being 0.23 million tonnes higher (+0.6%) than the level of the previous year (37.7 million tonnes), this level breaks a new record. This progression is even more noticeable when compared to the average of the three previous marketing years: for the period running 2012-2014, annual worldwide consumption amounted to close on 37.3 million mT, which is approximately 0.7 million tonnes less than last year.

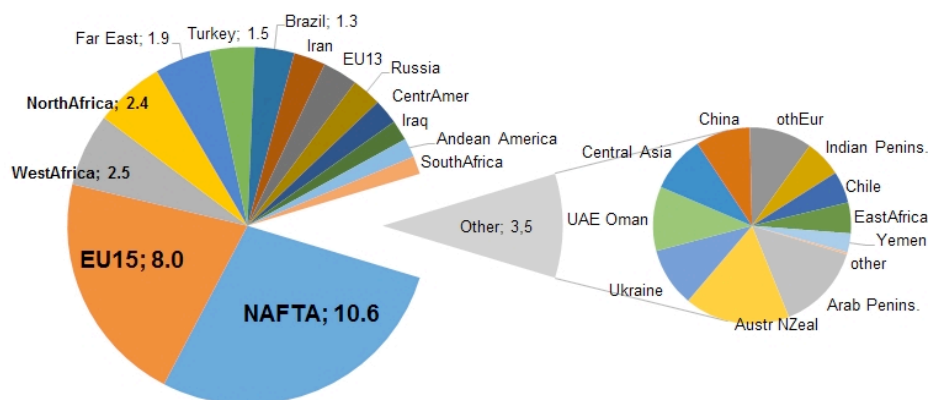


Over the past nineteen years, the Compound Annual Growth Rate has been slightly above 3%. In terms of quantities, this growth rate corresponds to an average increase of 1 million tonnes (farm weight equivalent) each year from 1997 to 2015. However, this progress seems slower in recent years. The annual growth rate over five years, which was close to 4% for the period 2000-2006, has regularly dropped since then, and was recorded at about 1% between 2011 and 2015. Over the past 5 years, worldwide consumption has therefore effectively continued growing, but this annual growth has only amounted to slightly less than 400 000 extra tonnes each year.

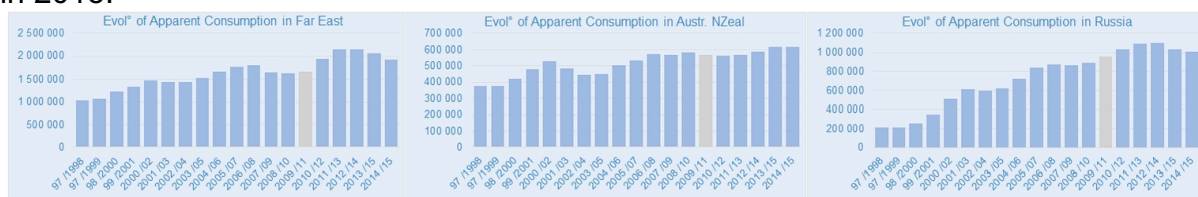
### 2015: situation update and recent shifts

In 2015, the main consumption regions identified during previous census efforts confirmed their leading role. Countries of NAFTA and the EU15 absorbed approximately 49% of the volumes consumed around the world (with 10.6 million and 8 million tonnes respectively). North Africa and West Africa have kept their positions in third and fourth place (with about 2.5 million tonnes each), ahead of the Far East, Turkey and Brazil. These seven leading regions absorbed approximately 28 million tonnes in farm weight equivalent, accounting for more than three quarters of the quantities consumed in 2015. The nineteen other regions shared the remaining 10 million tonnes.

Estimated Consumption in 2014/15: 37.9 million mT (raw mat. eq.)

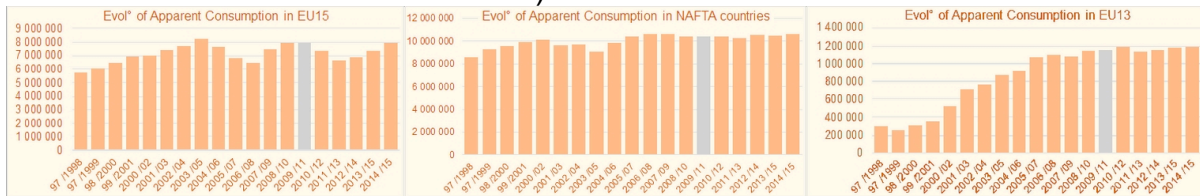


Several of these regional components have recorded sluggish growth rates, or reversed their growth patterns in recent years, leading to 2015 levels that are not very different from those recorded in 2010. This has clearly been the case in several regions that are heavily (or completely) dependent on foreign supplies, where trade and consumption dynamics are less exposed to the volatility of the markets and to sudden variations in operations, and are therefore easily identifiable. In Russia, the Asia-Pacific region, the Far East and, to a lesser extent, in Andean America, annual consumption growth rates for the period running 2010-2015 have been recorded between 1% and 3%. In these regions, consumption has **progressed slightly**, reaching approximately 4.2 million mT and accounting for 11% of global consumption in 2015.

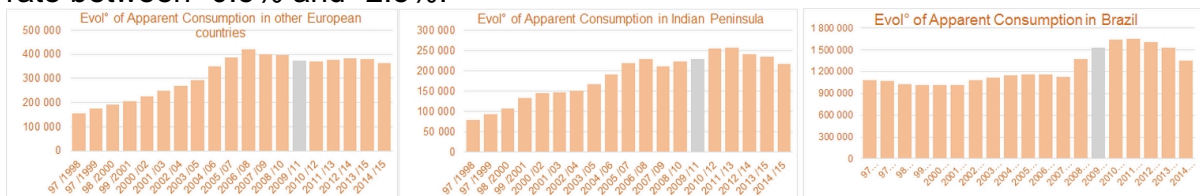


For further details pertaining to each region, see the infographics at the end of this article

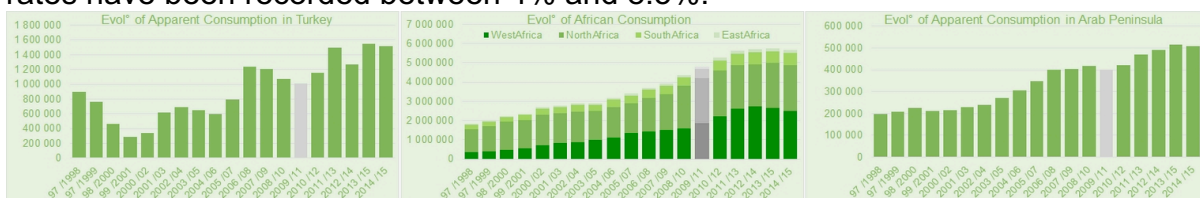
In other regions, the consumption levels recorded last year remain virtually identical to those recorded in 2010. There has been no significant change, either positive or negative, in North America (NAFTA), the EU15, North Africa or the EU13. For a number of reasons that can be economic, political or commercial, consumption levels have **remained stagnant** (annual growth below 0.6%). As a whole, these regions consumed 22.2 million tonnes (farm weight equivalent) last year, accounting for close on 59% of the total volumes consumed around the world. (See our report in the October 2016 issue of *Tomato News*.)



More worrying, the quantities consumed at a regional level seem to have even dropped in a number of areas. This can be said of Brazil, some non-EC countries of Europe, and the Indian Peninsula. Last year, total quantities absorbed by these three regions overall amounted to 1.9 million mT, against close on 2.2 million mT in 2010. So their proportion of the worldwide total fell from almost 6.5% to only 5% last year. Between 2010 and 2015, growth in these regions has been **negative**, at an annual rate between -0.5% and -2.5%.



In some regions, however, consumption results have increased and **clearly positive dynamics** have been recorded. This is the case of countries in Central America, the Arab Peninsula, South Africa, the Emirates, West and East Africa, as well as Turkey. For these regions overall, where accumulated consumption reached 6.6 million mT and accounted for more than 17% of worldwide consumption in 2015, annual growth rates have been recorded between 4% and 8.5%.

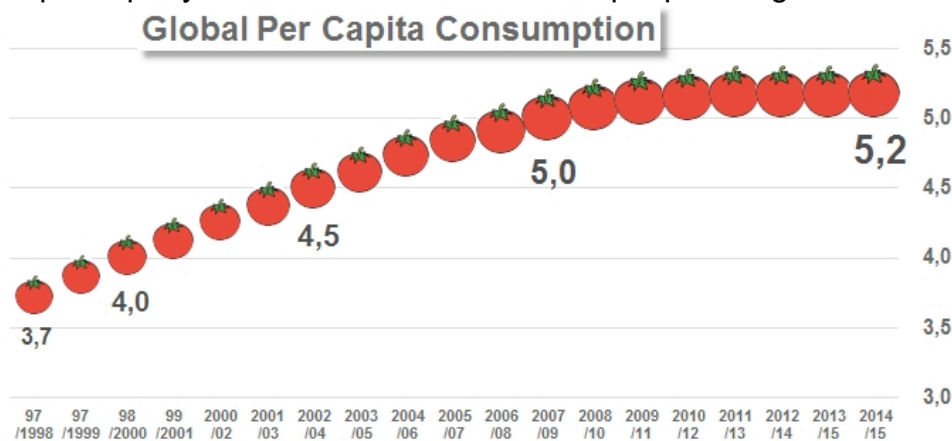


At a global level, these different components combined drive the development of consumption at a rate that is slower than during the 1997/2011 period, but which has nonetheless been at 1.4% for the past five years. The global pattern that emerges is now less dependent on consumption in **the regions that are already developed** (NAFTA, Far East and, to a lesser extent, the EU15, etc.) than it is on consumption in **developing regions** (Africa, EU13, Ukraine, Turkey, Russia, Brazil, Central America, etc.). Many of these markets have emerged recently, since the beginning of the 2000s, while others have seen a continuation of their development over the same period. They have now become major players on the worldwide market, and any fallback or deficiency in these regions that have driven growth in recent years would be very detrimental to the processing regions that supply them and to overall

progression in this sector. (See the details provided for each region in the infographics at the end of this article.)

### The drivers of growth

Two factors are of major importance in the development of worldwide consumption. **Individual consumption** is one of these drivers. At the worldwide level, it is estimated that per capita consumption increased from 3.7 kg/person in 1997 to 5.2 kg/person in 2015. This latest quantity amounts to approximately the equivalent of 1 kg of 28/30 paste per year for each of the 7.3 billion people living on earth in 2015.



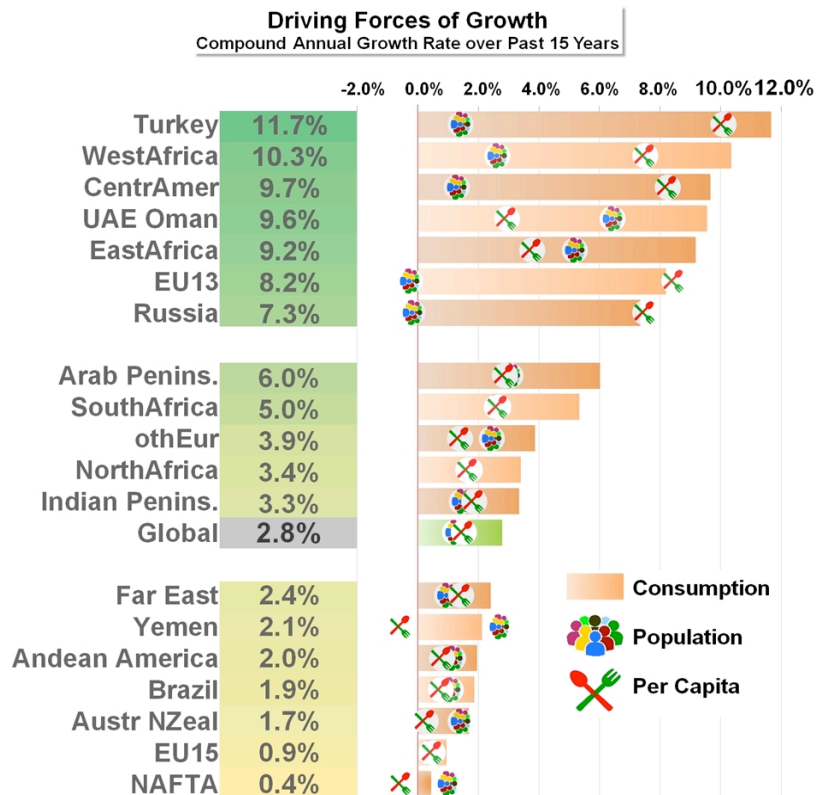
At the regional level, some growth rates have been faster than others, resulting in considerable shifts in the distribution of populations with regard to the worldwide average over the past nineteen years. In 1997, less than one person in four living on earth consumed more than the world average at the time (less than 3.7 kg of fresh tomato equivalent, or 640 g of paste...). In 2015, one third of the world's population (2.4 billion people) consumed more than 5.2 kg per year (farm weight equivalent) (or approximately 900 g of 28/30 paste). This is a remarkable progression when the evolution of the worldwide average is also taken into account. The consumption of tomato products involves an ever increasing proportion of the world's population, even if this result implies that 4.8 billion people have not yet reached the average level...

Another feature of this development is **demographic growth**. For a constant population, the development of individual consumption over the past nineteen years would not have exceeded 30.5 million tonnes consumed in 2015. Similarly, if individual consumption had remained unchanged since 1997, the increase in population alone would only have led to a worldwide consumption of approximately 27 million tonnes last year. It is the conjunction of these two drivers that is essential to worldwide growth, even if individual consumption drives the largest part of this development. Between 1997 and 2015, the world's population increased at an average annual rate of 1.2%. At the same time, per capita consumption grew at an annual rate of 1.8%. It can be said that individual consumption accounts for roughly 60% of the progression of worldwide consumption.

### Three types of markets

Each region has its specific drivers of development, based on cooking traditions, trends, availability, and the price of products. For **markets that are already considered "old" and more mature** (North America, Brazil, Asia-Pacific, EU15, Far

East, etc.), development over the past two years has been driven more by demographic growth than by an increase in per capita consumption. Due to the very size of the populations and quantities involved, the average annual growth rates remain modest – at about 1% for each of them. For these regions, annual progressions for the period running 1997-2015 feature characteristics of the so-called "stabilization phase" in classic development patterns, and most often remain below or close to 2%.

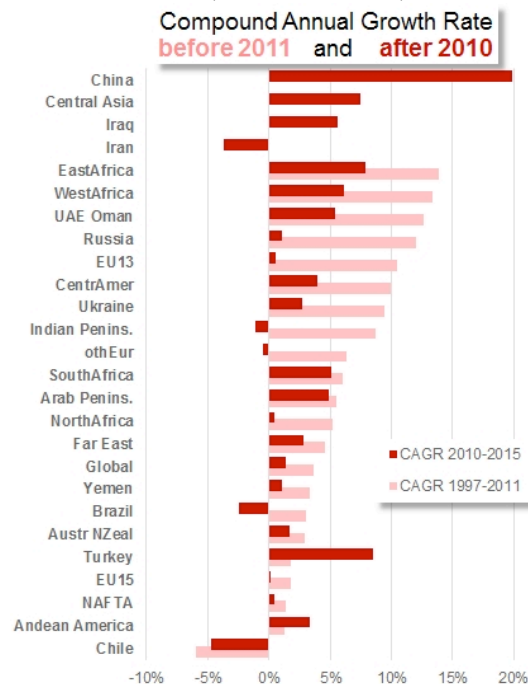


Over the same period of time, the regions of South Africa, North Africa, the Indian Peninsula, the Arab Peninsula, and non-EC European countries all recorded average annual growth rates between 3.3% for the lowest and 6.0% for the highest. These values, which are relatively high, are features of an **"emerging market"**, where the fairly rapid development of tomato product consumption has been mostly driven by the increase in individual consumption (unlike markets in the more "mature" group), but has also been the result of dynamic demographics.

With extremely high growth ratios (between 7 and 12%) for the 1997-2015 period as a whole, this last group includes a number of **"dynamic markets"** that have undergone major expansion. These markets include the countries of the EU13 (those that joined the EU after 2004), Russia, the Emirates, West Africa, East Africa, etc. For most of these regions, the development of individual consumption, which has been almost "explosive", has largely been the main driver of growth, and sometimes been the only driver available in cases when the population has decreased (EU13, Russia, Ukraine), due to migration patterns.

Yet recent years have seen the situation evolve in sometimes radical ways. Between 2010 and 2015, some of the consumption regions that were most dynamic and that had climbed into the top positions in terms of development saw the growth rates of

their regional consumption slow drastically. The regions that are most concerned by these shifting trends have been Brazil, the Indian Peninsula, non-EC countries of Europe and the countries of the EU13, North Africa, Russia...



It is clear that among the consumption regions that are currently the most important in terms of development (but with volumes that are sometimes difficult to compare from one region to another), those that deserve a special mention are China, Turkey, East Africa, Central Asia, as well as the countries of West Africa, Iraq, the Emirates and South Africa. The Arab Peninsula, Central America, Andean America, the Far East and the Ukraine can also be considered as promising markets. (See the presentation of the 2016 Consumption Census, which was given during the recent CibusTec in Parma, in October 2016, on the WPTC website).

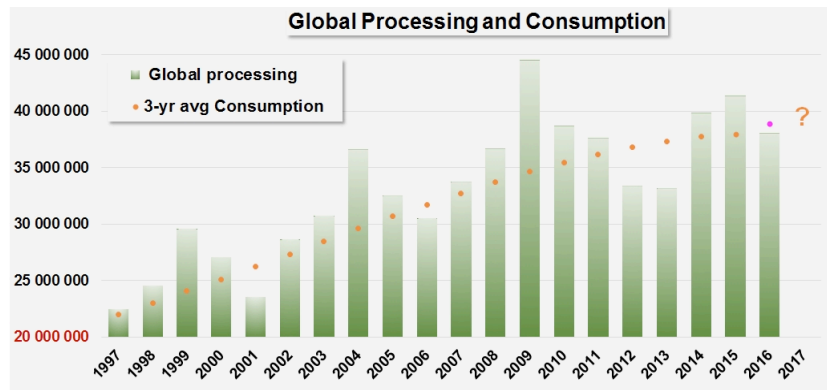
### 2016 situation update and prospects

According to currently available results, global consumption for the 2014-2015 period reportedly stands at about 38 million tonnes. At this level and given the trends emerging from the processing and trade data smoothed over three years, it would seem that global consumption has slowed in its progression over the past six or seven years, compared to the beginning of the 2000s.

Progression remains positive, though slower: it is likely that the consumption level of 2016 will be recorded at just below 39 million mT. With this in mind, preliminary processing prospects for the season that is underway, which are estimated at approximately 38.05 million tonnes, and are therefore well below projected worldwide consumption levels, seem to closely match the current pattern that aims to decrease the industry's surplus production in purely quantitative and global terms.

As for longer-term prospects, although it is not possible to foresee future market conditions and their possible impact on national and regional dynamics, current projections seem to indicate that probable consumption levels will not reach the threshold of 40 million mT (farm weight equivalent) before three or four years, and that worldwide consumption will likely take another decade before it climbs to about 41 million mT.

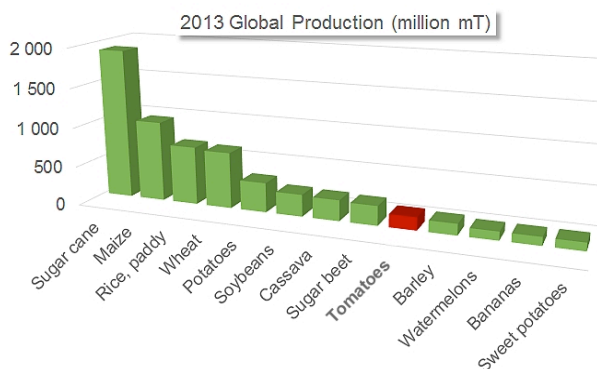




### Processing tomato / fresh tomato

Whether intended to be eaten raw or processed industrially, tomatoes feature among the world's most frequent crops. According to figures published by the FAO, in 2013, tomatoes were the ninth biggest crop worldwide, with some 164 million tonnes harvested, far behind sugarcane, potatoes or even cassava. According to available data, total production should reach slightly more than 175 million tonnes this year, of which approximately 38 million are destined for industrial processing.

In the 90s, this sector of "processing tomatoes" accounted for approximately 30% of the world's production, estimated at just under 75 million tonnes. For 2016, the figures being quoted indicate a processing tomato production that should absorb slightly more than 22% of the total crop. Indeed, the progression of quantities intended for processing is slower than the increase of quantities being grown for table consumption. Since 1989, the worldwide production of table tomatoes has grown at an annual average rate of 3.6%, whereas the average growth rate of tomatoes for processing has only been 2% per year.

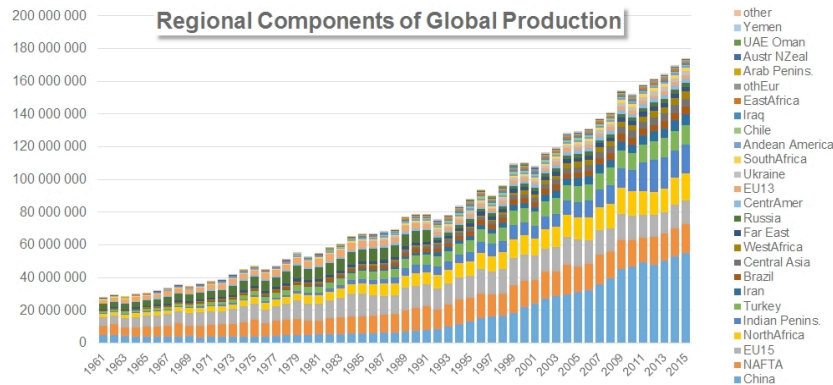


This may not be so much a cause as an effect of the increasing attraction shown by consumers for fresh tomatoes and, as it is the case in the USA, a new positive orientation in food trends rather than a disaffection of consumers for processed tomato products. As far as available data indicates, the fresh and processed components of tomato consumption in the USA, which is relatively sluggish, have not evolved in

any notable way with regard to each other over the past 28 years. The proportion absorbed in the form of processed products was close to 70% at the end of the 80s, and is currently reported to account for approximately three quarters of the total consumption of tomatoes in the US.

To a certain extent, these figures show a slight progression in the consumption of processed tomato. In 1989, there were very few regions where the consumption of industrially processed tomato was higher than the consumption of fresh table tomatoes. At best, one or two regions could be quoted in this respect, like North American countries (NAFTA), the countries of the Asia-Pacific region and the EU15 as a whole. Since that date, it seems that this group of regions has been joined by

Andean America and by the Emirates. Today, several other zones (Arab Peninsula, EU13, Far East and, maybe soon, West Africa) are about to reach the point of consuming more than half of their tomatoes in the form of pastes, sauces, ketchup, etc. This is without counting the fact that in other regions (East Africa, Russia, non-EC Europe, Central America, etc.), the share of processed products is growing rapidly.



However, a number of regions have recorded much slower growth for the consumption of processed tomato, including several regions that are of major importance in demographic terms. Paradoxically, although several of them have solid and effective local processing industries, countries like China and Brazil, as well as Central Asian countries, South Africa, Ukraine and a number of others, continue to favor table tomato consumption over processed products.

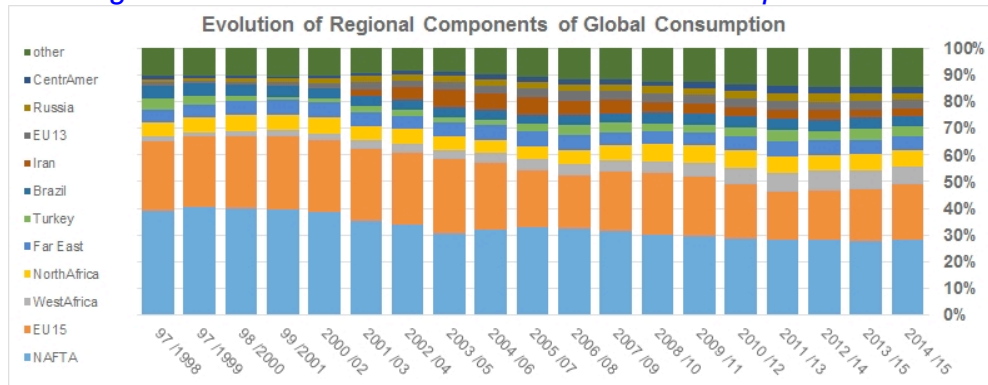
In a context where economic, regulatory and commercial constraints probably do not allow the industrial sector to develop as quickly as its fresh market cousin, the combination of this mosaic of regional dynamics leads to a fairly good equilibrium, which is both almost perfectly stable and very slightly tilted in favor of the table tomato sector. In terms of consumption, it is estimated that industrial products accounted for slightly more than 25% of the global consumption of tomatoes at the end of the 90s. Over the past three or four marketing years, the consumption of processed products may have increased, but is reported to have only accounted for 23% of the world's total consumption of tomatoes. This trend does not really seem likely to threaten the growth of consumption, insofar as the quantities involved continue to grow in absolute terms.

To quote Jordan Rost, who is the Vice-president of the "Consumer Insights" department with Nielsen, *"while there has been a recent shift of consumers opting for fresh tomatoes rather than processed tomato-based products, there are growth opportunities for manufacturers. [...] These opportunities are reflected in the rise of multicultural cuisines and gluten-free flours that enable greater consumption of foods like pizza, to the growing, renewed popularity of pasta."* Nonetheless, it will be important in coming years to ensure that this recent attractiveness of table tomatoes does not adversely affect the trust invested by consumers in the many qualities and proven health advantages of processed tomatoes, and does not contribute to further hindering the growth of the worldwide consumption of tomato products.

*The Tomato News editorial team wants to thank the World Processing Tomato Council, who commissioned this 9th census of worldwide consumption, as well as the AMITOM and Fiere di Parma, for the opportunity to present the latest results at the Tomato Day, which was held during the CibusTec in Parma in October 2016.*

## Some complementary data

### Evolution of regional contributions to total worldwide consumption



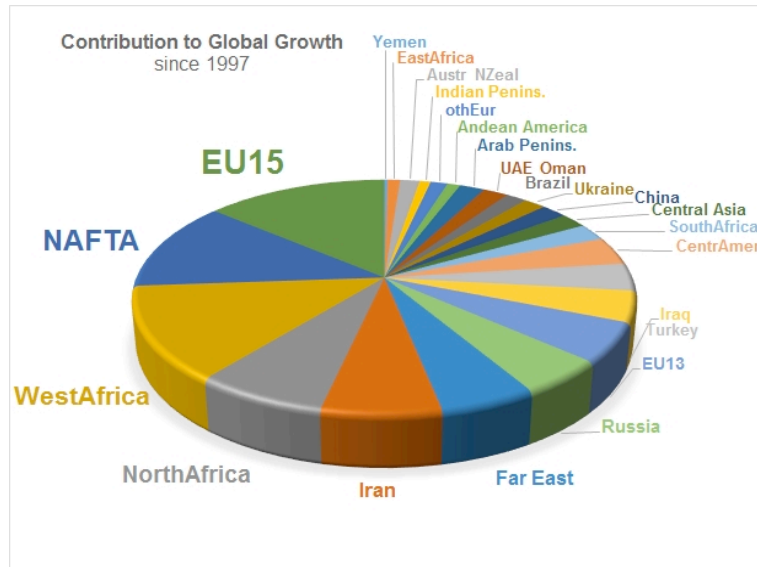
## Summary of the main regional results for tomato product consumption

Global Consumption of Tomato Products (million metric Tonnes, farm weight equivalent)

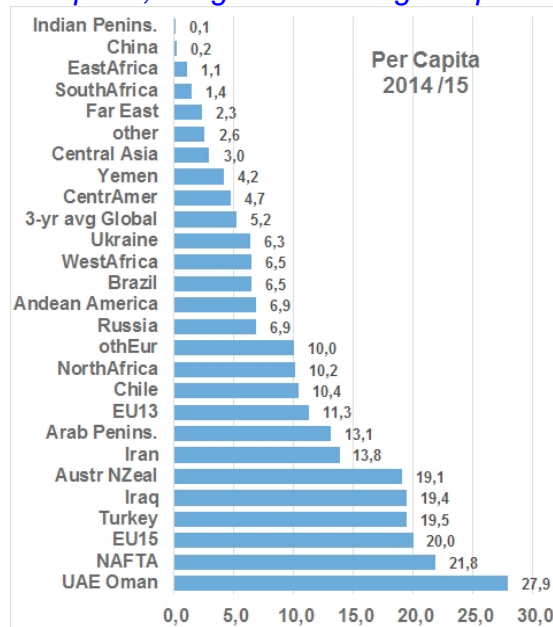
	2008 /10	2009 /11	2010 /12	2011 /13	2012 /14	2013 /15	2014 /15
NAFTA	10,4	10,4	10,4	10,3	10,6	10,5	10,6
EU15	8,0	7,9	7,3	6,6	6,9	7,3	8,0
WestAfrica	1,6	1,9	2,2	2,6	2,7	2,7	2,5
NorthAfrica	2,2	2,3	2,4	2,3	2,2	2,3	2,4
Far East	1,6	1,7	1,9	2,1	2,1	2,0	1,9
Turkey	1,1	1,0	1,2	1,5	1,3	1,6	1,5
Brazil	1,4	1,5	1,6	1,7	1,6	1,5	1,3
Iran	1,4	1,3	1,1	1,3	1,3	1,2	1,1
EU13	1,1	1,2	1,2	1,1	1,2	1,2	1,2
Russia	0,9	1,0	1,0	1,1	1,1	1,0	1,0
CentrAmer	0,6	0,7	0,9	1,0	0,9	0,9	0,9
Iraq	0,5	0,5	0,6	0,7	0,7	0,7	0,7
Andean America	0,5	0,6	0,6	0,6	0,6	0,7	0,7
SouthAfrica	0,5	0,5	0,5	0,6	0,6	0,6	0,6
Arab Penins.	0,4	0,4	0,4	0,5	0,5	0,5	0,5
Austr NZeal	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Ukraine	0,2	0,3	0,3	0,3	0,2	0,3	0,3
UAE Oman	0,3	0,3	0,4	0,4	0,4	0,4	0,4
Central Asia	0,2	0,2	0,3	0,3	0,4	0,4	0,3
China	0,1	0,1	0,2	0,2	0,3	0,3	0,3
othEur	0,4	0,4	0,4	0,4	0,4	0,4	0,4
Indian Penins.	0,2	0,2	0,3	0,3	0,2	0,2	0,2
Chile	0,2	0,2	0,2	0,2	0,2	0,2	0,2
EastAfrica	0,1	0,1	0,2	0,2	0,2	0,2	0,2
Yemen	0,1	0,1	0,1	0,1	0,1	0,1	0,1
other	0,0	0,0	0,0	0,0	0,0	0,0	0,0
<b>3-yr avg Consumption</b>	<b>34,6</b>	<b>35,4</b>	<b>36,2</b>	<b>36,8</b>	<b>37,3</b>	<b>37,7</b>	<b>37,9</b>

	Share 2015	Regional Cons° CAGR			2014 /15	Per Capita Cons° CAGR	
		1997-2011	1997-2015	2010-2015		1997-2015	2010-2015
NAFTA	28,0%	1,4%	1,2%	0,4%	21,8	0,2%	-0,4%
EU15	21,1%	1,7%	1,9%	0,1%	20,0	1,3%	-0,1%
WestAfrica	6,6%	13,4%	11,0%	6,1%	6,5	8,3%	3,6%
NorthAfrica	6,3%	5,1%	4,0%	0,4%	10,2	2,3%	-1,1%
Far East	5,0%	4,6%	3,5%	2,8%	2,3	2,5%	1,9%
Turkey	4,0%	1,8%	3,0%	8,5%	19,5	1,5%	6,9%
Brazil	3,5%	3,0%	1,2%	-2,5%	6,5	0,1%	-3,3%
Iran	2,9%	n.a.	n.a.	-3,7%	13,8	n.a.	-4,8%
EU13	3,1%	10,4%	8,0%	0,6%	11,3	8,3%	0,8%
Russia	2,7%	12,0%	9,1%	1,0%	6,9	9,3%	1,0%
CentrAmer	2,3%	9,9%	7,7%	3,9%	4,7	6,3%	2,8%
Iraq	1,8%	n.a.	n.a.	5,6%	19,4	n.a.	2,5%
Andean America	1,7%	1,3%	1,6%	3,3%	6,9	0,4%	2,2%
SouthAfrica	1,6%	6,0%	5,5%	5,0%	1,4	2,9%	2,5%
Arab Penins.	1,3%	5,5%	5,3%	4,9%	13,1	2,3%	2,3%
Austr NZeal	1,6%	2,9%	2,8%	1,7%	19,1	1,4%	0,4%
Ukraine	0,9%	9,4%	8,9%	2,7%	6,3	9,5%	3,0%
UAE Oman	1,0%	12,6%	9,9%	5,4%	27,9	3,9%	1,6%
Central Asia	0,9%	n.a.	n.a.	7,5%	3,0	n.a.	5,6%
China	0,8%	n.a.	n.a.	19,9%	0,2	n.a.	19,3%
othEur	1,0%	6,4%	4,8%	-0,5%	10,0	2,7%	-0,8%
Indian Penins.	0,6%	8,7%	5,7%	-1,1%	0,1	4,2%	-2,3%
Chile	0,5%	-6,0%	-5,4%	-4,8%	10,4	-6,4%	-5,7%
EastAfrica	0,5%	13,9%	11,4%	7,9%	1,1	6,4%	0,8%
Yemen	0,3%	3,3%	2,4%	1,1%	4,2	-0,3%	-1,3%
other	0,0%	-9,0%	-5,3%	7,2%	2,6	-7,5%	4,7%
<b>Global</b>		<b>3,62%</b>	<b>3,08%</b>	<b>1,38%</b>	<b>5,2</b>	<b>1,8%</b>	<b>0,2%</b>

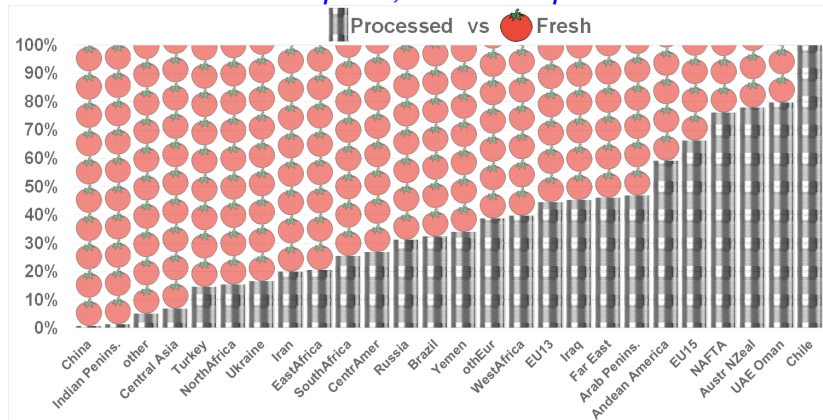
Contribution of each region to the overall increase in worldwide consumption since 1997



Per capita regional consumption, in kg of farm weight equivalent

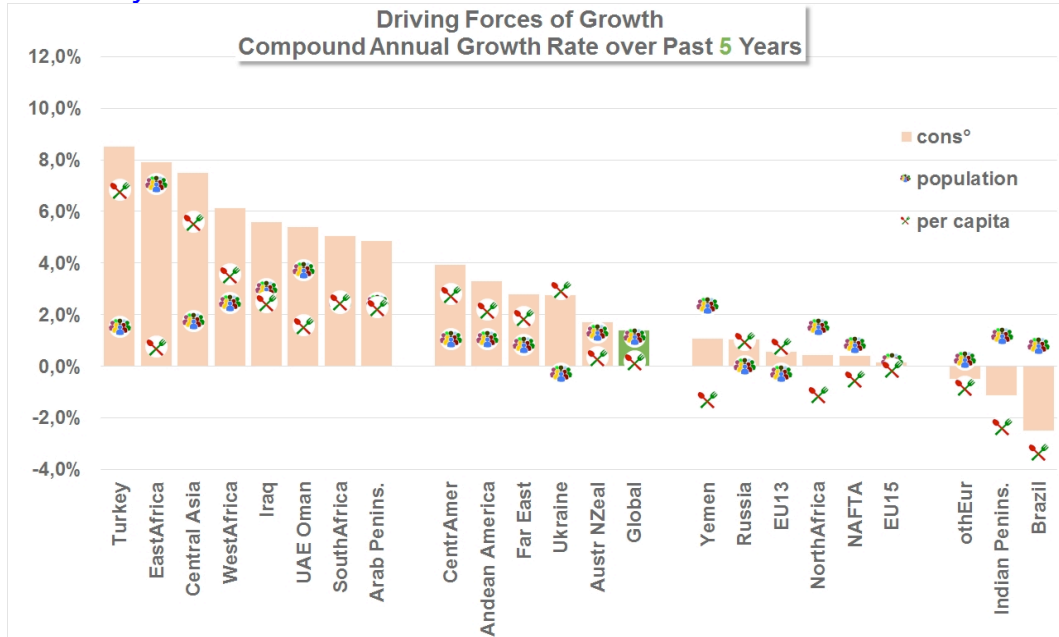


Regional profiles of tomato consumption, fresh and processed

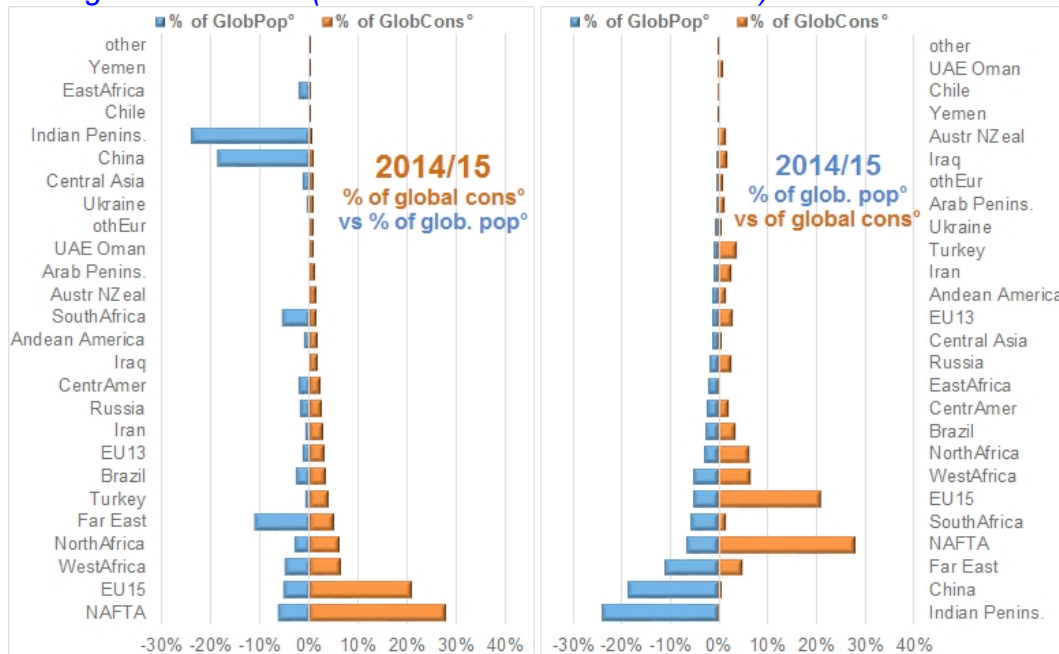


**Appendices/Annexes**

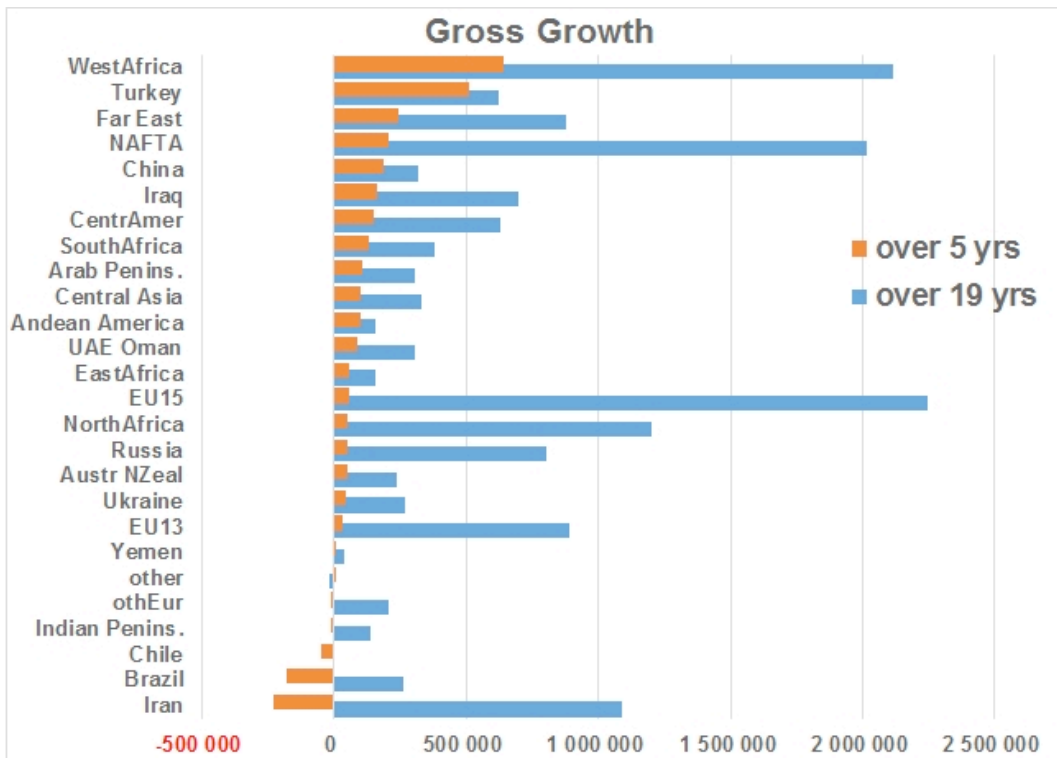
*Growth drivers, by region, over the past 5 years; these results should be compared to those presented on page 6, detailing the components of growth patterns over the past nineteen years.*



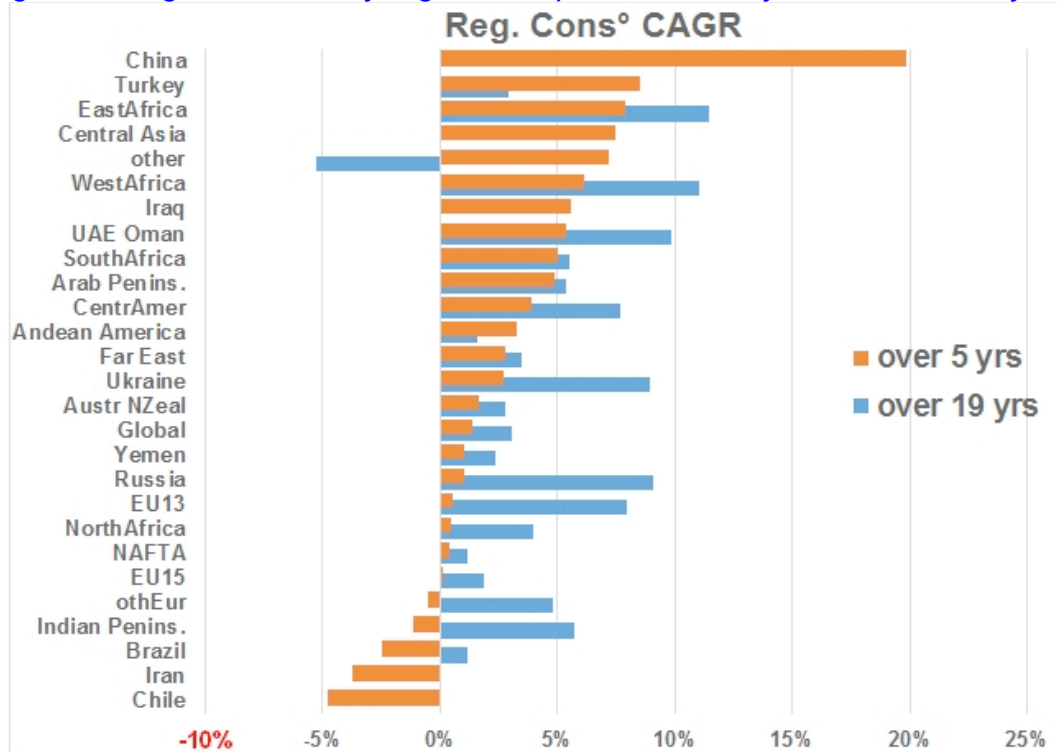
*Comparison between the demographic and consumption characteristics of the different regions observed (contribution to worldwide totals)*



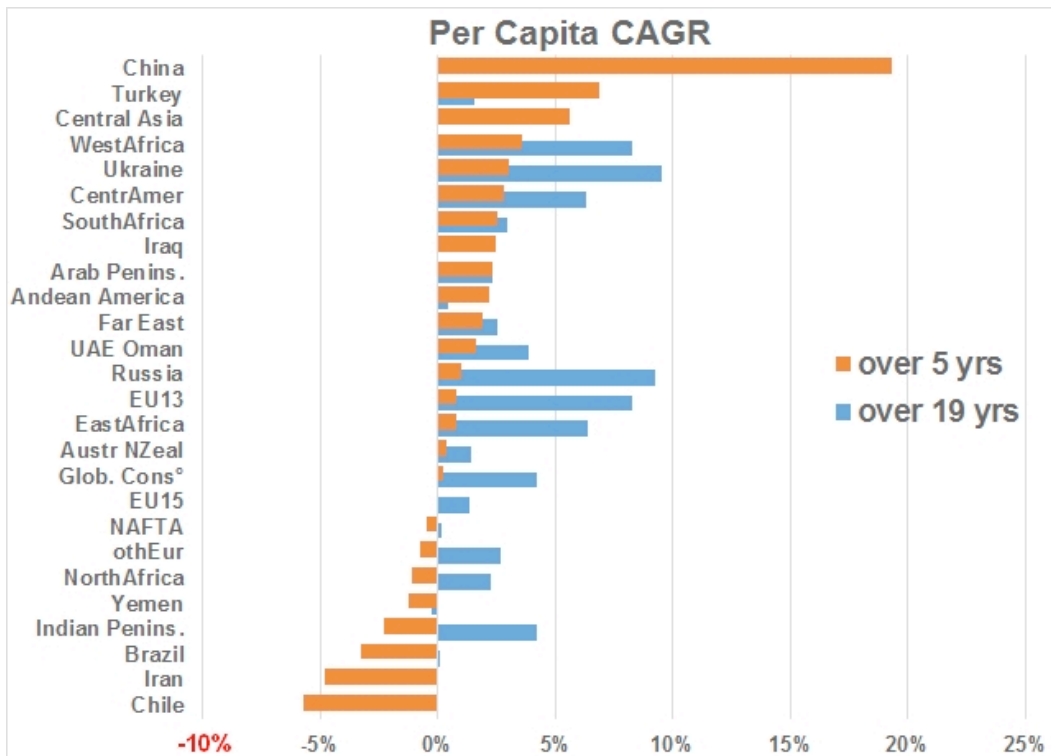
*Mean growth in each region, in metric tonnes of farm weight equivalent, compared for the periods 1997-2015 (19 years) and 2010-2015 (5 years)*



Average annual growth rates by region, compared over 19 years and over 5 years



Average annual growth rates of per capita consumption, by region, compared over 19 years and over 5 years



Comparison between the productions of several global crops over the past 28 years. For information, in 2016, the worldwide harvests of wheat and potatoes should be close to 738 million tonnes and 339 million tonnes, respectively; these two key crops have grown at average annual rates of 1.2% and 0.8% respectively.

