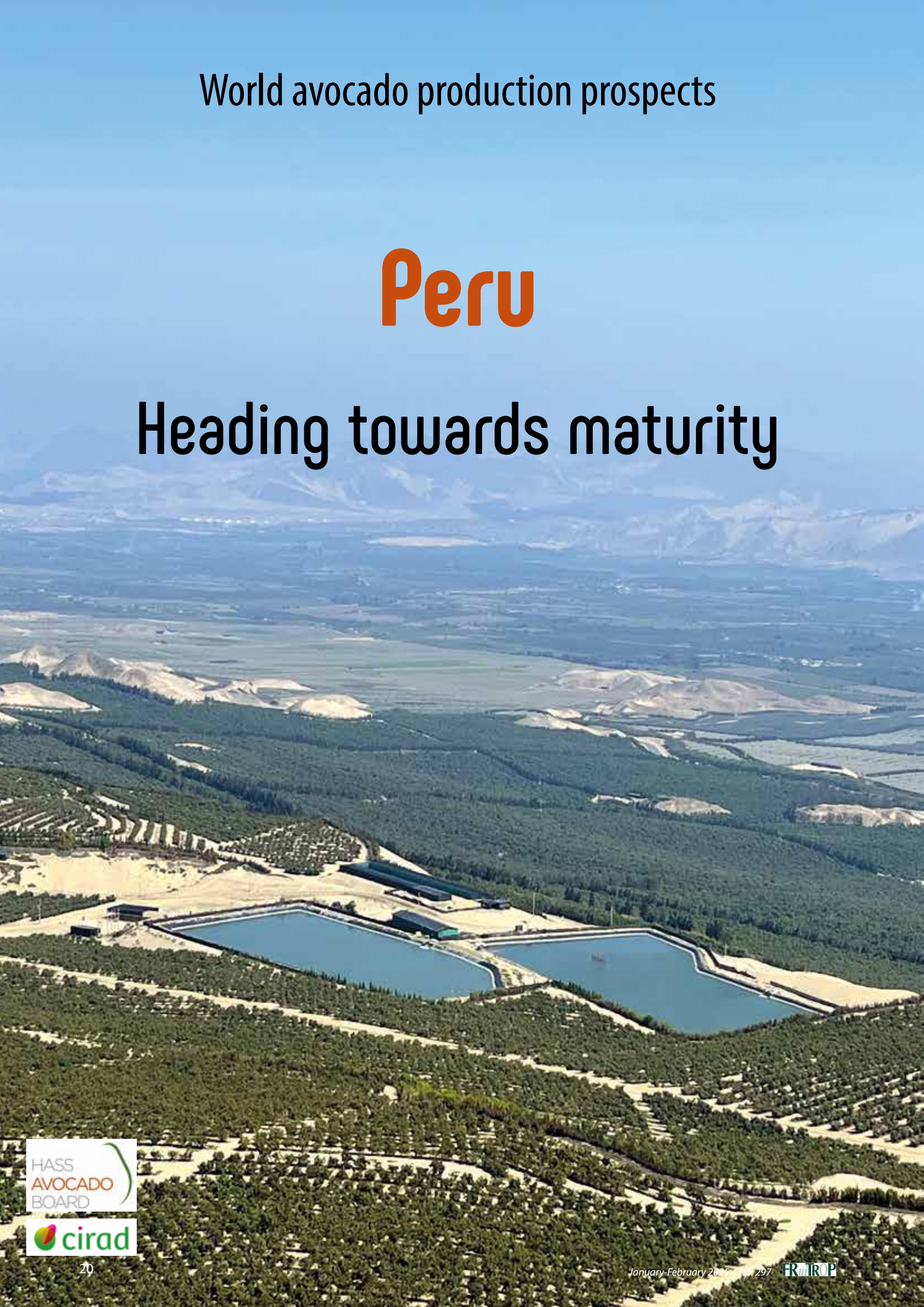
World avocado production prospects

Peru

Heading towards maturity



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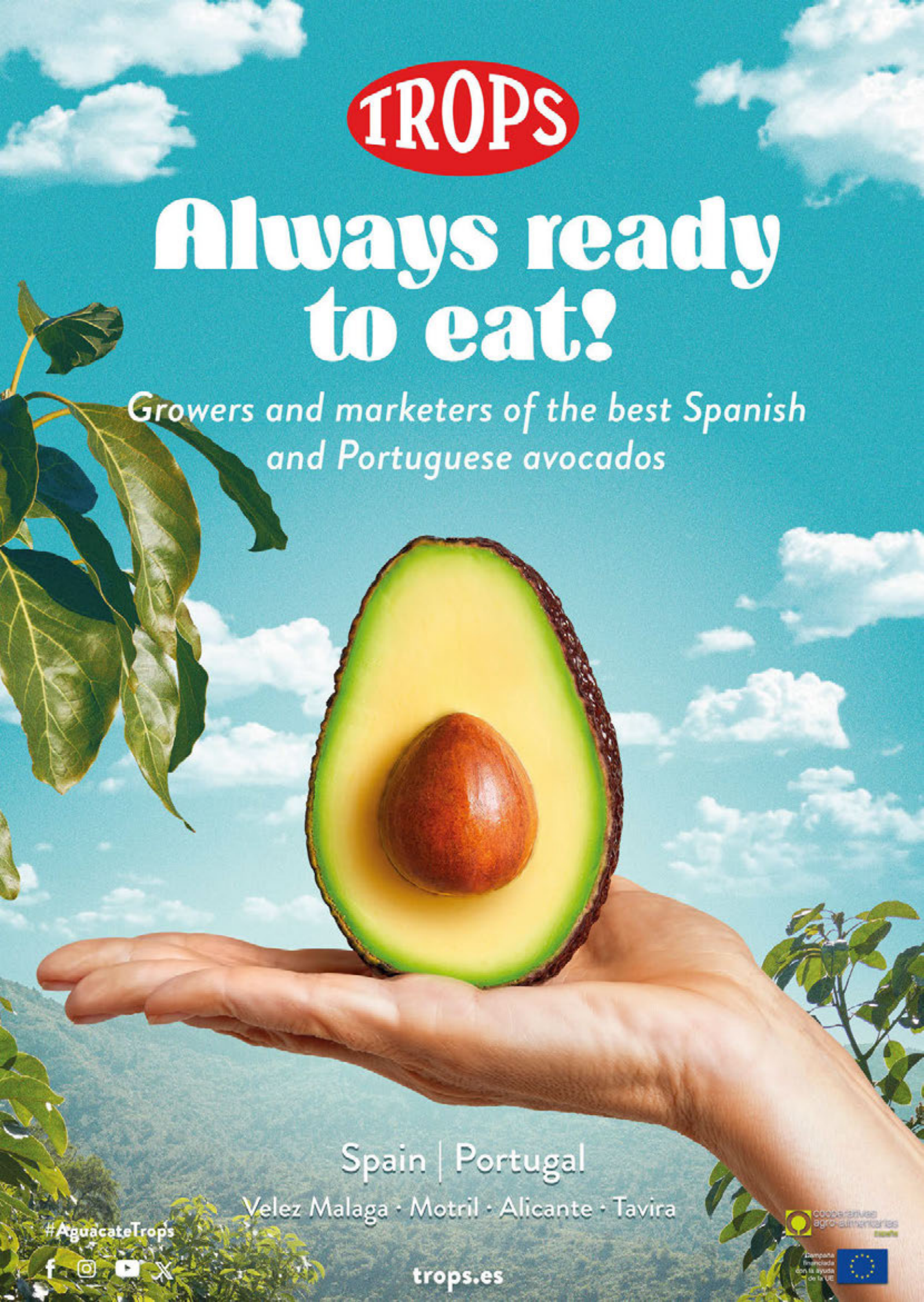
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AVOCADO PROFILES FROM THE HASS AVOCADO BOARD AND CIRAD

UPDATING THE PERU PROFILE

The Hass Avocado Board and Cirad have published complete and updated descriptions of the avocado industries of the major world exporter countries. In each of these original documents, drawn up based on numerous field visits and contacts with the most representative professionals, you will find key agricultural and trade information: history of the industry, extension and geographic breakdown of the cultivation area, production system and structure, varieties present and harvest calendar, outlets with plenty of details on exports, logistics and finally prospects. The countries or geographic zones covered so far are Peru, Mexico (Michoacán and Jalisco), Chile, California, Colombia, Spain, Portugal, Morocco and Greece.

These documents are available to download for free on the HAB website: www.hassavocadoboard.com or from the FruiTrop magazine: www.fruitrop.com

Acknowledgements

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Texts: Carolina Dawson, Eric Imbert, Romy Chaib

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The avocado in Peru

As we predicted in our previous profile published in 2019, Peru has become a giant of the international avocado trade, with exports of nearly 600 000 tonnes to the major markets all around the world. The industry remains at the cutting edge in technical terms, though its profitability has fallen in a more uncertain commercial and climate context. Production should continue to grow over the coming years, albeit at a lower rate, because of more limited investment, and this should be more to do with increased competitiveness than a major expansion of the cultivation area.

History of the industry and production systems

Introduced to Peru in the 15th Century, the avocado is a major and traditional crop. Its production, at a level of around 100 000 t, was sold only on the local market until the mid-1990s. This was based solely on mediocre quality native varieties, and to a lesser degree Fuerte. From then on, a massive agri-business boom came into play, and the avocado was one of the most emblematic crops of this development. The stabilisation of the political situation after a long period of crisis (armed conflict between "Shining Path" and the State) and measures to promote foreign investment created favourable conditions for harnessing the great agricultural potential of the coastal strip, which extends all the way down the country.

True, this zone does have a desert climate – an anomaly given the country's equatorial latitude – due to the presence of the Andes mountain range, which acts as a wall blocking rain from the East, and to the Humboldt cold current, which maintains a high-pressure zone offshore. However, it is a vast open greenhouse, since temperatures are very steady, with no marked extremes, and optimal for photosynthesis. Most of all, large-scale water projects have been set up, making it possible to take advantage of the abundant high-quality water reserves from the mountain range, and overcome the almost complete lack of precipitation. On the other hand, both production and infrastructures are being adversely affected by the recurrent extreme climate events (El Niño, La Niña).

When agri-business took off, investors initially focused on crops such as asparagus or peppers, which enabled them to acquire a good technical command of large-scale horticultural crops for export, in such a particular pedoclimatic context. On the strength of this experience, large industrial Hass avocado plantations started to appear, drawing inspiration from the success of the Chilean model.

They are now benchmarks in terms of competitiveness, under large-scale industrial production systems, which require substantial financial investment. Yields are among the highest in the world, at both the production stage (15 to 20 t/ha) and packing stage (sorting discards of around just 8 %).

Nonetheless, the profitability of the crop has seen a big fall in recent years. On the one hand, the industry has had to cope with the steeply increasing costs worldwide (post-Covid sea-freight crisis, followed by the inputs crisis in 2022 after the outbreak of the Russo-Ukrainian conflict). In addition, at national level, the Agrarian Law Reform has had a big impact on labour costs, while the sector enjoys less favourable tax conditions with the end of the regime implemented in the 1990s to aid the development of the agro-export sector. Meanwhile, economic returns have fallen steeply because of the production boom and the Peruvian supply still being overly focused on the European Union market (EU27). This decline in grower income has taken place in a national context of great political instability (with six presidents in succession since 2018). Hence investment in the avocado industry has seen a distinct slowdown, especially since other agricultural crops have registered better profitability levels (blueberry, new grape varieties).

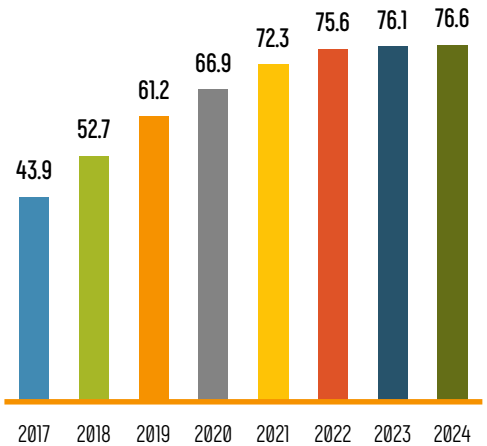
Current cultivation surface area and location

Hass surface areas have undergone exponential growth, especially since the opening up of the US market in 2011. The cultivation area, covering 5 000 ha in 2007, reached 65 000 ha in 2021 according to SENASA's statistics. Since then this expansion has seen a distinct slowdown. The latest survey in 2024 indicated a figure of 76 750 ha. The cultivation area is concentrated mainly in the 2 000 km dry coastal strip running from Chiclayo in the north to Arequipa in the south. There are four major zones, distinguishable by their production systems. From north to south, these are:

- the **Olmos** irrigated area (Lambayeque Department),
- the **Chavimochic** irrigated area (La Libertad Department),
- the lowland valleys of **Lima** Department (especially Barranca on the River Pativilca, Huaura on the river of the same name, Huaral on the Río Chancay, Cañete on the river of the same name, Chincha on the River Matagente), **Ancash** Department (Casma on the river of the same name, and Chimbote on the River Lacramarca), and **Ica** Department (Chincha and around the city of Ica),
- and the **Sierra** (the western foothills of the mountain range, mainly in the south of the Departments of Huancavelica, Arequipa, Cuzco, Ayacucho and Ica).

A significant proportion of production is supplied by members of the ProHass association, which provides both technical support and marketing assistance.

Peruvian Hass avocado - Evolution of planted areas (areas at the end of the year in 000 ha | source: ProHass)

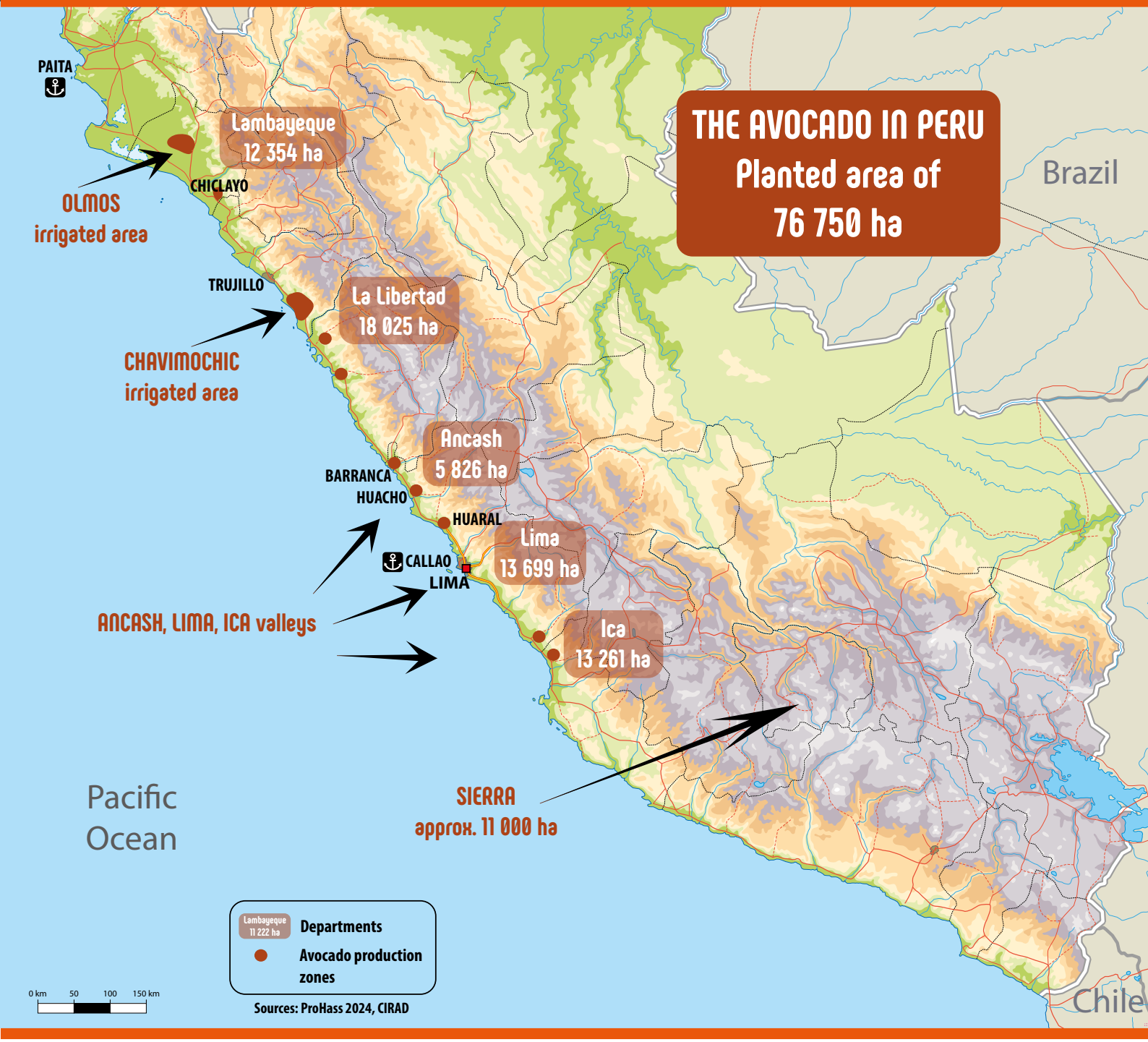


Peru in a few figures in 2023:

- **Population:** 34.35 million (source: World Bank)
- **GNI/capita:** US$15 860/year (source: World Bank)
- **Agriculture:** 7.1 % of GDP in 2022 (source: World Bank)
- **Value of agricultural exports : US$10.3 billion** (source: Agrodata)

Main export agricultural products: (source: Agrodata)

- **Grape:** US$1 831 million fob
- **Blueberry: US$1 481 million** fob
- **Avocado: US$1 065 million** fob
- **Coffee: US$835 million** fob
- **Asparagus:** US$500 million fob (fresh, canned and frozen)

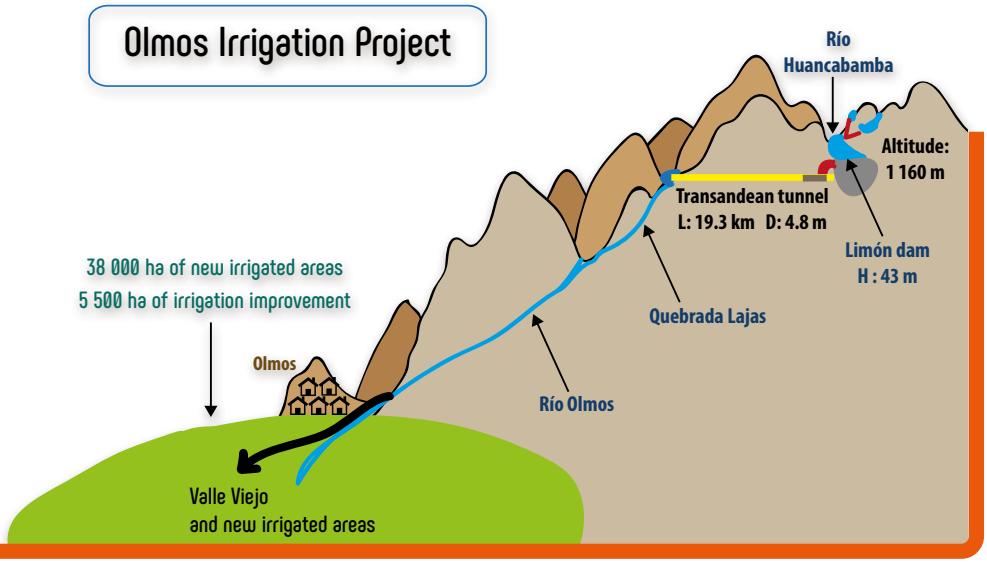


Olmos zone

This 38 000 ha irrigation project, set up ten years ago, has attracted a host of investors due to its combination of ease of development (vast area of flat land) and an early production calendar, enabling Peru to expand its trading window. Its high production potential could be compromised by the effects of climate change, which is ramping up the pressure on water resources and increasing the frequency of heat waves.

This recently developed irrigated area (2014) covers 38 000 ha, and is situated in the north of the country, to the north-east of Chiclayo. This quasi-desert zone was hitherto completely virgin in terms of agriculture, due to its very high aridity (mean rainfall of 20 mm in a normal year) and very poor soils (practically exclusively sandy, with the exception of the southern part where some clay can be found). Conversely, it does have some strong points which encouraged investment in large-scale hydro-agricultural facilities, in order to develop crops for industry and export. Firstly, it was able to draw on the abundant runoff from the Río Huancabamba, which discharges into the Amazon. This water, captured from the eastern slopes of the Andes at the Limón dam, crosses the range via a tunnel around twenty kilometres long, emerging on the western side at Palo Verde dam, which is the start point for an underground network supplying the area. Secondly, its temperatures similar to a natural greenhouse were highly favourable for avocado growing, and agriculture in general. In addition, the extremely flat terrain was favourable for planting large cultivation areas, thereby generating big economies of scale. Finally, in the case of the avocado, the early production calendar proved particularly advantageous in terms of trade (Hass dry matter content reaching 23 % in early/mid-April).

These valuable features attracted many investors interested in the avocado, who set up generally large-scale plantations (plots sold ranging in size from 250 to 1 000 ha). They set up a hyper-tech, completely unique cropping system, tailored to this zone's highly peculiar pedoclimatic properties. The development of this area has had a major economic and social impact on this deprived zone, with the annual distribution of more than $500 million in wages to nearly 70 000 workers. The avocado is the zone's number two crop (more than 7 000 ha in 2024), behind sugar cane and ahead of the blueberry. The planting dynamic, very strong until the start of the decade, has distinctly slowed down in recent years, as the crop's profitability has fallen, the water constraint increased and market prospects become more uncertain.



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Strengths:

- Intensive cropping system and high technical expertise.
- Easily farmed zone (terrain, desert).
- Low sanitary pressure (recent ecosystem).
- Big social externalities in a particularly deprived zone.

Challenges:

- Water availability a limiting factor, extreme temperatures.
- Medium to small sizing.
- Lack of packing infrastructures, and deficient road network.
- Zone highly exposed to extreme temperatures.

The production potential level is very good, thanks to the climate conditions and the vigorous rootstocks used (non-clonal, but generally Zutano or West Indian). Furthermore, the sanitary pressure is low in this initially virgin ecosystem, which means that milder management methods can be used. Hass makes up the bulk of the planted area. Early Hass like varieties do not provide a plus in terms of calendar, though Maluma is being trialled by some operators with a view to achieving better sizing. There has been a water constraint since the start of the project, with the 10 000 m^3/ha quotas allocated by the National Water Authority (ANA) insufficient to cover the needs of the plant. These are estimated at 14 000-15 000 m3/ha with the micro-irrigation systems used by all the growers (at least 12 000 m3/ha with the most economic production systems, combining mulching and techniques promoting deep rooting). Hence approximately 30 % of surface areas were left unplanted, with the water from these plots used to supply the planted areas. Furthermore, large-capacity reservoirs were set up in order to build up strategic stocks during periods when the water need is most limited, and anticipate a fall in the water resource during low-rainfall periods (April to October).

However, the pressure on the water resource has ramped up distinctly in recent years. The flow of the Río Huancabamba has seen a significant drop due to the effects of climate change. In addition, the useful volume of the Limón dam has fallen significantly because of sediment accumulation in the reserve lake. There is a project aimed at raising the dam's height from 43 m to 85 m. Meanwhile, the growers have developed their water storage capacity through the construction of new reservoirs, and have increased ground water withdrawal, which was previously an occasional activity. The sizing, which has always been on the medium to low side (sizes 20/22 predominating, i.e. approximately 185-200 g per fruit), unlike the country's other zones, is on a downward trend. Furthermore, the climate constraint is also more acute. In the last few years, the maximum temperatures have sometimes gone beyond the boundary region which they previously only flirted with. There was a particularly big impact during the 2024 campaign, when there were major falls in yield (an average of 40 % across the zone). Is this a one-off phenomenon linked to the El Niño episode this season, or is it longer term, linked to climate change? The wind is another constraint, with windbreaks needing to be set up.

Three-quarters of the planted area is in the hands of five big production-packing-export groups, which have set up orchards ranging from 600 to 1 500 ha; the remaining surface areas are mainly controlled by companies owning 150 to 500 ha. There are no packhouses in the zone at present. The fruit is transported in harvesting bins (after hydrocooling in the case of one operator) in refrigerated lorries to the packhouses, which are situated in Piura (transport time approx. 5 hours) or even Chavimochic (transport time between 8 and 9 hours). The road accessing the area is poor-quality, and poses problems, especially during the rare stormy periods. The refrigerated containers loaded in the packhouse are then exported via the ports of Paita or Callao. The region's growers have joined up with the Pro Olmos association, and are actively working on subjects of general interest (plant protection, etc.).

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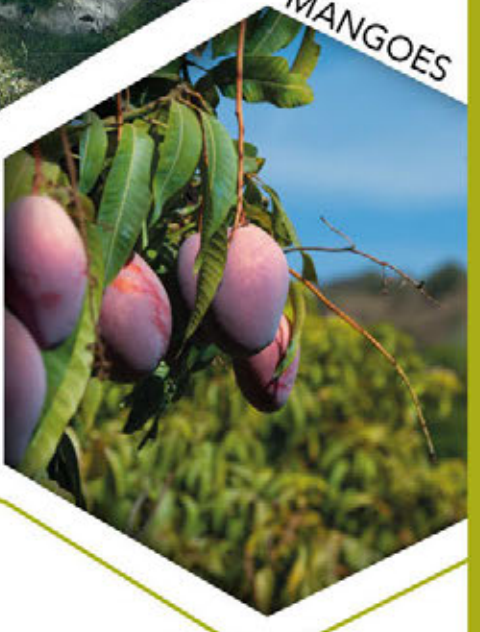

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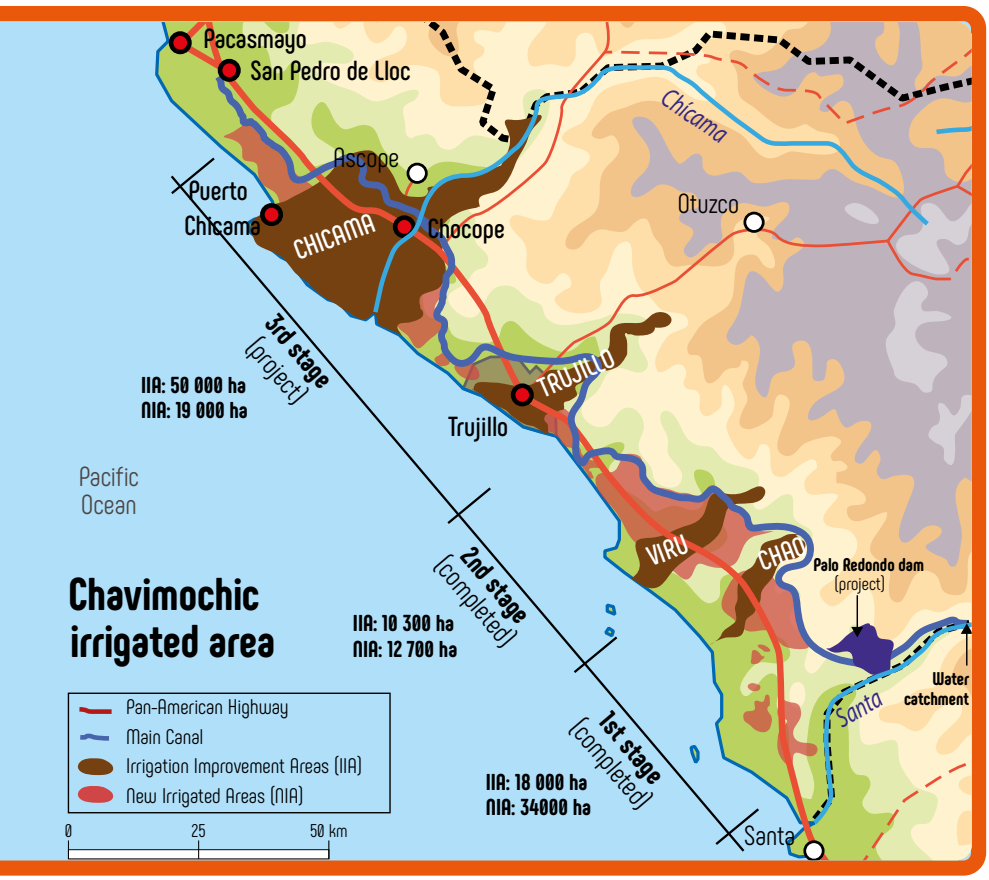
Chavimochic zone

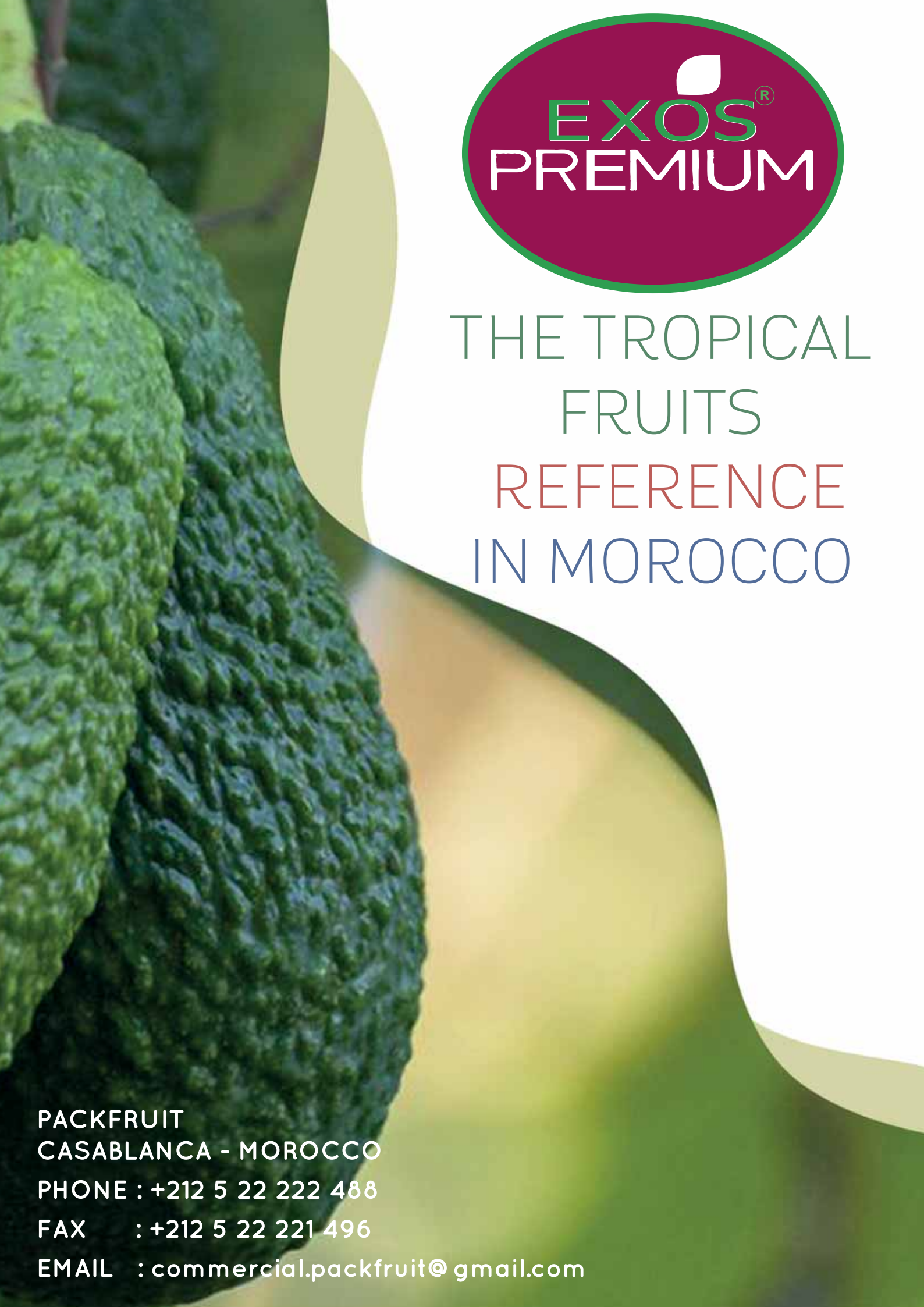
The cradle of the Peruvian Hass industry, the vast Chavimochic irrigated area is the country's main production centre. Its pedoclimatic conditions are just as peculiar as they are favourable for growing Hass, under very large-scale, high-tech and capital-intensive production systems. However, this zone's progress has been more limited in recent years because of lower land availability, saturation of its market window and the growing need for renewal of some orchards.

Chavimochic is the biggest and oldest of the country's irrigated areas (the first lot opened up in the mid-1990s). This large-scale project, situated near the coast in the north of the country, was aimed at improving and developing irrigation in four valleys of the Department of La Libertad (Chao, Virú, Moche, Chicama). It draws off some of the waters from River Santa - the most powerful and regular on the country's Pacific Seaboard, thanks to its big catchment area situated high up in the Andes (rainwater and meltwater). Three of the four valleys have now been developed (stages 1 and 2 of the project), to cover a total of 75 000 ha. The 3rd stage of this project around the Chicama valley, the northernmost in the zone, began in 2024, and should support an additional 63 000 ha, while also improving the irrigation of other areas. By 2027, it should cover the whole of the arable zone (more than 150 000 ha), making Chavimochic the biggest irrigation project in the world.



Unlike Olmos, the water supply is provided by open-air canals. The water quality is excellent, though with high turbidity, especially during the rainy season, which means that a settling process needs to be applied. The big operators are building some reservoirs, to cope with water shortages during the dry periods.

The pedoclimatic conditions are fairly similar to those in Olmos. The soils are also very sandy, though temperatures are even more favourable for the crop, since the maxima are less extreme, not exceeding 30°C (minima of 14-15°C). The terrain, which is a little rougher than in Olmos, is still favourable for planting large surface areas. The zone was one of the country's main production centres for various horticultural specialities for export in processed form (canned asparagus, pepper and artichokes) or fresh form (blueberry, avocado). Chavimochic is the cradle of the Peruvian Hass export industry.



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The crop's pioneer in the country, Camposol, set up its first plantations there in the late 1990s. Surface areas dedicated to Hass in the Department of La Libertad covered approximately 18 025 ha at the end of 2024, situated primarily in the Chavimochic irrigated area. They saw great expansion until the early 2000s, often replacing the asparagus and pepper, and then during the 2010s. However, the planting rate has slowed over the last five years, due to saturation of the zone (lack of affordable land), as well as the trading window and the rise of more profitable crops, such as the blueberry.

The production system is similar to Olmos, highly peculiar and high-tech (widespread fertigation, etc.). While water availability for irrigation is not limited, the volumes are subject to fixed pricing, though this is still cheaper than in Olmos (irrigation level generally 14 000 to 18 000 m3/ha). Hence, and due to the less extreme temperatures, the sizing fluctuates within a higher range than in the Olmos region (sizes 16 to 18 predominating). Early Hass like, or those providing extra sizing (Maluma) are under-developed. Nonetheless, some growers are trialling Lamb to extend the end-of-season market window. For the most part standard density planting is applied. The range of rootstocks used is wider than in Olmos. The calendar is later, with the harvest starting in late April-early May. The average yield is around 16 to 18 t/ha, though this is subject to major variations (between 12 and 22 t/ha depending on the year). There were big falls in yield during the 2024 campaign, due to the very high temperatures, which affected both production volumes and sizing. In an attempt to safeguard yields in the face of an increasingly turbulent climate, growers have modified their crop management to include more advanced pruning strategies, alongside use of hormones, growth regulators and biostimulants (algae, humic acid root stimulators). In order to boost productivity and cope with the structural increase in production costs, the oldest orchards, now aged more than twenty-five years, have started to undergo renewal.

The vast majority of surface areas are in the hands of a limited number of big production/packing/export groups. The top two (Camposol and Mission) each have more than 2 500 ha of plantations. Nonetheless, there are nearly 1 500 growers in the zone, including small and medium plantations.

Strengths:

- Ideal pedoclimatic conditions under highly capital-intensive systems, with unlimited water resources.
- A peculiar yet proven cropping system.
- High production potential (climate conditions, high technical expertise, intensive cropping system, no water limitation).

Challenges:

- Production highly concentrated during a single market window: trade and logistics under pressure.
- A more fragile open-air water infrastructure.
- Growing need for renewal because of the advanced age of some orchards.

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Coastal river valleys

Departments of Ancash, Lima and Ica

The coastal river valleys, traditional agricultural zones which have partially switched toward export crops, are Peru's number one avocado production centre. The production systems are more diversified and smaller-scale than in the large irrigated areas in the north of the country. Planted areas are now seeing more moderate expansion.

Located on a coastal strip extending 200-300 km to the south and north of Lima, the Ancash, Lima and Ica Departments contain valleys which are desert zones, dotted by rivers running from east to west, from the Andes range to the Pacific. These water courses are fed by meltwater and the precipitation battering the high-altitude zones in the Cordillera. Waterworks have been set up to be able to harness these high agricultural potential zones. Structures such as canals, wells and retention basins have been built to cope with the irregular river flow, with the majority of potential discharge occurring from December to March.

The main production centres of Ancash Department are Casma, on the river of the same name and Chimbote, on the River Lacramarca. In Lima Department, we can find in the north of the zone the Barranca zone on the River Pativilca, Huaura on the river of the same name and Huaral on the river Chancay, as well as Cañete in the south. The main avocado production areas in Ica Department are in the north of the Chincha zone on the River Matagente, and further south and inland, the area surrounding the city of Ica. These three departments have a combined cultivation area of around 33 000 ha in 2024.

Agriculture has a long-standing presence in this zone, where we can find traditional crops aimed at the local market; plus, more recently, export products, such as cotton, the grape, asparagus and citruses. The proximity of the port of Callao (2 to 4 hours by road) is one of the reasons for the zone's agro-export boom. The growers primarily own small to medium plantations (from twenty to a hundred or so hectares), and already have experience in export crops. So they got into Hass avocado production 15 or 20 years ago, as a replacement or top-up for their other crops. Sometimes forming associations, they have been able to harness the presence of the plethora of pre-existing trading facilities (packhouses), either in partnerships or through service contracts. This enables them to market their various products under the same brand, or their own brand, and also access technical assistance.

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The growing conditions are similar to the north of the country, barring a few differences. Just as in the rest of the coastal zone, there is practically zero rainfall, though the temperatures are particularly favourable and more moderate than on the northern coast, varying between 15°C and 30°C throughout the year. In addition, since the climate vagaries (such as the El Niño phenomenon) are less harsh in this zone, the alternate bearing swings are more limited. This zone was also much less affected than the northern zones during the severe El Niño phenomenon of 2024. However, the humidity level is higher than in the north of the country, especially in the production areas closer to the ocean, such as Chincha where the relative humidity is in excess of 85 %, which exposes the production to a greater incidence of fungal diseases (botritis). Inland, e.g. in Ica, the climate is much drier. The irrigation water quality is not as good as in the north of the country, because of high salinity. The water is derived primarily from groundwater pumping, possibly supplemented by river water for plantations located close to rivers, though this proportion remains strictly marginal. However, while new drilling is limited, there is no water quota imposed, and the quantities used vary between 12 000 m^3 and 13 000 m^3 per hectare on average. The rootstocks employed in the 2010s, when the zone's production took off, are mainly Topa-topa, with a planting density of 6x3 and 6x4, which are suited to the salinity conditions of the land. Finally, the soils are primarily sandy, though heavier in particular in the Ica zone, which increases the cadmium exposure in the soil, particularly in areas previously occupied by input-intensive crops such as the asparagus.

Hence while the average yields are a bit lower than in the north of the country, around 14-15 tonnes/ha on average depending on the technical level of the growers, the later production calendar running from June to late September provides access to a less saturated market window, particularly at the end of the campaign. Furthermore, due to the less extreme temperatures, the average sizing is also bigger, with the predominant sizes 14 to 18 earning better value on some markets.

Strengths:

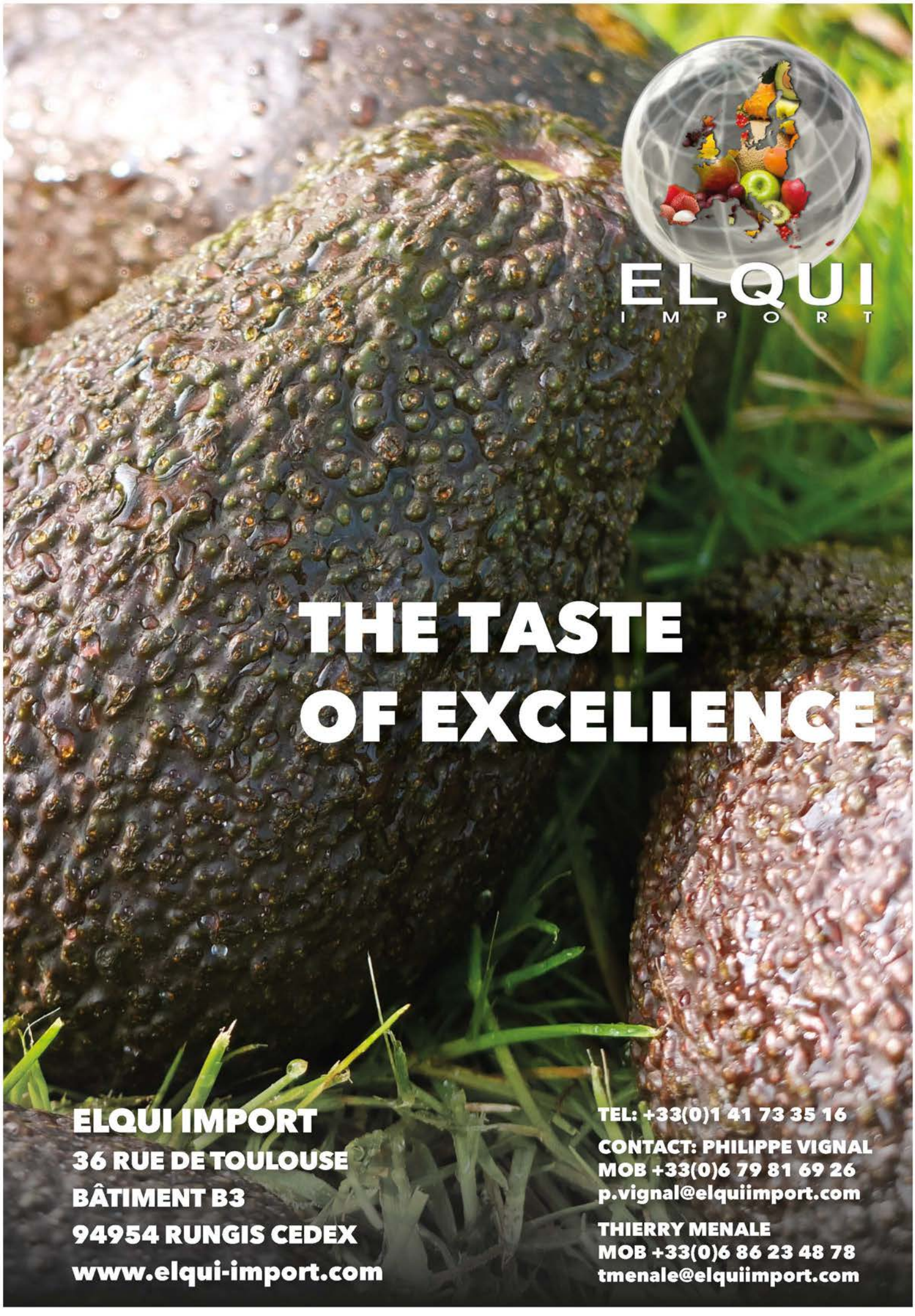
- Excellent climate conditions, less extreme than in the north.
- Proximity of the port of Callao.
- A plethora of infrastructures for exports and technical support for growers.

Challenges:

- Water constraint, in terms of both quantity and quality.
- Grower technical level more variable, lower yields.
- Renewal needed in the short or medium term (50 % of surface areas aged 15 to 20 years).

Given the severe water constraint, in particular the restriction on new drilling, and the low land availability, the planting dynamic is fairly low. While the avocado area expanded considerably between 2019 and 2023, the bulk of this expansion was due to crop replacement, primarily the asparagus, which has practically disappeared from the zone, followed by the grape and citruses, particularly Satsuma.

Expansion in the planted area has slowed down significantly in recent years. The emphasis is rather on replanting, with more than half of the zone's Hass approaching the age of 15-20 years. West Indian rootstocks are now preferred, since they are better suited to the changes in the zone's pedoclimatic conditions. There is a major development potential, with the need for large-scale renewal of Satsuma orchards, which are more than 25 years old. However, growers could now opt for crops more profitable than the avocado.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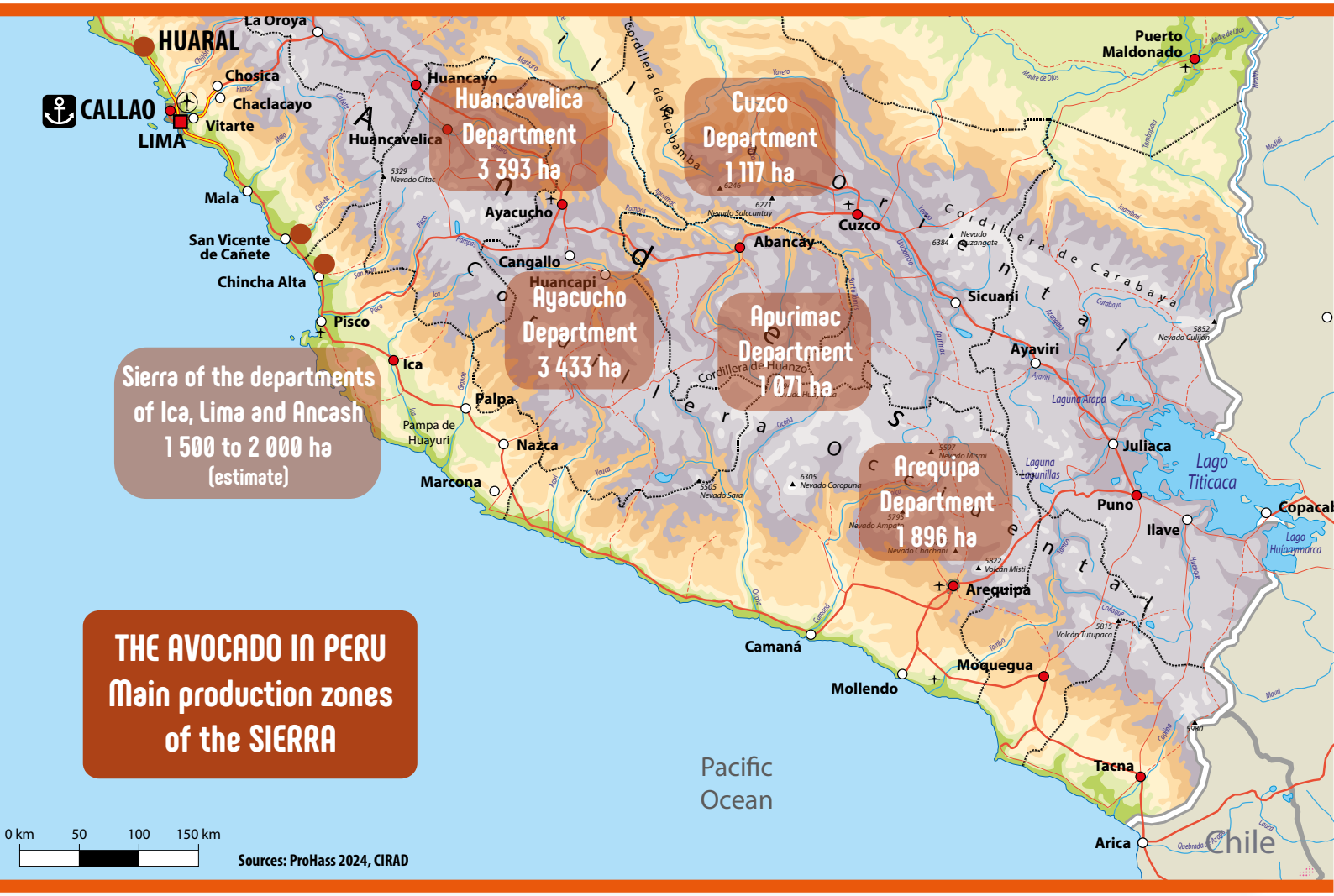
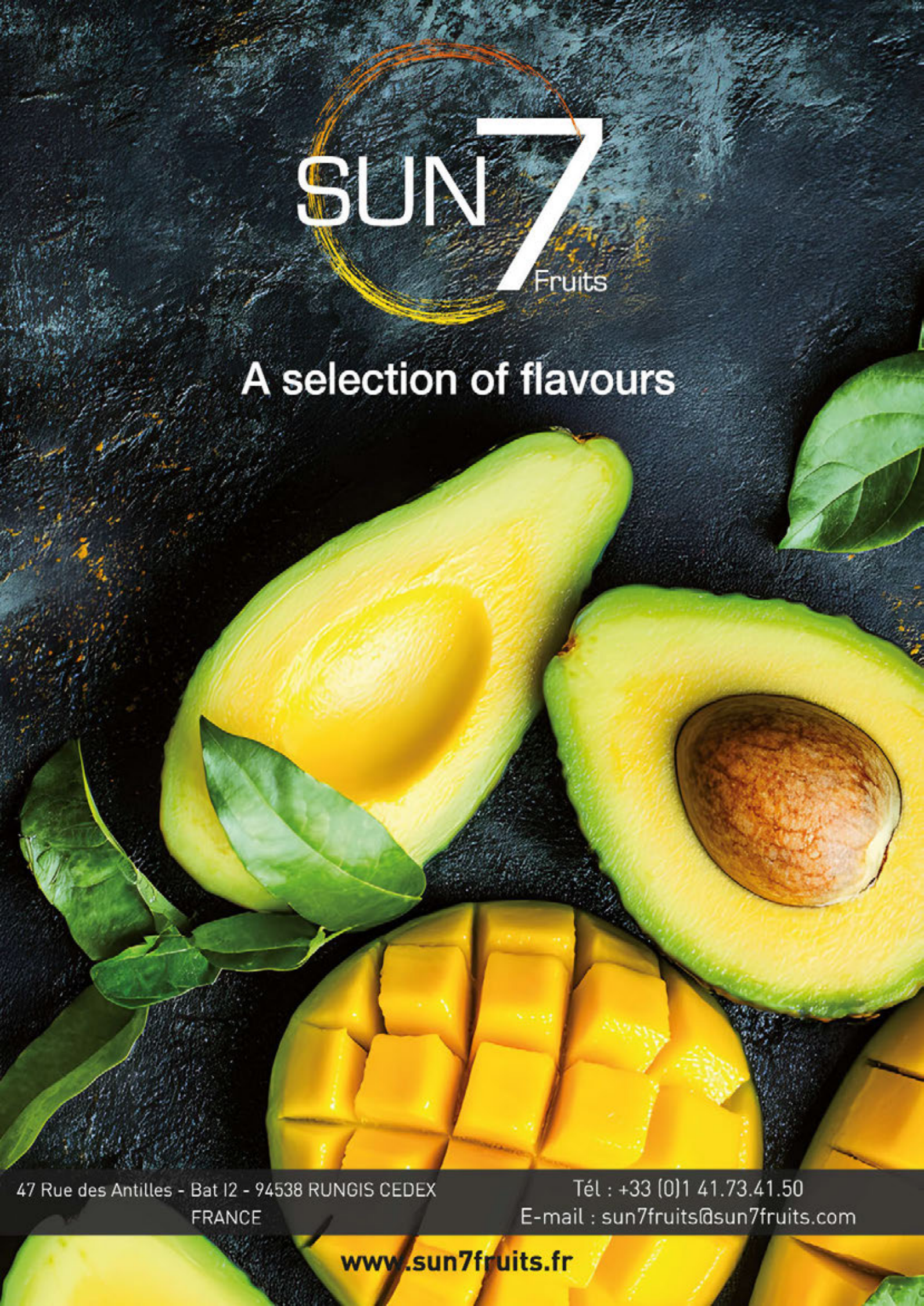
Sierra zone

The Sierra, a traditional arboriculture zone, has a major asset in its early production calendar. Unlike the coastal region, it has a highly traditional production system based on very small plantations, especially because of the physical constraints. Surface areas, hard to estimate because of the small plot size and highly traditional nature of the production system, are on an upward trend.

The Sierra designates a vast high-altitude zone running right the way down the Andes mountain range, which separates the coast from the Amazonian rainforest. Cultivation of green avocado varieties (especially Fuerte), and more generally arboriculture, are traditional activities in the foothills of this mountain chain, with a view to supplying the local market. Over the past dozen years, some small growers, often organised in associations, have gradually converted to Hass. On the one hand, this export variety is more lucrative than Fuerte or the traditional crops (maize, potato), while these isolated zones are particularly deprived. On the other hand, growers are entitled to incentives and technical support from local authorities and certain specialist exporters.

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The Sierra holds a major asset: its non-standard production calendar, due to the lower temperatures than in the coastal part. Hence the Hass season can start in January. This variety is planted on the western slopes. There are two distinct climate stages: one between 1 000 and 1 700 m, where the average temperatures are around 17 to 19°C, and a cooler one extending up to 2 600 m. The main cultivation centres are situated in the southern part of the country, especially in the Departments of Ica, Arequipa, Ayacucho, Huancavelica and Cuzco. In particular, the valleys with the most significant surface areas are as follows, from north to south: Cajamarca on the Río Cajamarquino (Cajamarca), the recently established Oxabamba centre on the Río Huancabamba (Pasco), San Miguel on the Río Torobamba (Ayacucho) and Limatambo on the Río Apurímac (Cuzco). The fragmentation of the plots makes it hard to estimate total surface areas, but they would seem to fluctuate between 10 000 and 12 000 ha.

The production system is very different from the high-tech system employed by the coastal plantations, which requires substantial financial investment. The orchards are small in size (0.5 to 6 ha on average), because of the very rough terrain and highly fragmented land ownership due to the agrarian reform of the 1970s. The cropping techniques are basic, as the small growers have low investment capacities, and the fundamental infrastructures are sometimes lacking (e.g. electricity). Phytophthora has a reasonably significant presence, as the soils are heavier than the very sandy soils in the coastal zone. Nonetheless, the sanitary pressure remains low, thereby helping limit use of synthetic pesticides. Irrigation is not systematically employed, especially in the zones situated above 1 200 m, where the rains are abundant. The water constraint is nonetheless becoming a major issue in some zones. Yields generally fluctuate between 7 and 14 t/ha.

Strengths:

- Early calendar.
- Limited investment and production costs.
- Huge social impact on a host of small growers.

Challenges:

- Tough terrain.
- Highly traditional production system.
- Monitoring production heterogeneity.
- Logistics.

The zone also has its own particular trading system, based on a strong relationship between growers and the downstream segment. On the one hand, those exporters specialising in the zone bundle together the harvests of a large number of small growers based in a particular valley ("Acopio" system). The packing and trading of the production is also pooled. Packing is carried out by packhouses on the coast, after what can be long transport times, as there are no packhouses in the valleys. These operators also provide technical support (training, certification support), a supply of plants via their own nurseries in-situ, as well as equipment or agricultural inputs. They also keep track of the production in order to monitor the harvest stage and ensure homogeneous maturity at the start of the season. GlobalGap certification is fairly widespread despite the limited size of the plantations. In this context the packers favour a long-term relationship with growers, signing multi-year contracts. Production is prepaid at the beginning of the season (from February to mid-April).

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Varieties cultivated

Hass has an increasingly monopolistic hold on the export sector, with more than 95 % of volumes aimed at the international market, as opposed to approximately 80 to 85 % ten years ago. The other export varieties are Fuerte, which remains widely planted mainly to supply the local market, as well as Ettinger, Zutano and Bacon. The Hass Like varieties (early-season such as Carmen and Maluma, or late-season such as Gem and Lamb) are still rarely planted, though some trials are being conducted (Maluma, which could improve the sizing in the Olmos zone, and Lamb which could extend the end of the season). Some traditional cultivars, suited to the particularly extreme conditions in certain parts of the country, are cultivated to feed the local market. Topa topa, a Mexican race derivative, remains widespread in high-altitude zones for its cold tolerance. The black-skinned fruits are rich in oil but of low quality in terms of export. Guatemalan x West Indian race hybrids (Choquette, Collinred, etc.) are cultivated in tropical climate zones in the east of the country.

Hass

Fuerte

Hass avocado – Peru – Production calendar

Zones	J		F		M		A		M		J		J		A		S	
Sierra (Apurimac, Ayacucho, Huancavelica)																		
Sierra (Cuzco, Arequipa)																		
Olmos																		
Chavimochic																		
Coastal valleys (Ancash, Lima, Ica)																		
TOTAL																		

Early zone: low night-time temperatures: Sierra + Arequipa / Nazca
Every 500 metres in altitude: + 15 days earlier

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Outlets

The outlets vary considerably according to the varieties. Hass has practically no local consumption. Since 2012 Prohass has conducted some awareness-raising actions (in 2022, radio and TV advertising campaigns, as well as market promotions), supported by certain players involved in exports. However, local Hass consumption is making very slow headway, approaching just 500 g per capita, whereas Peru's annual avocado consumption per capita is 5 kg. By way of comparison, in neighbouring Chile, annual Hass consumption is 8.3 kg per capita.

The main Hass outlet is the export sector, with sorting rejects peeled and sliced (fruits cut in half or cubed, generally 15 or 20 mm in size), or processed into pulp. These products are exported in frozen form worldwide (17 000 t exported in 2023, according to the Peruvian press).

Logistics

The merchandise is forwarded to the ports by road via the Pan-American Highway, the country's only major north-south axis. Despite some improvements, it remains under-sized (just two lanes on most sections) considering the amount of traffic and bearing in mind that there are no bypasses for most urban centres. Hence transit times are generally long (ten hours or so from the Chavimochic irrigated area to reach Callao). Furthermore, the infrastructures in place on this axis (bridges, filling, etc.) are often damaged by climate vagaries, e.g. by the river overflows during the El Niño phenomenon. Approximately two-thirds of the fruit are exported via the port of Callao (port of Lima), with the remainder exiting via the port of Paita situated in the north of the country (Piura Department). Both are frequently saturated.

The modernisation project on the port of Salaverry, situated south of Trujillo, was launched in early 2024. This port, previously dedicated exclusively to ore exports, as of this year has started accepting containerised merchandise. For the moment, the shipping frequency remains low, with a service of just two container ships per week. Eventually, it will represent a good opportunity for exports from the Chavimochic zone, as it will save three days on routes to Europe and the USA.

After reaching record levels in 2022 during the world sea-freight crisis (up to 10 000 US$/ctn), freight prices reverted to more competitive levels in 2024, slightly below the pre-Covid period. However, voyage times were longer.

Avocado – Peru – Sea-freight logistics

Port of departure	Port of arrival	Transit time
Callao or Paita	Rotterdam	21-25 days
	Algeciras	20-26 days
	USA - East Coast	14-18 days
	USA - West Coast	21 days
	China	30-40 days
	Chile (Santiago)	3-5 days

This relates in particular to voyages to Asia, with the average currently stagnant at around 32 days, whereas pre-Covid it took around 24-25 days. However, the opening of the new Chancay megaport in November 2024 offers some promising prospects. In particular, it should bring down the connection time between the Asian and South American ports to within around twenty days, and therefore help decongest the port of Callao. This large-scale port infrastructure, situated 75 km north of Lima, is the result of investment from domestic mining companies (40 %) and Chinese capital (60 %).

Exports to Chile are 80 % by road-freight, with the rest by sea-freight.

The transport time entails systematic use of controlled atmospheres.

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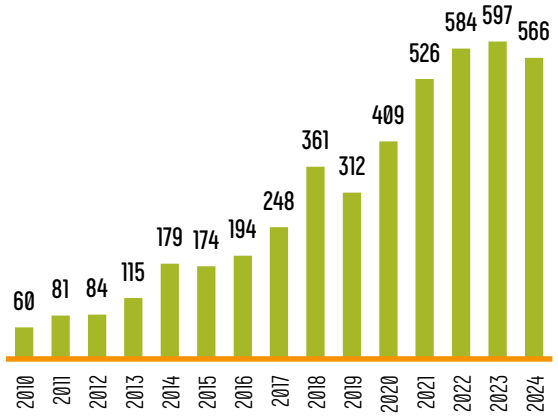
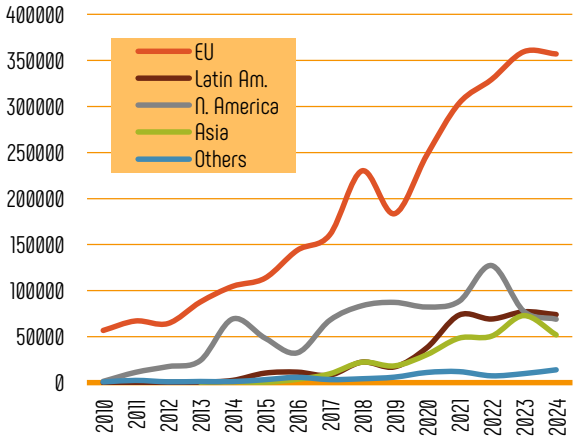
Exports

The breakthrough of the Peruvian Hass industry has been dazzling, with the country managing in the space of fifteen years or so to hoist itself up to the position of the world's second biggest exporter, behind Mexico. Volumes placed on the international market, on a constant rise barring campaigns marked by climate incidents, neared the 600 000-t mark in 2023 (20 % of the world trade). The Peruvian industry was able to take flight based on the growth of the European counter-season market, which remains by far the country's number one export outlet (60 % of total exports). However, to cope with the production boom, Peruvian professionals have worked tirelessly, with the support of Prohass, to seek diversification markets. Hence the borders of some big consumer countries opened up in the first part of the 2010s (in particular the USA in 2011, Chile in 2014, China and Japan in 2015). These destinations have become major markets, taking in large volumes, though these are tending to level out. The US market imports between 80 000 t and 90 000 t in a normal production season, with competition from Jaliscan Hass, approved in the USA since 2023, representing another impediment to volume growth. Exports to the Chilean counter-season market have levelled out at between 70 000 t and 80 000 t, with consumption seemingly having reached maturity. As for the Asian markets, the length of the voyage remained until very recently a major obstacle. This dependence on the EU27+UK market is weighing down heavily on the industry's profitability, with the influx of volumes into the Old Continent during the harvest peak practically systematically causing a major, protracted over-supply crisis. So professionals are working on a way to spread out production better (development of early and late zones). The ongoing diversification process of the outlets also remains a priority: opening up new regional markets, and increasing the flow to Asia with shorter voyage times thanks to the new port of Chancay. The export sector remains concentrated, despite the presence of over a hundred players, with the top six on their own making 35 % of the turnover.

Avocado from Peru - Exports across all varieties
(in 000 tonnes | source: Peruvian Customs)



Avocado from Peru - Exports by destination
(in 000 tonnes | source: Peruvian Customs)



Avocado – Peru – Top 10 exporters in 2023

Exporters	in % of exports by volume
AVOCADO PACKING COMPANY S.A.C.	9 %
WESTFALIA FRUIT PERÚ S.A.C.	8 %
CAMPOSOL S.A.	6 %
VIRU S.A.	5 %
AGRÍCOLA CERRO PRIETO S.A.	4 %
AGROKASA	4 %
CONSORCIO DE PRODUCTORES DE FRUTAS - CPF	3 %
CORPORACION FRUTICOLA DE CHINCHA S.A.C.	2 %
FRUGLOBE GROUP	1 %
CORPORACIÓN AGROLATINA S.A.C.	1 %

Avocado – Peru – Exports

in tonnes	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
European Union	104 650	113 514	143 852	160 476	230 112	183 468	247 057	303 494	329 200	359 438	357 000
North America	69 289	48 568	32 636	67 818	83 648	87 261	82 232	88 423	127 182	77 595	69 000
Latin America	2 717	10 597	11 656	8 311	22 534	17 321	37 974	73 477	69 221	77 044	74 000
Asia	1 196	608	3 749	9 707	22 298	18 315	30 410	48 390	50 468	72 764	51 905
Others	1 192	3 318	5 869	3 409	4 310	6 056	11 187	12 120	7 525	9 939	14 095
Total	**179 044**	**176 605**	**197 762**	**249 721**	**362 902**	**312 421**	**408 860**	**525 904**	**583 596**	**596 780**	**566 000**

Source: SUNAT

Prospects

Major structural assets still in place

The industry still has sizeable assets for continuing to ensure its potential development, although they have lost a little of their lustre. In terms of availability of the main production factors, there is still a large land reserve. The State remains keen on developing new irrigated areas such as Alto Piura and Chinecas, with work on some already underway (Chavimochic 3, covering 40 000 ha; Majes Siguas 2, started though currently on standby). Furthermore, there are large surface areas that could be freed up by uprooting of ageing and/or unprofitable Satsuma orchards in the valleys situated around Lima. There is also still some land available in the Sierra. In terms of water, the situation has become distinctly tighter in most of the zones, because of climate change and maintenance difficulties with some irrigated areas such as Olmos. The water quotas are posing problems for Olmos, groundwater extraction operations are becoming more commonplace and water salinity is rising in the valleys around Lima. One group has actually invested in an expensive cutting-edge grey water recycling system in order to be self-sufficient. Nonetheless, the country still enjoys a relatively favourable situation compared to other dry-climate production zones (Mediterranean, Chile). Furthermore, the country's low sanitary pressure and post-harvest quality assets remain intact.

Falling profitability

While availability of the production factors remains a strong point, the incentive to invest in the avocado industry has seen a distinct fall. In general terms, the country's highly unstable political climate (with 6 presidents in quick succession since 2018) has created a nervy atmosphere for foreign or local investors. In addition, production costs have risen by approximately 20 % over the past five years. Besides the worldwide crisis in agricultural inputs, the steep increase in labour costs, due to the implementation of a new agrarian law in 2021, has had a major impact (increased wages and mandatory bonuses which have taken the monthly wage to approximately $400). With the parallel fall in economic returns on the European market, as crucial as ever, the profitability of the avocado industry has seen a distinct downturn. This slump has been aggravated by the end of the special tax regime, implemented in the 1990s with the aim of supporting the development of the agro-export sector. Other crops now offer better profitability prospects and a more immediate return on investment. This is the case in particular for the blueberry, which has become the country's main agricultural export product, or the table grape, which is making rapid progress.

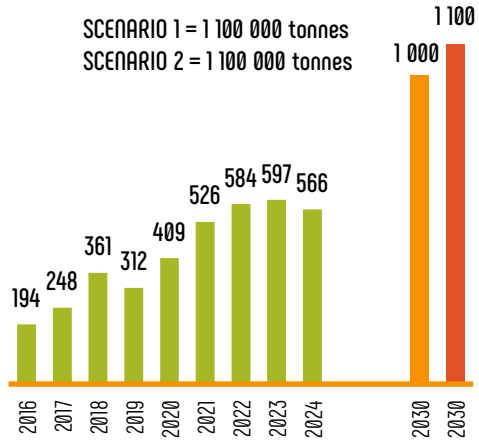
More uncertain market prospects

The market prospects also seem more uncertain for the avocado. While a plethora of borders have been opened up in recent years, Peruvian exporters remain extremely dependent on the European market, which still represents 60 % of the export outlet. The US market may not necessarily open up any wider, in a context of increased competition from Mexico and also Colombia on the Peruvian market window. In Europe, while Peru has nothing to fear except competition with itself, the market window from late May to late August is saturated. Major promotion efforts will need to remain in place to ensure that consumption growth continues to keep step with that of production. Conversely, the commissioning of the port of Chancay is a new asset for finally making a bigger breakthrough onto the Asian markets, thanks to shortened voyage times (22 days instead of 35 to reach China, with the added option of accessing the Indian market). The development of these markets, currently marginal or static, will depend not only on the substantial efforts to be made in terms of promotion, but also investment in downstream structures, which are not currently in the hands of Peruvian exporters (refrigeration chambers, etc.). The local market, which hitherto has shown little response, and the other non-saturated markets on the continent also remain interesting avenues, though probably in the medium or even long term. The issue of cadmium residue is a point to keep an eye on in some zones, since it could have an impact on some export markets, including Europe. Prohass is working on this aspect.

El Niño or climate change?

The steep production downturn seen during the 2024 season in the northernmost production zones, and especially Olmos, is also raising questions. Are the excessive temperatures causing this fall transient and due to the high-intensity El Niño phenomenon of 2023-24, or do they indicate a longer-term trend due to climate change in a zone historically at the upper limit in terms of temperature? The question is being asked, and this too is a potential impediment to investment in this part of the country.

Peruvian avocado - Exports projection
(in 000 tonnes | source: Peruvian Customs)



Towards a period of maturity

The Peruvian industry is no longer "making giant strides", as proclaimed by our title in the first version of this profile, published in 2019. It is heading towards a degree of maturity. Replacement crops, such as the blueberry or table grape, are now more profitable. In addition, the market development prospects are more uncertain, with Asia potentially becoming a powerful catalyst for growth in the medium or long term. In this context, efforts will relate mainly to production system adjustments to optimise yields and competitiveness. The technical improvements already being embedded relate in particular to optimising irrigation, tree nutrition (biostimulants), pruning and rooting. The need for the renewal of a significant proportion of the stock (8 500 ha aged more than 15 years, of which nearly 5 000 ha aged more than 20 years) will provide a chance to opt for rootstocks that are more productive (own selections) and/or better suited to the new pedoclimatic conditions (salinity, especially in the Lima valley zones). The planted area expansion should no longer be a large-scale and general trend, but moderate and limited to zones enabling Peru to extend its trading calendar (early zones such as the Sierra, where production quality is nonetheless more heterogeneous, and late zones). Climate change could have heavy impacts, in particular in the northernmost zones such as Olmos (water availability, heatwaves).

We have decided to base our 2030 projection on the following hypotheses:

- limited surface area expansion, and primarily in the zones that could extend the calendar;
- increased productivity by fine-tuning the technical systems;
- uncertainty over the Olmos and Chavimochic zones in the current context of climate change, leading to two yield hypotheses.

SCENARIO 1

Avocado – Peru – Estimated surface areas and yields by 2030

Zones	Surface areas in 2024 (ha)	Surface area hypothesis for 2030 (ha)	Yield in 2023 (t/ha)	Yield hypothesis for 2030 (t/ha)
Ancash / Lima / Ica valleys	32 786	+ 400 ha/year	14.0	16.0
La Libertad / Chavimochic	18 025	+ 200 ha/year	15.5	17.5
Lambayeque / Olmos	12 354	0	16.5	18.5
Sierra	13 385	from + 600 ha to 400 ha over the period	10.0	11.0

Avocado – Peru – Hypothesis for progression of young orchards to their prime (in % of potential at maturity)

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
20	40	60	80	100

Hypothesis of replanting orchards at 20 years
Hypothesis for sorting discards: 8 % of production discarded

SCENARIO 2 **= SCENARIO 1 with 20% yield drop in the north (Olmos / Chavimochic) due to climate change**