World avocado market projection 2028:

A paradigm shift

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- **Short panorama of the world avocado trade**
  - One of fastest developing fruit markets, that still relies on two pillars

- **Fastly changing production trends:**
  - A need to predict the market on the mid/long term

The world avocado market: "average" in volumes… but close to the leaders price wise

Overview based on 20/21 data – 21/22 atypical (drop of the Mexican production)

2.5 million tons exported in 2020/21
3.6% of the international fruit trade

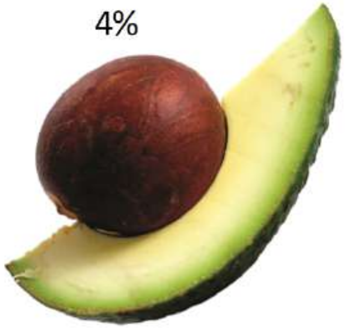
Global Fresh Fruit Trade - 69.4 mt in 2020

COMTRADE-CIRAD	mt	% W. trade
1 Bananas	21.4	31%
2 Apples	7.6	11%
3 Oranges	6.1	9%
4 Soft Citrus	4.4	6%
5 Grapes	4.1	6%
6 Pineapples	3.0	4.3%
7 Pears	2.7	3.9%
8 AVOCADOS	**2.5**	**3.6%**
9 Mangos	2.3	3.4%
10 Lemons	2.3	3.3%

A turnover ESTIMATED at around $6.6 billion in 2020/21: 8.0% of the fruit trade

Global Fresh Fruit Trade - 85 m US$ in 2020

COMTRADE-CIRAD	millions US$	% W. trade
1 Bananas	13,817	16%
2 Grapes	8,848	10%
3 Apples	7,612	9%
4 Avocados	**6,600**	**8.0%**
5 Oranges	5,294	6%
6 Cherries	4,572	5%
7 Blueberries	4,412	5%
8 Mangos	3,637	4%
9 Kiwifruit	3,413	4%
10 Soft Citrus	3,126	



- Imported/exported volumes – excluding local production sold on the local market
- Calculation made from COMTRADE/CIRAD data

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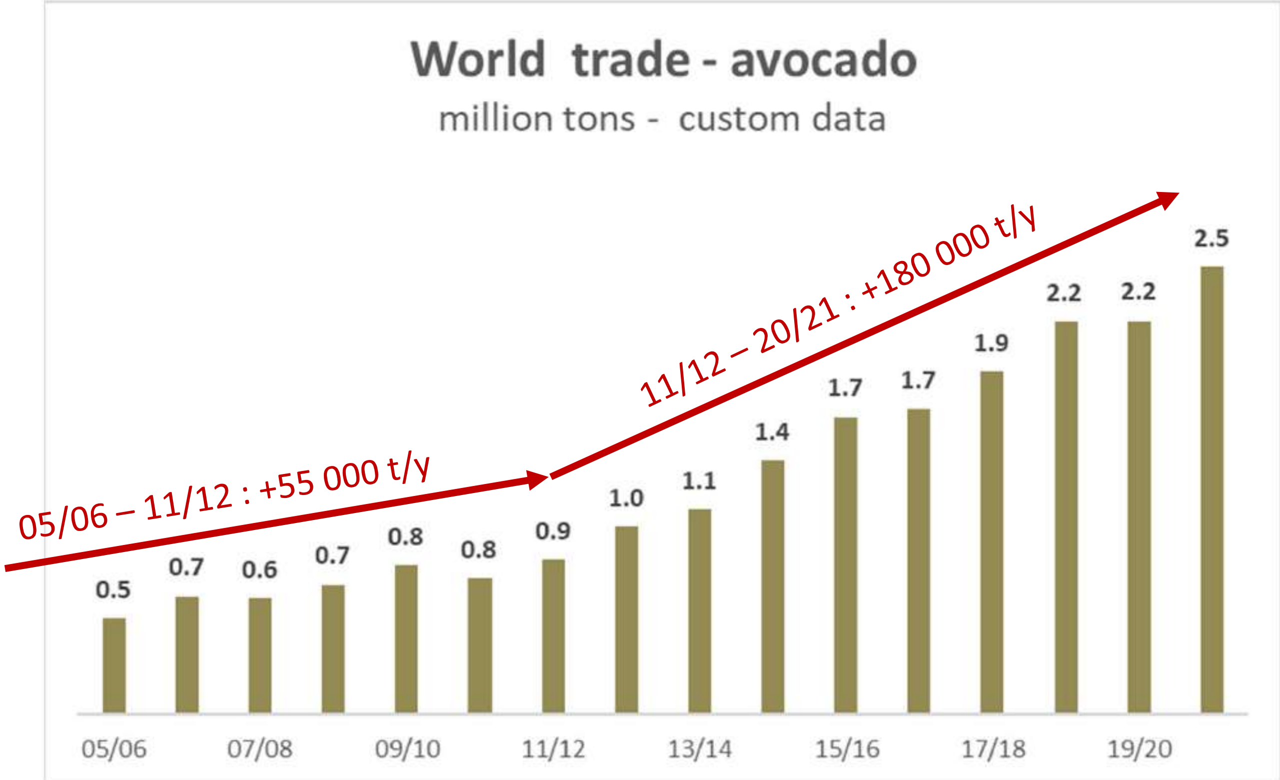
An extraordinary dynamism for about 10 years!



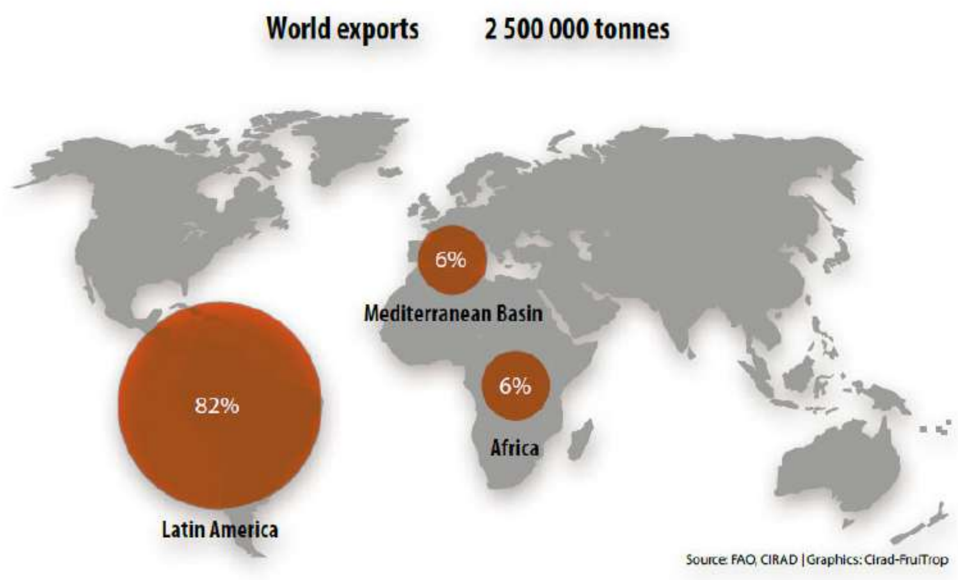
- **A dramatic change of the growth rate since 2011/12**
- **Between 2011/12 and 2020/21:**

- **Volumes**: + 1.5 million tons **(x 2.5)**
  Growth rate: 12%/year
  (global fruit trade: 2.1%)
- **Turnover** (import stage): + $4.8 billion **(x 3.2)**
  Exploding from 2.1 to 6.9 billion $

Huge economic/social impacts,
especially in the producing countries

From where do these volumes come from?

Exports– customs/ prof. Sources



Avocado - World main exporters

Exported volumes in 1000 t	20-21 or 21-22
1 Mexico	1 457
Michoacan	1 337
Jalisco	120
2 Peru	577
3 Chile	127
4 Israël	126
5 Colombia	99
6 Kenya	95
7 Spain	68
8 South Africa	61
9 Dom. Rep.	59
10 Morocco	42

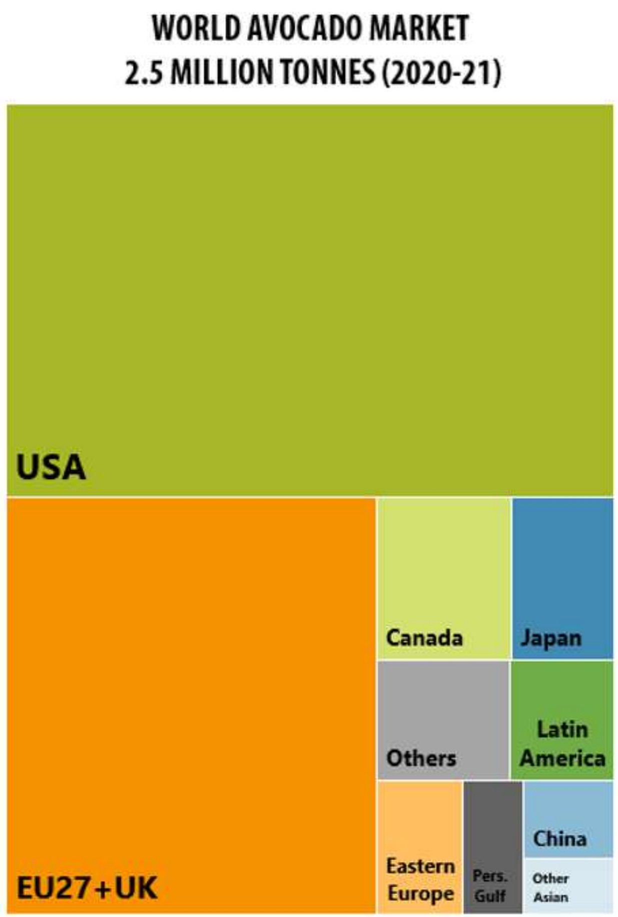
Sources: national Customs, professionals

≈60% of the world trade

fast growing exporters

« newcomers »
in 2010-11:
Peru : 60 000 t
Colombia /Jalisco≈0

A “bipolar” market



Where are these volumes sold?

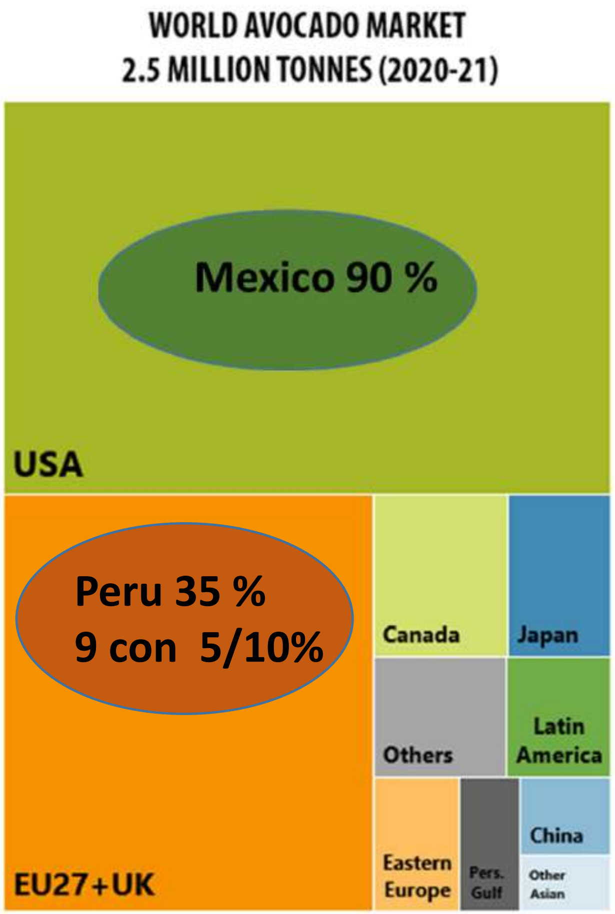
Roughly:

- About **one half** of the world exports **to the USA**
- **One third to the EU27+UK**
- **And the rest of the world….less than 20% …**
  Canada, Japan: 3.4 to 4.5% each – a bit less than 10% together
  The “rest” is a bit more than 10% only with:
  Eastern Europe/South America ≈ 60 000 t
  Central America/Gulf countries ≈ 45 000 t
  China ≈ 35 000 t

=>More than 80% of World exports are directed to the USA and the EU27+UK

=> USA and the EU27+UK will remain the pillars of world trade on the mid term
No other major growth driver … for the moment

EU 27 + UK market: very open…and very exposed !



A very different supply pattern in the two giants

- USA : restricted market to few origins, very "mexicanized"
  Phytosanitary regulation / natural Market for Mexico

- EU 27 + UK very open – 10 major suppliers
  Better resilience (compensation in case of sharp losses in one country)
  …but greater exposition to oversupply in the current context of sharp increase of world production

UE 27 + UK very exposed to oversupply

- **Fastly changing production trends:**
  - Mid term market projection

Study published in FRUITROP 277

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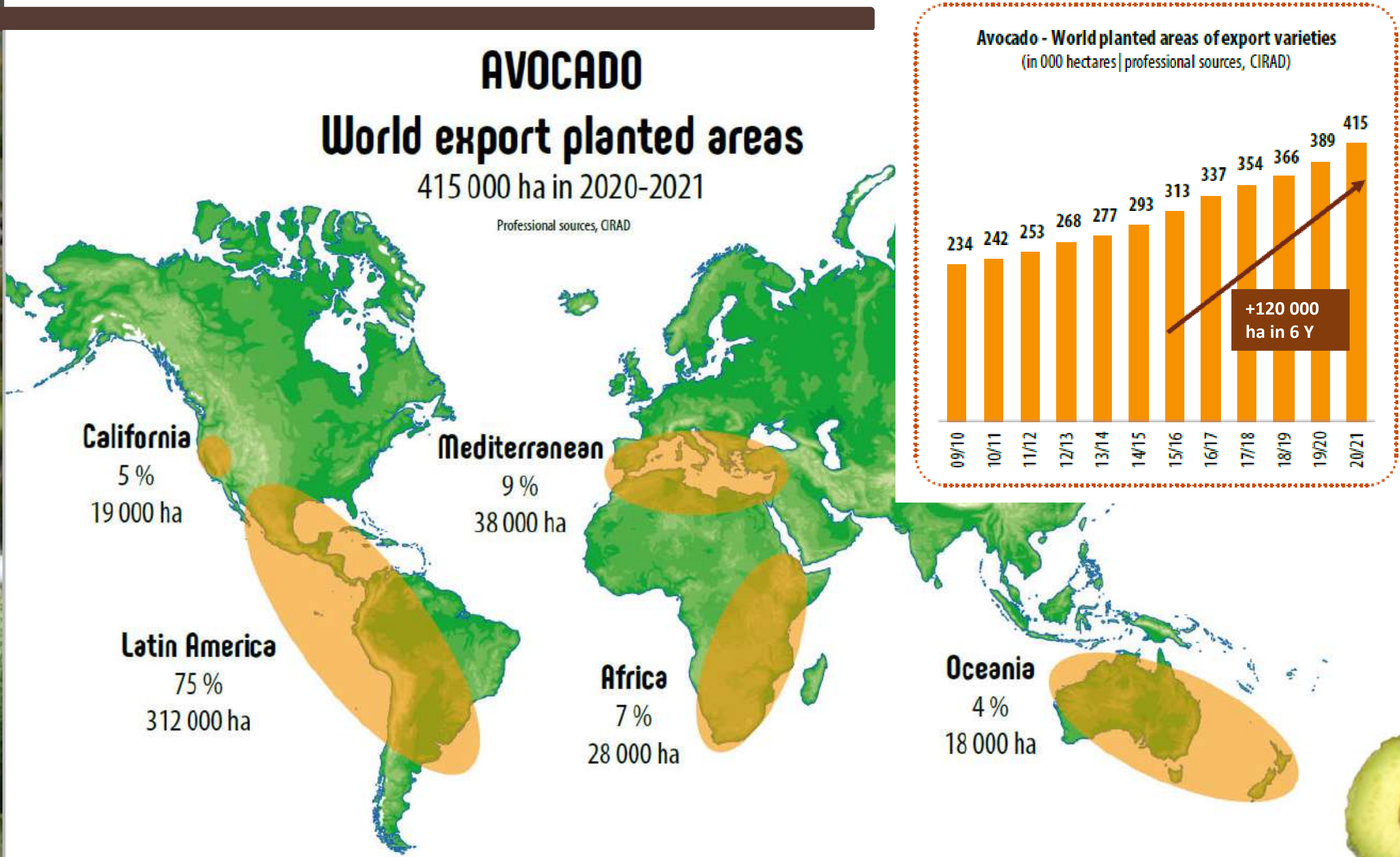
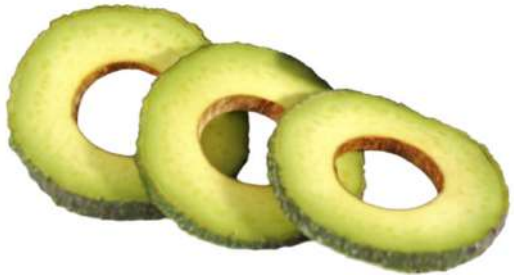
A changing panorama upstream:



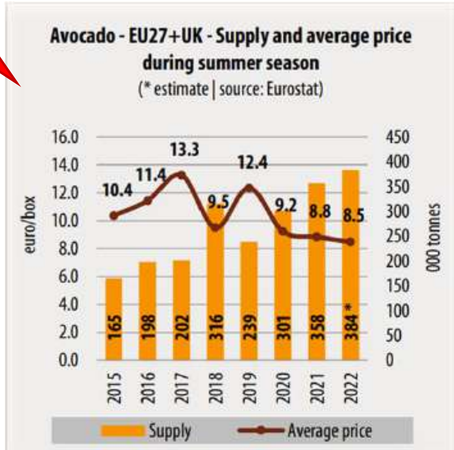
- A sharp increase of the plantation rhythm since 2014/15
- +120 000 ha in a six-year time
- Former six year period (08/09->14/15): +65 000 ha



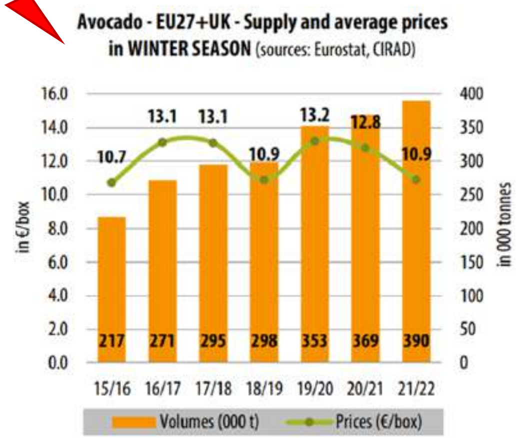
The first consequences are here!

Europe: a key market to detect the changes

very open / 12 supplier countries above the 10 000 t/season mark

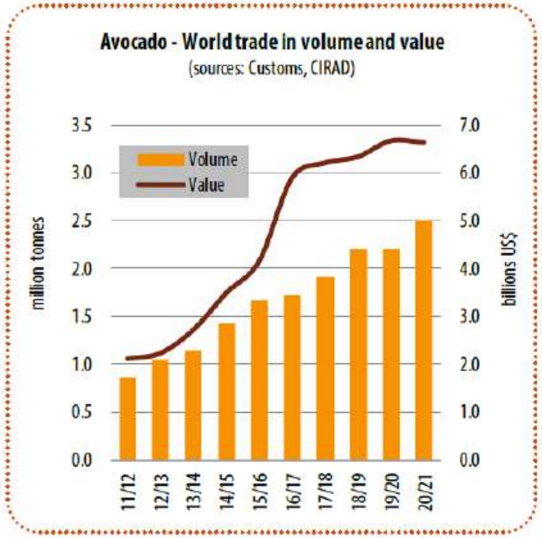


EU27+UK – summer season
A changing price trend due to Peruvian pressure



EU27+UK – winter season
Changing price trend also, but more recently – increasing pressure form Latin American suppliers, but also from the Mediterranean ones

At the world scale: still a very good dynamic in volume... but what a slowdown in value!



Since 16/17 :
+800 000t
+500 million
only in value

Trying to forecast the mid/long term evolution of the production

- **An “imperious need” of information… but a very complicated work**

  => **A “reasonable” ambition**: exploratory analyze under certain hypothesis trying to catch the main trends

- **Methodology – Production forecast:**
  - **working with data “from the field”** (acreage/yield/evolution of the production system that may influence the yield / not a statistical approach)
  - A **special attention paid to the information sources** – no use of the “standard ” (and often bad quality) generic databases – Work to identify and get access to the best information sources available…if any…

	Oficial data Producer association Census / Plant health services	Estimate based on profesionnal contacts	Estimate based on profesionnal contacts/proxy	No information
Quality	very good to good	good to acceptable	lots of uncertainties	
Country	South Africa/Chile/ Peru Michoacan/California New Zealand/Australia	Jalisco/Colombia/Brazil Israel/Spain/Tanzania Mozambique/Portugal	Morocco/Kenya	Ecuador/Guatemala/Dom. Rep.
Share of the world orchard	70%	23%	5%	1-3% ????

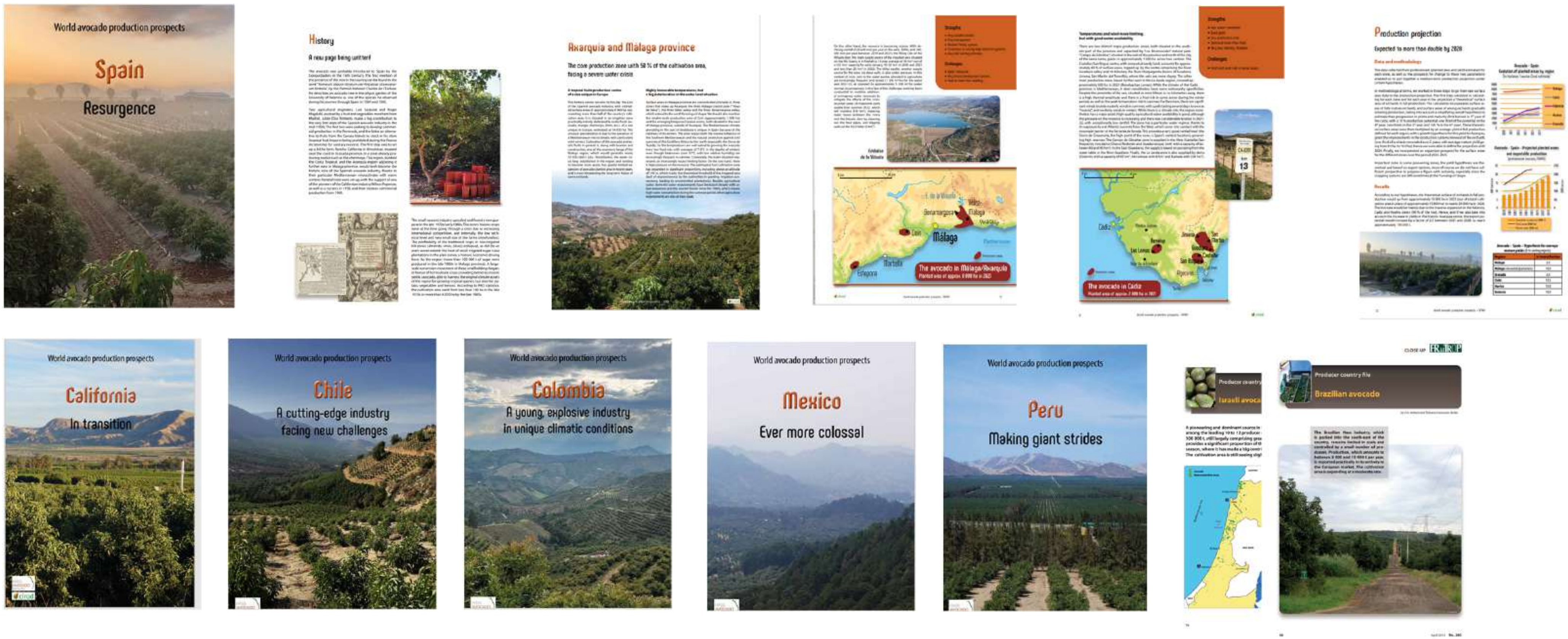
  - **Step 1** – **Estimating the PRODUCING acreage by country – period 2021/2028**
    - **From the existing acreage to the producing acreage** => model of production rise of a new orchard
      - **Global model** to simplify in this first analyzis **-** Yield evolution pattern: 10% at 3Y / 33% at 4Y / 66% at 5Y / 100 % at 6Y
    - **Need of the acreage to 2025 –** planting hypothesis by country for the period 2021-2025

- **Step 2** – **Estimating the exportable production - period 2021/2028**
  - **From the producing acreage to the exportable production** => yield and yield evolution hypothesis by country

Base of the study : HAB/CIRAD Avocado industry country profiles

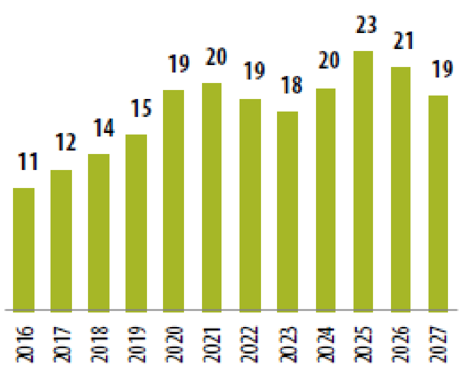
An up-to-date vision of the situation and of the dynamic of the main world market players

Available for Peru, Mexico, Chile, Colombia, California, Spain, Portugal (just released)
Morocco in process…and the others coming soon !



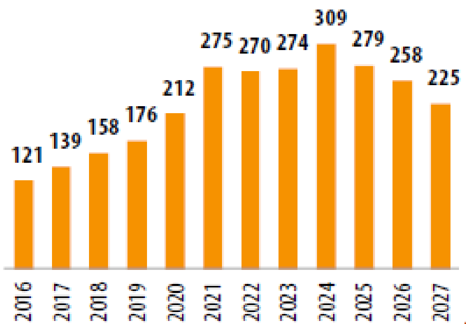
Results for production : a drastic change of the supply pattern

Avocado - Annual growth of world planted areas expressed in hectares at full production (in 000 hectares | source: CIRAD)



- **A sharp acceleration of the growth of the acreage these last years**
  - from +11 000-12 000 ha/Y of new orchards (expressed in ha at full capacity) in 2016-17 to +19 000-20 000 ha/Y these last years
    - All players going up, besides Chile/California
    - A decreasing plantation rhythm in Michoacán
    - but a sharp increase of the "newcomers" (Colombia / Jalisco / Morocco)…
    - and a steady growth or acceleration of the "historical players" (Peru, Israel, SAR, Spain,…)
- **The rhythm will remain steady or even increase in the coming years**

Avocado - Annual growth of world exportable production linked to the annual growth of planted areas and the growth of yields applied to the entire planted areas (in 000 tonnes | source: CIRAD)



- **An even stiffer increase of the export potential**
  - from + 120 000-140 000 t/Y in 2016/17 to **270 000-275 0000 t/Y now**
  - increase in **acreage** + increase in **productivity**
    - improvement of the cultivation practices in some countries
    - new orchards with a bigger production potential (clonal trees, production tech,...)
      ex.: Michoacán from 10.5 t/ha to 11 t/ha / Spain 7.5 to 9 / Colombia 9 to 11.5
- **The rhythm will remain steady or even increase in the coming years**

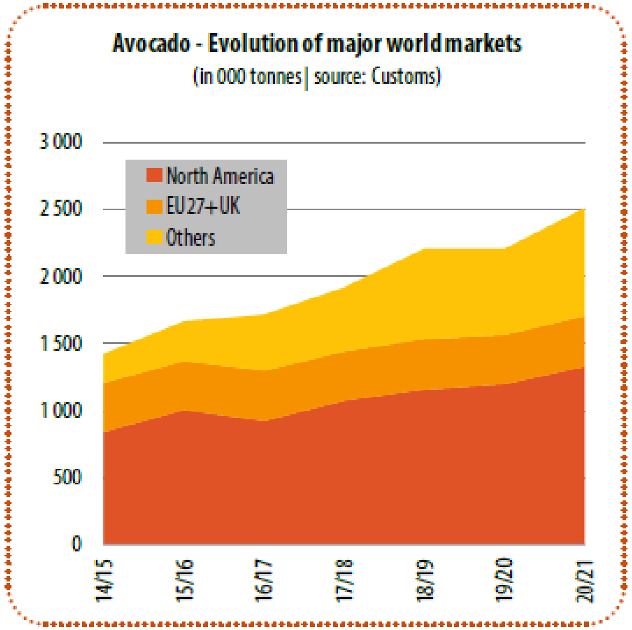
  up to 310 000 t in 2024

Trying to forecast the mid/long term evolution of demand

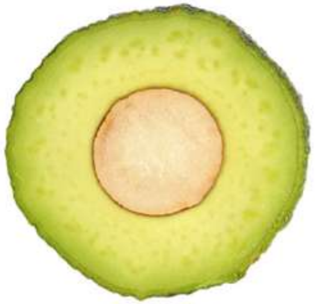
- **Methodology: to extend the last season trend, paying a special attention to the key markets**
  - **Step 1: Calculating the growth of the world exchanges for the leading markets**
    - Average growth of the last 4 seasons
    - Based on **Customs statistics – Demand of the export markets only**

    => evolution of the local production in the producing countries not included

Average yearly increase in volume (t)* *aver 15-17 / aver 19-21	
USA	67,866
UE28*	63,049
Canada	7,277
Japan	2,840
China	2,052
Latin America	6,347
East Europe	9,293
Other asia	3,420
Gulf	1,056
others	3,159
Total	**166,359**

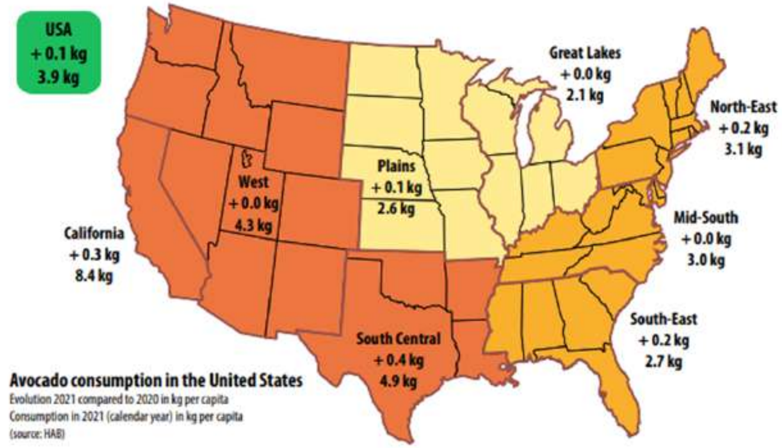


  - Step 2: Analysis of the results taking into account key consumption trends "Is this trend likely or not?"
    - **Special attention to the USA / EU27+UK**
      - USA : 50% of the total imports
      - UE27+UK : 31% of the total imports
      - Others: mainly Canada 5% / Japan 3% / South-Central America 3%
  - **Step 3: Choice of an hypothesis of growth and calculation**

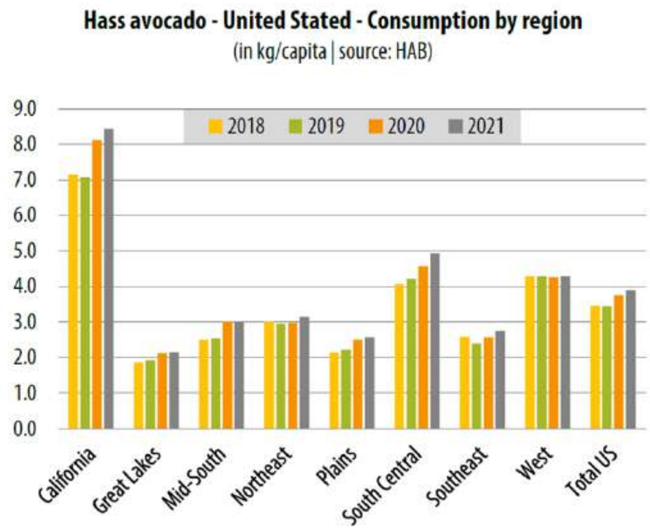


Question: Will the pace remain this strong in the USA?

- **Average consumption already very high at 3.9 kg/capita?**
  - The **tools are here**:
    - Huge **promotion budget** (=>$80 million/Y)
    - Small fruits in nets – **fastly growing market** segment
  - **Potential customers are also here**:
    - Evolution of the population: **+30 m consumers in 2030** (2/3 overconsuming Hispa
    - HAB studies: **% of over-consumers increasing** (spending>$26/Y)
      28% of the households / 70% of sales
      More and more non Hispanic people entering this category
    - Good potential on **the East coast – large population under consuming**



Validation of the growth hypothesis

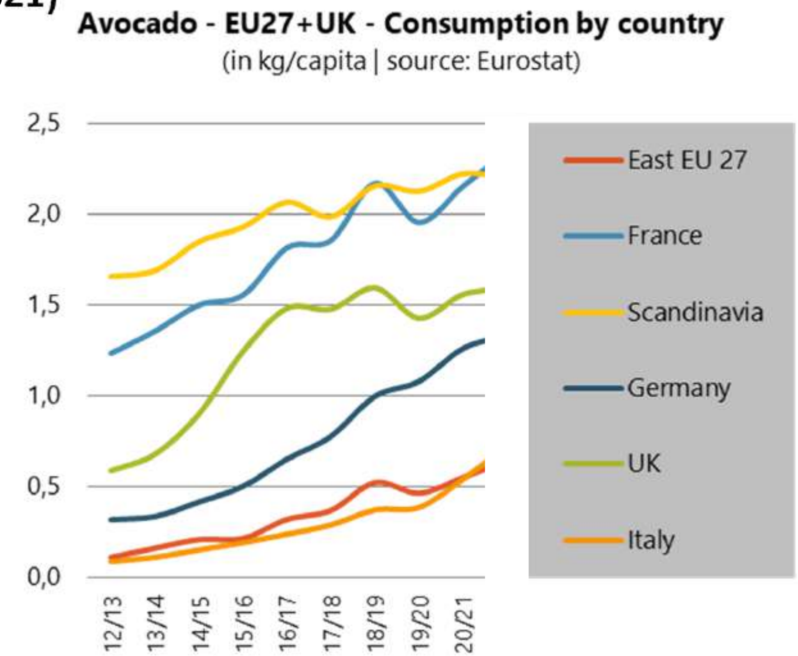


Question: Will the pace remain unchanged in the EU27+UK?

Average consumption far lower : 1,5 kg/capita // 3,9 for the USA (2021)
… but serious doubts

- **WAO promotion budget still low for the moment**
  - EUR 2/3 million for more than 500 million people

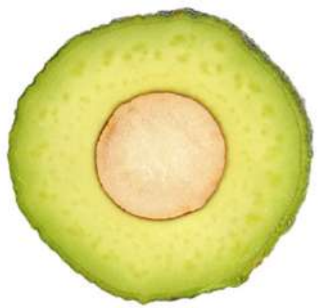
- **A cap on the growth on the most developed markets**
  - D/IT/East Europe:
    - Consumption still low
    - Growth rate 2015->2020: >20%
  - FR/Nordic Countries:
    - Consumption above 2 kg/capita
    - Growth rate 2015->2020: 8% (FR) – 4% (NC)



Chosen Hypothesis:

- Reducing the German growth to 6% when passing the 2.0 kg/capita step
- Including a recovery of the UK (Brexit saga over) at 5%
- For the others - keeping the last 4 years growth rate

=> from a 12%/Y growth till 2023 to 8% from 2024 to 2028



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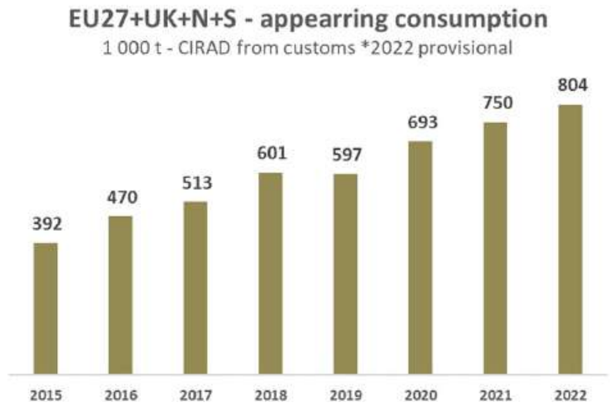
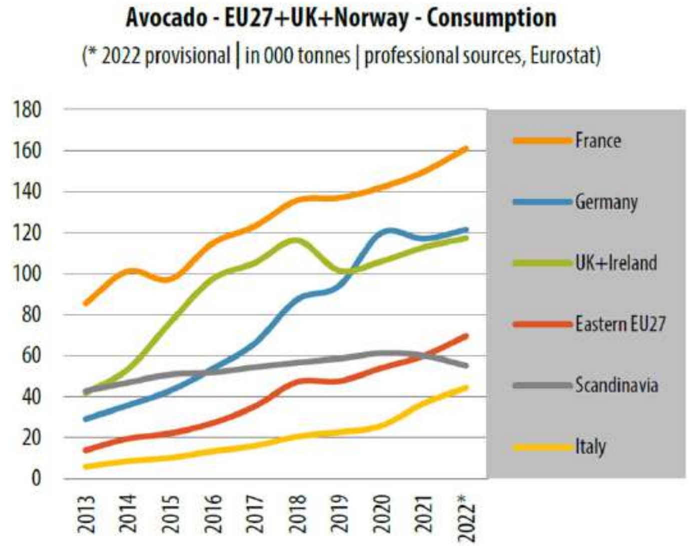
Consumption Update EU 27 2022 + UK/Nor./Swiss : A new challenge !

- **A new challenge – inflation !**
  - December 22 (Y/Y) : from 6/7% (FR/SP) to 20% + (H, Baltic States) / average EU 27 10,4 % … and avocado is within the “expensive fruits”)
- **2022 preliminary results – good, but slow down confirmed!**
  - A nice growth of 7% in 2022 – preliminary estimate
  - Still far better than the average of the fruit category
  - …but tending slightly down?

	Yearly growth	
	in %	in vol.
2015->20	12%	+60 000 t
2020->22	7%	+55 000 t

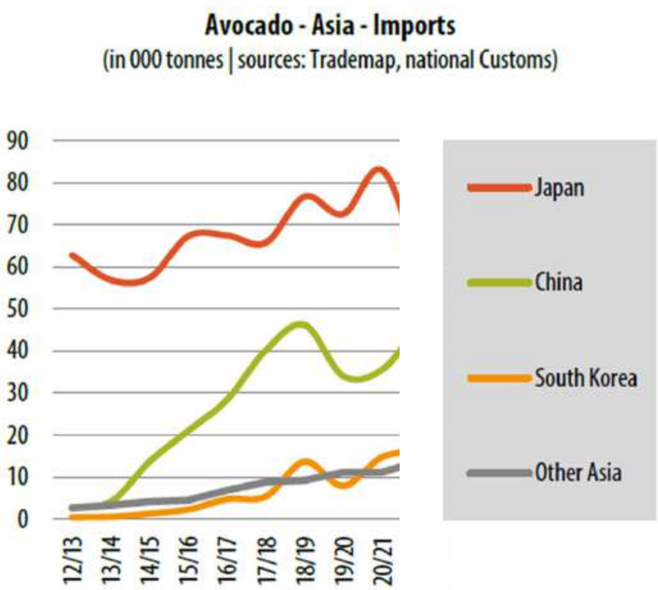
- **By countries – some good…and bad news**
  - Italy still within the strong growth drivers, with a high potential
    - Yearly growth >20% this last 4 years - consumption still low at 730 g/capita
  - France back on track after the slow down experienced in 2020 and 2021
    - +8% in 2022 against 4/5% - consumption at 2,4 kg/capita in 2022
  - ….but….
    - UK recovery still poor – just back on the 2018 consumption in 2022 (1,6 kg/capita)
    - Nordic countries from almost flat to slightly decreasing
    - And, above all, Germany flat till 2020 (1,3 kg/capita) – former main growth driver





Will the slow down be stronger than expected in our hypothesis ?

Asia: accelerating, thanks to China?



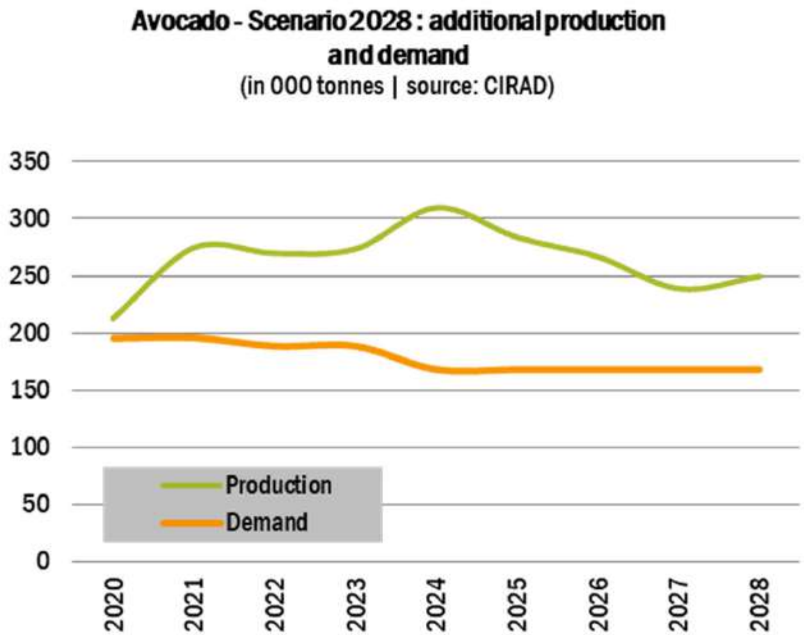
- **Our hypothesis for Asia:**
  - **China: increasing the growth.**
    - Disappointing until 21/22 - flat at 35 000/45 000 t
    - **However**…
      - High potential – large population with good income
      - Investments in infrastructures (cold storage/ripening facility)
      - Investment in consumer education

    => Hypothesis: +20 000 t/Y during the period 2022 to 2028
  - **For all the other markets: following the last 4 seasons trends**
    - **Slight growth for Japan/South Korea and "other Asian markets"**
- **Update 21/22 …quite disappointing again…**
  - Limited growth in China / dramatic decrease in Japan, but link to the drop of the Mexican production (90% of the supply)

To sum up the growth hypothesis used in this projection :

- Same strong pace in the USA
- A slight slow down in the EU27+UK – Will the slowdown be more marked?
- Asia accelerating – will the growth be as good as expected ?

Crossing the annual increase of production and demand

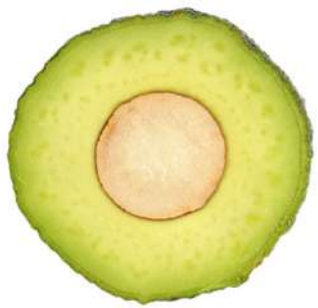


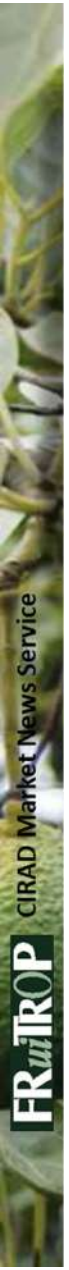
From a balanced situation…

around +200 000 t for both the export potential and the demand

…to a very significantly unbalanced market

- Production increasing much faster than the demand
- A 80 000/100 000 t gap from now on





In conclusion

- Lots of parameters to take into account / lots of uncertainties

  =>The "model" only shows a "direction"
- The gap between additional supply and demand is very large

  => Hypothesis of major oversupply highly possible
- Parameters **impossible to take into account**, but that may highly impact the projection :
  - climate change can highly impact the industry in some countries over a long period (Chile, Spain, Colombia,…)

    => **New and lower yield hypothesis possible**
  - **New regulations and consumer expectations – sustainability**
    - Carbon/water foot print regulations entering into force soon?

    ⇒ Will all those additional volumes get access to markets demanding high certification schemes?
    - Consumer move to local food. Impact?
  - **Image of the product – addressing the controversies with scientifically proven analysis**

This study is a warning, but it is still time to act: TWO KEY WORDS

-DECREASE of the plantation rhythm

not the case for the moment - first estimate planting 21/22 **>30 000 ha!!!**

-PROMOTION

strength of the avocado market : **huge margins of consumption growth not or underexploited**

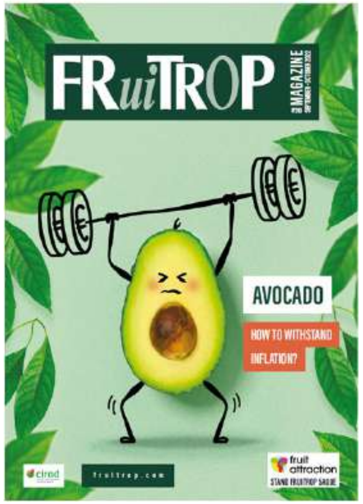
In the "foreign" Asian markets / Local and regional market of the producing countries

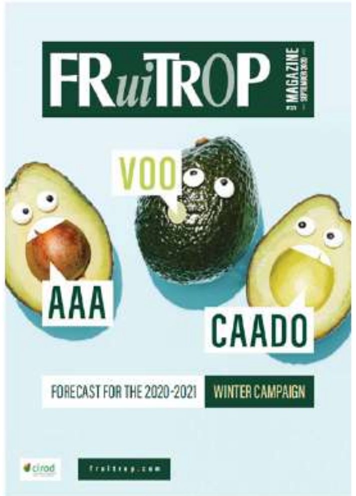
But above all in Europe – High potential (1,5 kg/capita against 3,9 in the US!)

main growth driver with the USA in the coming years

Version 2.0 of projection in process – first presentation at WAC NZ

Thanks for your attention !





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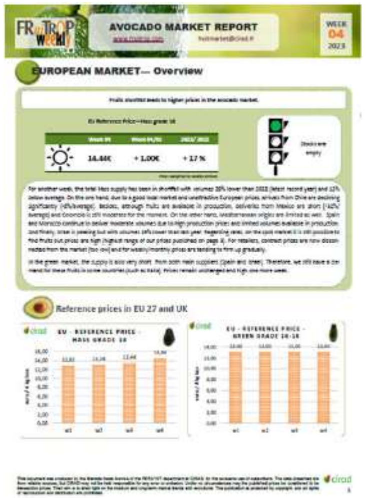

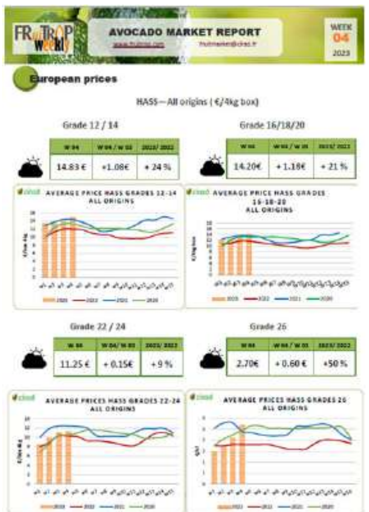

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