2018 Global Food & Agriculture Investment Outlook

Investing profitably whilst fostering a better agriculture

A 360° overview of the investment landscape across the asset class, with an up-to-date analysis of the major asset strategies, and a special section on the South American opportunities.

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EDITORIAL

The food & agriculture asset class:
Towards an efficient and sustainable food and agriculture system

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As we start 2018, steadily rising asset prices and falling volatility have become the norm, global growth remains solid, and optimism prevails across asset classes. The improving economic growth offers a constructive outlook for continued growth in consumer demand for all the spectrum of food and agricultural (F&A) products. Investors can find many reasons to be encouraged about the sector in the New Year.

Contrasting this growth, 2018 will see persisting uncertainty in global geopolitics, a tightening monetary cycle in some of the largest economies, a likely revival in consumer price inflation and potential increased volatility in financial assets, amid high valuations across nearly all asset classes.

Looking beyond, the world faces significant challenges, clearly framed in the UN's 17 sustainable development goals. Our industry faces many of these challenges and other multi-year trends which will continue to disrupt all the food and agriculture value chain.

Despite the short-term dynamics of prices and profitability, the industry is well placed to attract increasing capital flows globally to meet these complex challenges.

We believe that steady demand growth and the efforts to increase agricultural efficiency, sustainability and distribution infrastructure, growing demand for healthy food & beverages, and the opportunity to reduce food waste will be important drivers of investment, with technology playing a growing role. In short, we need to build a more sustainable agricultural system, which raises important implications.

We hope you enjoy the reading, we share our best wishes for the New Year and we look forward to exploring the vast opportunities in this sector together with you.

> "Over 440 investment funds specialized in food & agriculture investments manage $73 Billion in assets.

Highlights from the study

- The F&A value chain provides an ever-growing pool of investment opportunities. At present, over 440 funds are operating in the food & agriculture sector, against 38 in 2005. As of 2017, these funds manage around $73 Billion in assets.
- The sector has attracted private and institutional investors – Pension funds, endowments, SIFs and family offices are increasing allocations to this sector – and is rapidly becoming an important sector for impact-related investments.
- The number of funds is growing across mainstream asset strategies such as farmland and private equity, but also across niche areas like venture capital and private debt.
- The institutionalization of the asset class is also driving innovations in terms of investment strategies and capital structures.
- The subdued commodity prices and the lower farm income has shrinked margins along the value chain, prompting investors and managers to search for better margins in value added activities and in new consumer-driven themes.
- South America is turning to a more market-friendly political and economic environment which may offer the regional food and agriculture sector an opportunity to become an ever more important supplier of food to the world and a source of sustainable development for the region.

EXECUTIVE SUMMARY

The sector at a glance

- **The last ten years have seen the emergence of the global F&A sector as an institutional asset class with increasing interest from private and institutional investors alike.**
- **Between 2005 and 2017, the number of investment funds specialized in F&A assets jumped from 38 to 446, with current AuM in excess of $73 billion,** excluding forestry funds, according to Valoral's proprietary database.
- **A growing population together with greater economic prosperity in emerging markets means that demand for food will only increase in the coming years.** Valoral Advisors expect more investments in farmland across the world, combined with increasing capital raised within private equity and venture capital strategies.
- **2017 saw an end to the declines in most commodity prices, which had been ongoing since 2011. It also coincided with a weakening U.S. Dollar.** But while the fallout from the commodities super cycle triggered a collapse in investment in supply that ultimately caused prices to stabilize across the energy and metals sectors, supply continued to expand in the agriculture sector and a glut of crops has kept prices in multi-year low levels.
- **This has been the most relevant trend in the F&A investment space in recent years, and a major driver for profitability:** Low prices mean margin pressure for farmers, ag input suppliers and grain processors and traders, while it is a boon for animal protein companies and the broader packaged food industry, which is also under disruption driven by changes in consumers' habits and an innovation wave across the broad F&A sectors.

The assets' spectrum: The growing prominence of private assets

- Over time the assets under management by F&A funds have evolved driven by the search for returns – cash yields and capital appreciation – and by investors' interest.
- **As the asset class evolved, there has been a shift from public strategies towards private strategies.** While in 2010 the public strategies represented 62% of total AuM, in 2017 they were only 11%.
- **Listed equities:** We track 38 funds and ETFs with total AuM of around $4.6 Billion, which invest across the F&A value chain. 2017 was marked by the mega mergers and a tick up in most subsectors.
- **Agricultural commodities:** **2017 marked a bottom for most ag commodity prices.** The exceptionally good weather conditions dampened most agricultural crop prices and absent major weather disruptions it is a consensus among most analysts that global grain surpluses will continue over the coming years.
- **Surging supply is likely to keep prices subdued, with support coming from continued growth in demand across the board. Outside the agricultural sector, an improving outlook for the energy sector may put a floor in agricultural commodity markets**, particularly in those that can be used in ethanol production. Crude oil prices ended 2017 above $60 a barrel, a milestone not seen in more than two years. More broadly, continued world GDP growth may start affecting commodity prices during 2018.
- **Private debt:** **It is an asset category that is not part of most F&A investment strategies, yet it continues to grow.** Amid private debt strategies, there are different opportunities driven by the investment term, the purpose of the financing and the type of collateral used.
- **Agriculture structured trade finance has expanded quietly during the 2000s as global trade grew dramatically, and further propelled by the 2008 financial crisis and new banking regulations** which resulted in a reduction of capital available to the market. At present, we track 33 specialized funds with over $5.2 Billion in AuM.
- **Green bonds - a relatively new instrument in the global debt capital market – are standard bonds created to fund projects that have positive environmental and/or climate benefits.** So far, most funds invested in green bonds have been directed towards renewables and energy efficiency projects.
- **However, green bonds can be effective way to channel capital into sustainable agriculture and forestry, a sector most exposed to climate change and a major contributor to global greenhouse gas emissions.**
- Among the major agricultural hubs in the world, Latin America is a promising market for green bonds earmarked for forestry and agriculture-related projects.

EXECUTIVE SUMMARY (CONT.)

- **Farmland: Farmland assets continue to attract capital - Valoral Advisors tracks 145 farmland investment funds that manage almost $32 Billion.**
- **Interest among institutional investors in global farmland portfolios was high in previous years, following the capital appreciation of the last decade.** During those years, farmland prices in the U.S. and in the other major agricultural countries rose driven by a robust growth in global food demand that triggered a rush by global investors to secure land.
- **The rapid appreciation ended in 2014 as the sharp drop in ag commodity prices reduced farm income across major regions**. In a world of lower farmland appreciation, farmland investments have been shifting to more active investments and development activities to enhance income.
- **This explains the increased interest in permanent crops, an attractive component to a diversified agricultural portfolio for a variety of reasons**, including their ability to deliver potential higher income and a long-term investment horizon. Institutional investors have been expanding allocations to permanent crops, notably across the U.S. and Australia, usually investing in assets with secured water access and with an organic focus.
- **As we start 2018, current valuations in several farmland markets may offer attractive entry points for long term portfolios**.
- **Private equity: The F&A private equity sector, excluding farmland investments, is the fastest-growing sector in recent years: At present, there are 105 PE funds specialized in this sector, with over $23 Billion in AuM.**
- **As the sector grows, managers are becoming more specialized - targeting promising niches across the value chain -, but also stretching their investment scope - expanding into more venture opportunities and into certain upstream activities -, as they face increased competition from strategic players and new comers.**
- This competition is also increasing valuations, which pressures those managers with large dry powder.
- **Venture capital:** The ag-tech VC space emerged as one of the hot spots in 2017.
- **Valoral Advisors tracks 79 AgTech and FoodTech investment vehicles, including VC funds, corporate ventures and accelerators, with $3.9 Billion in AuM.**
- **In recent years the AgTech and FoodTech ecosystems have expanded beyond North America:** New funds have set-up recently in Europe, Israel, South America, Oceania, India and Asia, targeting local technological innovations and aiming to expand them internationally.
- **Large ag corporations have also developed their own venture arms to take part of this innovation wave.**
- **Other asset strategies within the space include investments in water entitlements – concentrated in Australia's Murray-Darling Basin, one of the world's largest and most productive river basins – and investments in land and water restoration, conservation & carbon offsetting, led by impact investors.**

Institutional capital continues to enter the space

- **Pension funds and endowments across North America and Europe are among the major sources of fresh capital to the sector**, reflecting an evolution in their investment models and their allocation strategies.
- **Some of the largest sovereign wealth funds have also launched dedicated strategies** to pursue long-term investments across the global F&A value chain. In contrast to previous investments pursued by SWFs in the past that targeted exclusively farmland, this time they are taking a broad view across the entire value chain.
- **Trading houses are also active players**: Besides the "ABCD" group, a new group of Asian regional champions has emerged with the ambition to become global challengers.
- **The Japanese trading houses have been expanding also their footprint in the global agriculture space.** Now companies from South Korea and other Asian countries are also joining the ranks.
- **With a much lower profile but with growing appetite for agricultural exposure, family offices from around the globe are increasingly looking to allocate capital to this space.**
- **Impact investors – including families, DFIs, endowments, foundations, investment firms and specialized funds – are among the latest and most inspired investors to join the broad food and agriculture investment space.**

EXECUTIVE SUMMARY (CONT.)

- **The sector offers many impact areas and investable themes;** however, it is fundamental that asset managers clearly differentiate responsible investments with adoption of ESG criteria, from the genuine, mission-driven and outcome-oriented impact strategies. The risk is that we lose the opportunity to incorporate the valuable vision and perspectives from the growing ranks of impact investors.
- **Asset managers are bringing innovations to tackle investors' concerns** by i) enlarging the pool of available opportunities to increase liquidity, ii) developing innovative capital structures, iii) incorporating direct investing and co-investing into the deals, and iv) building institutional track record and strengthening ESG compliance.

2018 Investment outlook

- **As we enter 2018, steadily rising asset prices and falling volatility have become the norm, global growth remains solid, and optimism prevails across asset classes. Consumer optimism is at an all-time high.**
- **The current investment climate may be characterized by improved economic growth around the world – both in developed and emerging markets – which offers a constructive outlook for continued growth in consumer demand for all the spectrum of food and agricultural products.**
- **It is hard to be contrarian going into 2018, yet now isn't the time for complacency:** While momentum is significant and we may move into outright euphoria during 2018, our view is that extreme monetary policy has created significant distortion across all investments, and it is the time to emphasize the importance of investing in value and managing risks.
- **The eight-year equity bull market and the 30-year fixed income bull market can be characterized as at being at late stages in their cycles and vulnerable to disruption. Market change may be coming:** exactly when, where or how it will happen is unclear, but asset owners would do well to take note of these developments.
- The food and agricultural sector is so broad, in terms of asset strategies, geographies and across the value chain, that at any point of time it is possible to capitalize on global macroeconomic trends to drive returns using a dynamic multi-asset approach. In our view, 2018 offers attractive conditions to invest in several food and ag themes.
- There are some multi-year trends affecting this industry which will continue to disrupt all the food and agriculture value chain. In recent years, lower farm income and lower trading profitability pushed investors and managers to expand into higher-value markets and integration opportunities (e.g. permanent crops, animal feed and animal protein, food ingredients, consumer brands, etc.). This shift has increased valuations in those sectors, specially across North America and Europe.
- **More broadly, favorable macroeconomic conditions coupled with consumer demand for healthy products is expected to drive demand in the growing Natural, Organic & Better-For-You segment. Cross-border M&A activity and valuations are likely to remain strong in the broad food packaged sector and to expand into emerging markets, mainly through private equity strategies.**
- **Agricultural real assets offer long term value after the drops seen in recent years, especially in geographies and markets that have the lowest marginal cost of production and that offer optionality for crop and animal protein production and value-added integrated models.** Despite the current low cash yields, a well-diversified portfolio of farmland assets offers resilience and downside protection in numerous ways to private and institutional investors.
- **This approach requires an in-depth analysis of specific opportunities, as the downturn in the farm economy across regions may be prolonged if commodity prices remain on current low levels.** Other risks to consider are the uncertainty around trade renegotiations not just in the NAFTA area but across the world, the expected lift in borrowing costs and possible currencies rebalances across the world.
- **Finally, the margin squeeze in several areas of the value chain, and the disruption from farm to table will likely continue to drive opportunities to innovate in new technologies and new business models around the farm-centric and consumer-centric industries.**

EXECUTIVE SUMMARY (CONT.)

2018 South American investment outlook

- **The fundamentals of F&A production across the region are very solid and the existing broad F&A value chain offers enough market depth to invest into a broad set of strategies.**
- **In recent years, though, South America was among the most affected emerging markets in the world, partially explained by its higher reliance on the broad commodity complex** – energy, metals and agriculture.
- **However, the region is shifting towards a healthier balance of commodity and consumer-driven economics**, and a sounder macroeconomic and institutional environment, which provide the background for different investment opportunities in the F&A sector.
- **Looking broadly at the regional economy, the last indicators confirm that South America is returning to growth.** Brazil's economy continues to recover from its worst recession on record and Argentina's economy finally seems to be responding to Mr. Macri's reforms, while Peruvian growth is picking up after terrible flooding at the start of 2017 and Chile's presidential election results offer optimism.
- **The positive global environment is strengthening and should support the growth in the region. Although the acceleration in growth is positive for the region, the pace of the recovery will be gradual.** Moreover, macroeconomic imbalances need to be addressed to put growth on a sustainable path. To be successful, countries across the region will need to embrace further reforms.
- The F&A sector can promote investments and sustain economic growth. In this context, the local policies and the regulatory framework for the sector will largely determine the development pattern in each country.
- **If in recent years there was a shift in attention towards the Andean region – mainly Peru and Colombia -, due to the opportunities in permanent crops and the relatively friendlier environment compared to the Atlantic neighbors – mainly Argentina and Brazil – as we start 2018 we expand our radar to the Southern cone, with improving prospects for Argentina, Brazil, Paraguay, Uruguay – together the Mercosur trade bloc -, and Chile.**
- **2018 may see a final free trade agreement between Mercosur and the EU**, as part of a global market-opening drive in an otherwise more protectionist mood across the world.
- **Valoral Advisors expects global investor demand for South American F&A assets to pick up, with plenty to be excited about in the region in 2018.**
- Valoral Advisors' preferred investment themes reflect innovations in the food & agriculture business and the evolving economic landscape across the region. Our broad investment themes for 2018 and beyond span the regional food & agriculture value chain:
  - **Increasing demand for high-quality farmland assets and for more frontier assets:** targeting a wide range of opportunities for row crops, through permanent crops to cattle, following price corrections in previous years.
  - **Increased M&A activity:** M&A activity – in volume and number of deals – has been increasing steadily after reaching a bottom in 2015, when the Brazilian crisis and the political uncertainty in Argentina were compounded by low commodity prices.
  - The region will continue to transit the global disruption in the food business, with more M&A activity likely across the broad food and agriculture value chain.
  - Recent fundraising across the region and beyond point to further involvement of private equity firms in the region, on top of the interest from strategic players including global trade houses, which anticipates more competition for assets and valuations on the rise.
  - **Technology:** Increased interest from local farmers, agribusinesses and foreign investors in AgTech and FoodTech local innovation that addresses some of the major challenges faced across the region will drive a larger investment flow in the regional space.

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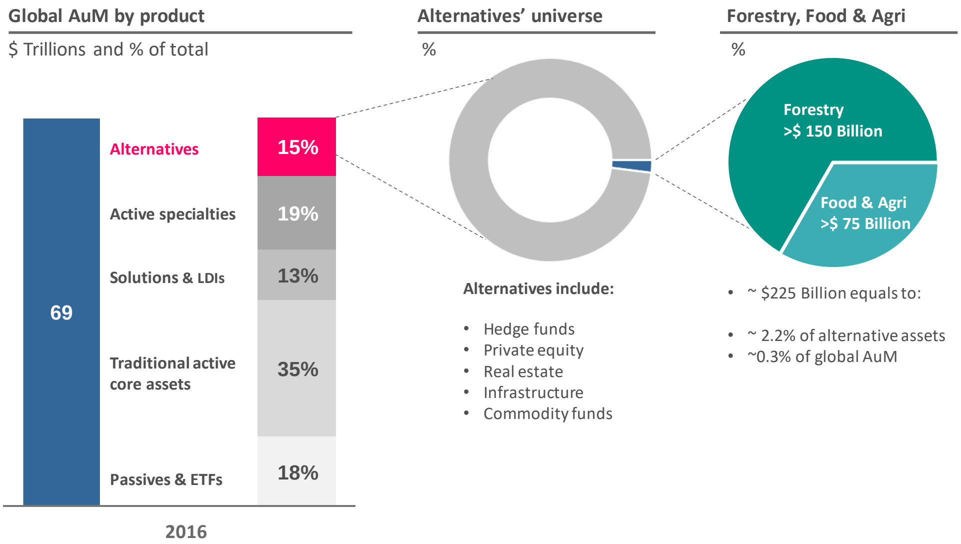
1. THE FORESTRY AND AGRICULTURE INVESTMENT SPACE

Forestry and agriculture assets have been traditionally considered alternative real asset investments. In recent decades, forest investments have grown increasingly attractive to investors looking for asset diversification and competitive risk/return characteristics. A number of timberland investment management organizations (TIMOs) and public timber REITS emerged to tackle this demand.

Nevertheless, forestry is still a small asset class in which close to $150 Billion is invested by institutions today, an amount which is anyways higher than the $75 Billion invested in food & agriculture as tracked by Valoral Advisors and illustrated in fig. 1. Both asset classes still remain a very small fraction of the alternative investment universe, though growing consistently.

Fig. 1: The forestry and the food & agriculture investment space.



Source: BCG global asset management 2017, Valoral Advisors and other sources.

The comparison between forestry and agricultural investments can bring light to institutional investors to better understand their similarities and differences and thus facilitate their allocation process.

The two assets have indeed many similarities, with both intrinsically linked to land and depending on biological growth for the larger part of the yield; and if managed in sustainable ways, both are renewable resources uniquely able to capture and store carbon. And both are clearly important sectors in emerging markets around the world.

However, one basic difference is that forestry is less vulnerable to price volatility as the trees can simply be kept if prices are unattractive, while most agricultural products have to be marketed soon after its harvest. A further significant difference is that the returns on forestry investments have been driven mainly by biological growth, with a minor portion driven by changes in the land value. That is very different from farmland, where the returns come from both biological yield and capital appreciation.

Moreover, forestry assets usually enjoy a larger scale as the sector is more concentrated, compared to the highly atomized agricultural business.

All these reasons help to explain why institutional capital was quicker to enter the forestry space. However, over the last couple of years, there has been a steady incursion of traditional forestry investors into agricultural assets, facilitated by several forestry institutional managers that incorporated farmland strategies to their offering.

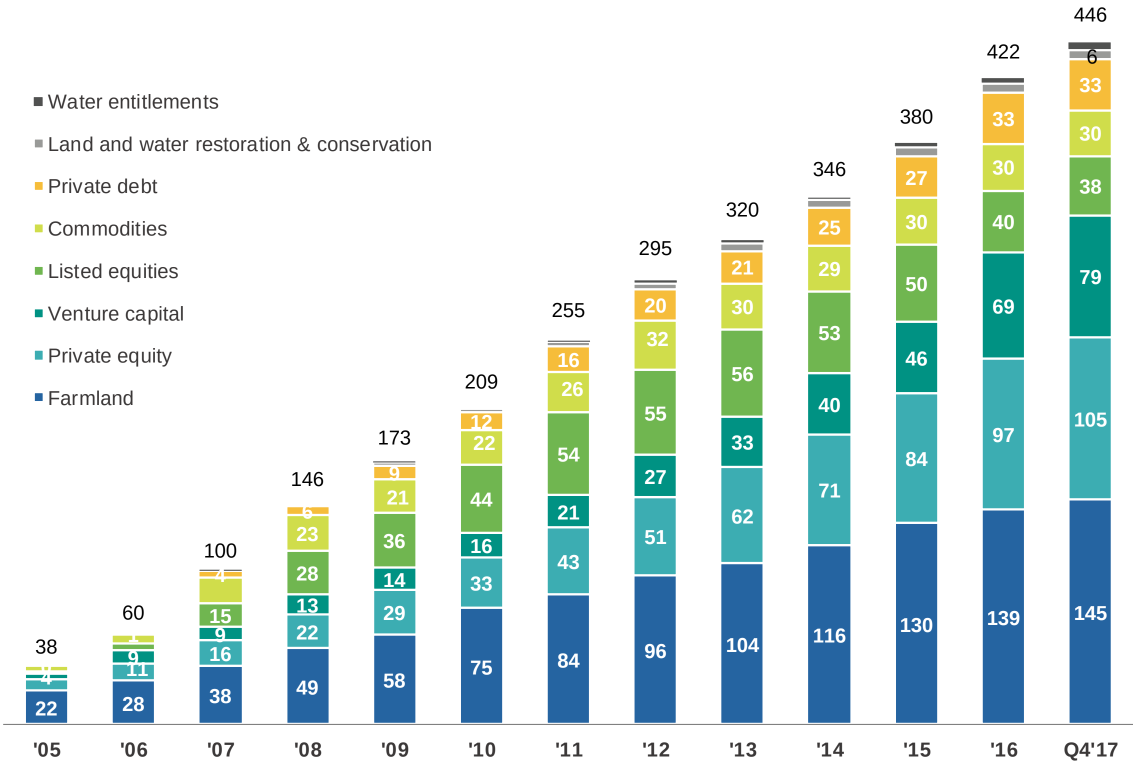
2. THE STATE OF THE GLOBAL FOOD & AG ASSET CLASS

2017 in review: Highlights of the global food & agriculture space

The last ten years have seen the emergence of the global food and agriculture sector as an institutional asset class with increasing interest from private and institutional investors alike. Capital has been flowing into the sector and across the complete asset spectrum – from liquid strategies including listed equities and commodities, to illiquid strategies that include farmland, private equity, venture capital and private debt, among others.

Between 2005 and 2017, the number of investment funds specialized in food and agriculture assets jumped from 38 to 446, with current AuM in excess of $73 billion, excluding forestry funds; and there are a number of new funds coming to the market in 2018.

Fig. 2: Evolution of investment funds specialized in food and agricultural assets.



Source: Valoral Advisors.

We organize these funds in seven groups according to their main investment targets:

- **Listed equities:** Funds which invest in listed companies focused on the F&A industry.
- **Agricultural commodities:** Investments in grains, oilseeds and other soft commodities through futures markets.
- **Farmland:** Funds dedicated to acquiring and/or leasing farmland for row crops, permanent crops and cattle.
- **Private equity:** Funds that invest in established companies operating along the F&A value chain.
- **Private debt:** Funds that provide structured trade finance and other financing solutions to companies in the sector, mainly to commodities processors and traders.
- **Venture capital:** Funds that invest in start-ups and early stage companies that are developing innovative products and services in the broad AgTech and FoodTech space.
- **Others:** Include investments in water entitlements, and investments in land and water restoration, conservation & carbon offsetting.

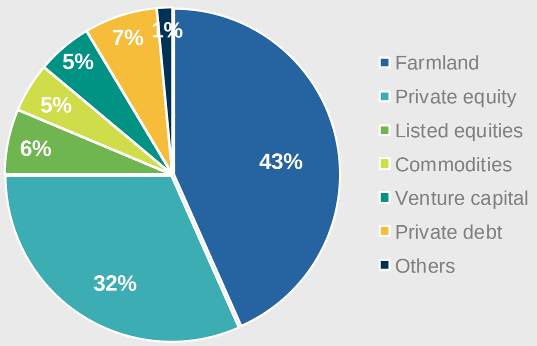
Agricultural real assets and private equity lead allocations to the sector

Despite the persistent low commodity price environment, investors realize that farmland is one of largest beneficiaries of the structural trends that are shaping the global F&A markets.

But it has been the private equity funds who got most traction in recent years. In contrast, investors have been fleeing from commodities as the markets continued to underperform in 2017.

Among the niche strategies, venture capital and private debt are rapidly becoming relevant categories on its own, as both benefit from two strong trends: the convergence of innovative technologies around the AgTech and FoodTech space and the growing need for finance - especially in emerging markets.

Fig. 3: AuM by investment target.



Source: Valoral Advisors.

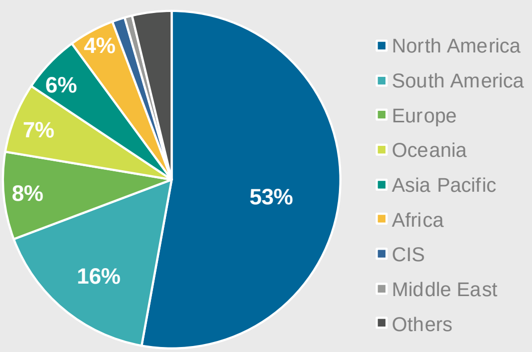
A truly global asset class

North America is the leading destination with 53% of total AuM, considering the main target region by the funds tracked and weighted by their AuM.

North America has consistently represented more than 50% of the total AuM over recent years, backed by investments across all major asset strategies and their leadership position in listed equities and commodities.

Even as U.S. farmland prices have recently peaked and look like trending downwards and farm income is down following low commodity prices, several U.S. farmland and private equity funds have continued to raise funds.

Fig. 4: AuM by main geographical destination.



Source: Valoral Advisors.

South America remains one of the most pursued markets, despite the recent headwinds from lower commodities' prices and weaker macro conditions in previous years. As described in the special section of this report, the region is well placed to attract increasing capital flows into the sector during 2018.

Europe is consistently attracting interest from both institutional and private investors. Farmland assets across Eastern European countries that are part of the EU28 continue to be in demand and there are some attractive opportunities in Western Europe, such as organic farming in Denmark and permanent crops in the Iberian Peninsula. The regional private equity and venture capital sectors also continue to broaden driven by the large consumer market and the opportunities to adopt more technology across the F&A value chain.

Australia and New Zealand are also growing destinations for F&A investments as they capitalize on their low risk institutional profile and the strategic position as food suppliers to China and the Asia Pacific markets.

Allocations by asset strategy: The growing prominence of private assets

Over time the assets under management by F&A funds have evolved driven by the search for returns – cash yields and capital appreciation – and by investors' interest.

As the asset class evolved, there has been a shift from public strategies – involving mainly listed equities and commodities – towards private strategies – including private equity and real assets. While in 2010 the public strategies represented 62% of total AuM, in 2017 they were only 11%.

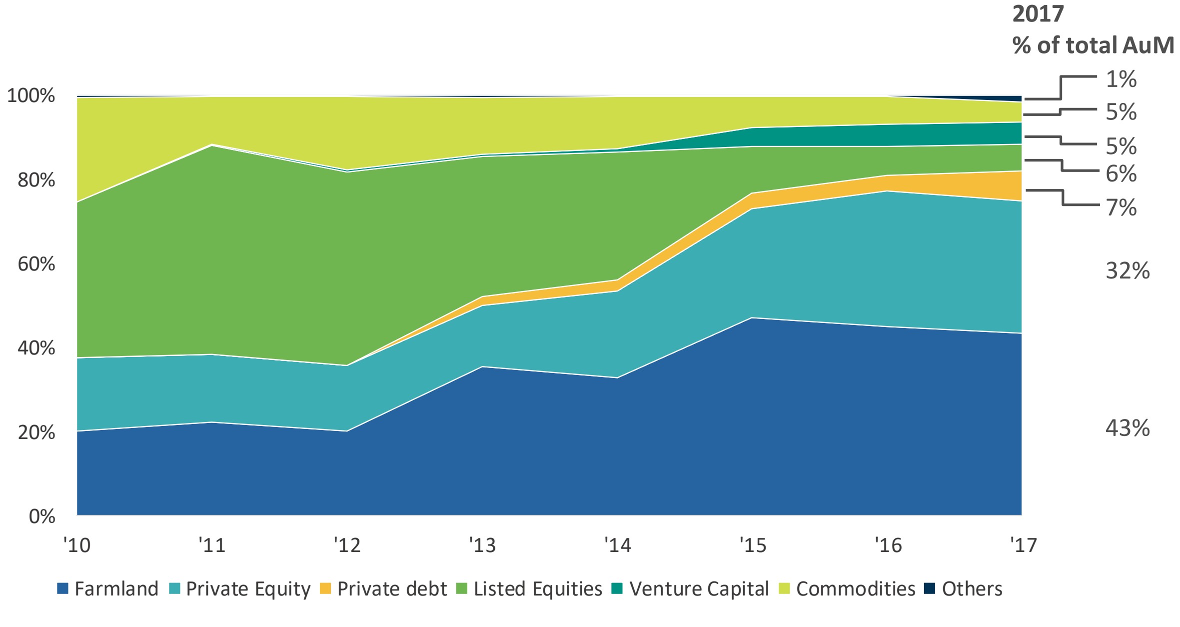
This may look counterintuitive as the broader public markets have been strong as of recent, with some investors and asset managers reassessing their allocations. But this consistent shift towards private strategies highlights two aspects:

- The nature of the broad food and agriculture investment space, with a fundamental real asset base and a relatively fragmented value chain with a majority of privately-owned assets.

- The broadening opportunities in the space, with a growing number of diverse private strategies that can contribute to specific investment outcomes—growth, income, real return, or a combination thereof.

The following figure illustrates the evolution of AuM by asset strategy according to Valoral Advisors' proprietary fund database, which can serve as a proxy of allocations by strategy over time.

Fig. 5: Evolution of AuM by asset strategy (% of total AuM).



Source: Valoral Advisors.

Among the private strategies, all assets have been gaining weight over time. The continued downward pressure on agricultural commodities over recent years has driven increased interest towards private equity, venture capital and private debt, leaving farmland funds struggling to raise new capital.

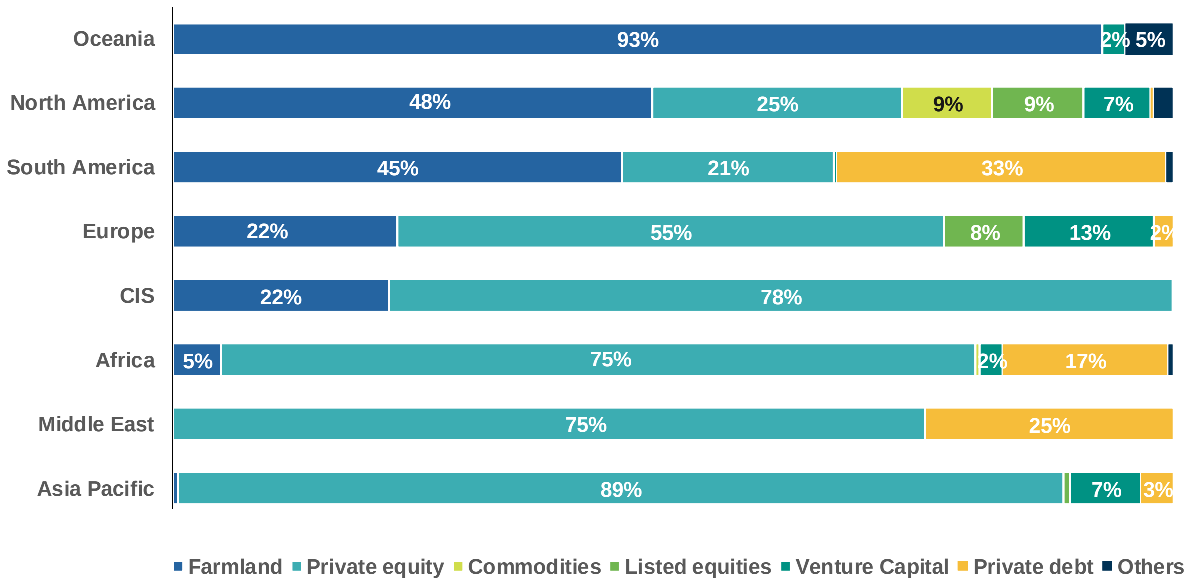
Readers should take precaution, as this is only a partial picture of the asset class: the pool of funds analyzed is not exhaustive and companies and investors manage an important portion of their investments in the asset class through direct investments. Please read our methodological notes and disclaimer in the back cover of this publication.

The geo-allocation matrix: Tracking global capital flows

The F&A asset class is not homogeneous: The major regions around the globe show different allocation patterns that reflect their competitive strengths and their attributes for private and institutional capital.

The figure below aggregates the asset allocation mix by geographical destination for all the funds analyzed. From this perspective, it is evident that farmland and private equity are the major asset strategies in the space, however the mix differs substantially by region.

Fig. 6: Evolution of investment funds that specialize in food and agricultural assets.



Source: Valoral Advisors.

Major regions around the world can be organized in three groups:

A first group includes Oceania, North America and South America, the three most relevant regional farmland markets for institutional investors today. They have extensive arable land and market policies that generally attract private and institutional capital. The U.S. and South America show a diversified allocation profile, which reflects market depth for other strategies including listed assets, private equity and others.

We can identify a second group, which includes Europe and CIS, where investments are mainly concentrated in private equity and to a minor extent in farmland. Both regions have attractive arable land, but access and investment in farmland presents different challenges. In contrast, their agribusiness sector and consumer markets offer plenty of investment opportunities through private equity strategies.

The third group comprises Africa, Middle East and Asia Pacific. There is no doubt these are very different regions, with diverse social conditions, available infrastructure and investment environments. However, they have one thing in common: food & agriculture investments in these regions are mostly oriented towards the associated inputs, services, food processing and infrastructure through traditional private equity strategies.

In the next pages we zoom into the different asset strategies to review the latest trends and the outlook for 2018.

3. ASSET STRATEGIES

The food & agriculture investment space: Framing the opportunities

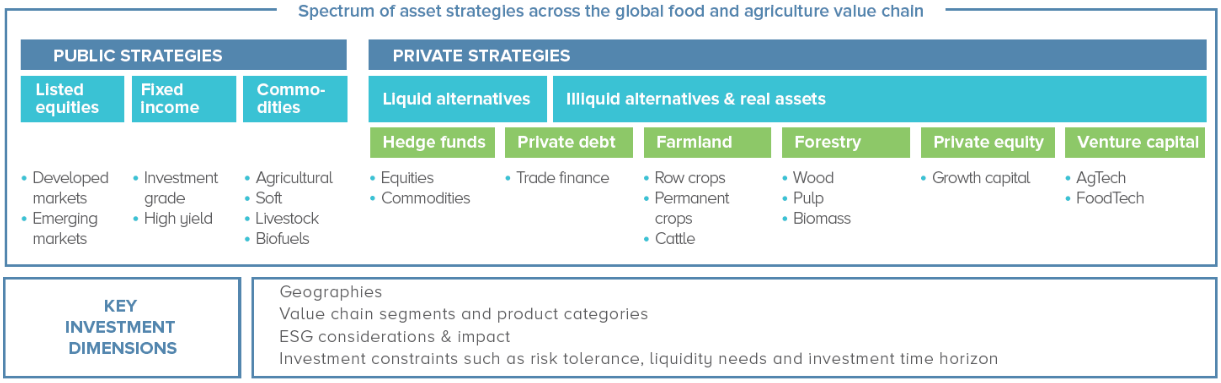
With solid fundamentals and historically attractive risk and return profile, agricultural investments have become increasingly compelling for private and institutional investors over the last decade.

Valoral Advisors believes the food and agriculture sector offers compelling investment opportunities along the entire food supply chain - from production to distribution and consumption. These opportunities result from global macro factors that we expect to endure over the long term, related to demand aspects (population growth, changes in diets and preference for healthier food) and to supply aspects (restrictions on available land and water, impact of climate change).

However, developing an exposure to this relatively new institutional asset class requires an understanding of certain basic characteristics and structures. Indeed, the food & agriculture investment universe is constituted by a broad range of assets with different breadth of styles.

The figure below illustrates the set of main investment opportunities available in this sector.

Fig. 7: The spectrum of opportunities in the global food & agriculture asset class.



Source: Valoral Advisors.

To design an investment allocation into this space, it is critical to understand the differences among them and how they may perform in different market environments. This section will cover the broad spectrum of assets strategies and their main attributes.

3.1. LISTED EQUITIES

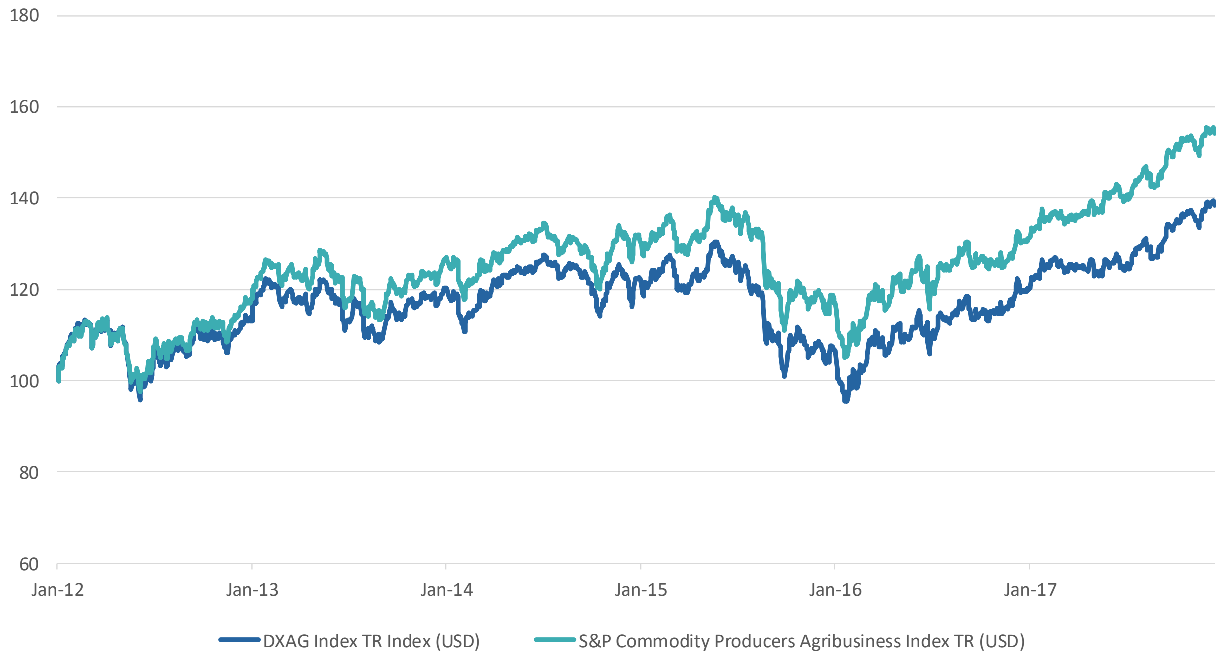
Catching up with the broader market

Investing in equity funds or individual stocks of publicly listed companies active in the F&A industry is an effective way to gain liquid exposure to the sector. At present we track 38 funds and ETFs with total AuM of around $4.6 Billion. Out of them, 10 of them are ETFs, with AuM of $1.5 Billion, or 33% of the assets tracked in listed equities.

Listed equities in the broad F&A sector have had a mixed evolution in recent years, reflecting the broader issues that arise from lower farm income and lower trading and processing margins across many producing regions, including North America, home to most of the constituents of different equity indexes and related funds and ETFs.

Since early 2016, the sector has been recovering, led by animal protein and positive performance among packaged food companies, with other subsectors gaining traction, such as ag machinery. Figure 8 shows the evolution of 2 major ag indexes since 2012.

Fig. 8: Evolution of major agriculture and agribusiness related equity indexes (base 100 = 1/1/2012).



Source: DAX Index and S&P Index.

The S&P Commodity Producers Agribusiness Index includes the largest publicly traded companies involved in agriculture businesses around the world that meet specific investability requirements.

The DAXglobal® Agribusiness replicates the performance of the globally most important Agribusiness companies, selected from the following sub-sectors: agriproduct operations, livestock operations, agrichemicals, agricultural equipment and ethanol/biodiesel.

The dynamics and the performance across sub-sectors has varied broadly and has been driven by some major trends in the sector, a topic described in the coming pages.

The global merger spree: Reshaping the F&A value chain

One of the main trends in the universe of ag equities of recent years has been the wave of mega mergers. Among the deals announced, we highlight the following ones:

- **Dow Chemical and DuPont:** The first mega-merger, announced in Dec'2015, was between Dow Chemical and DuPont, the world's fourth and fifth most valuable chemicals firms, in a $130 Billion deal. The deal, which is now complete, was the largest-ever tie-up in the industry and triggered other mega mergers.

- **ChemChina and Syngenta:** In Feb'2016, ChemChina, a Chinese giant, offered $43 Billion in cash for Syngenta and the deal was closed in 2017. ChemChina plans to merge in 2018 with a local rival, Sinochem, to create a firm with revenues of $100 Billion.

- **Bayer and Monsanto:** In Sep'2016, Bayer, a German agrichemicals giant, agreed to merge with Monsanto in a deal worth $66 Billion. The deal is expected to be closed in early 2018.
- The deal will create a company commanding more than a quarter of the combined world market for seeds and pesticides.

- **PotashCorp and Agrium:** In Sep'2016, Potash Corporation of Saskatchewan Inc. and Agrium Inc. announced the merger. It will be the world's top producer of potash and second-largest producer of nitrogen fertilizer.
- The companies received their final regulatory approval to merge the two companies into a new company called Nutrien, which began trading on 2nd January 2018 with a market capitalization close to $35 Billion.

Acquisitions also took place in the machinery sector with AGCO's purchase of Precision Planting from The Climate Corporation, a subsidiary of Monsanto. The M&A spree is obviously broader and includes dozens of deals among second tier players and the large middle-market.

It should also be expected more consolidation ahead in the trading business as major trading houses move out of non-core areas and focus on specialty products, and other players move to enter the space. Glencore's takeover approach to Bunge earlier in 2017 is a good example.

Different reasons explain the rationale for this spree, including cost synergies, development of integrated offerings, and improvement of efficiency and scope of research and development programs.

But the rationale is more evident when looking at the challenging environment - lower profits, technological disruption and the rise of new players. All this M&A activity could well be a sign that the ag business cycle is bottoming out.

On the other hand, the resulting industry concentration has raised concerns among different farming groups that fewer players will mean less farmer choice when it comes to products and new technologies.

M&A in the food business:
More deals on the menu for the food & beverages industry

2017 also saw a wave of M&A deals in the food & beverages and the food retail sectors. Among them, we highlight the following ones:

- **Amazon and Whole Foods:** Amazon's $13.7 Billion acquisition of Whole Foods has roiled the grocery industry and reverberated through the food world.

- **Campbell Soup and Snyder's Lance:** Campbell's is acquiring snacks company Snyder's-Lance for $4.9 Billion.
- The deal is the soup company's largest ever in its 148-year history.

- **Kellogg's and RXBar:** Kellogg announced its $600 Million acquisition of protein bar market RXBar, one of the fastest-growing nutrition bars in the U.S.

- **Mars and Kind Bar:** Mars has taken a minority stake in Kind Snacks, a fruit and nut bar company, that would value Kind at $4 Billion according to press reports.
- Kind is one of the earliest entrants into the clean labeling movement.

- **Hershey and Amplify:** Hershey announced plans to acquire SkinnyPop parent Amplify Snack Brands for about $1.6 Billion.

These are just few deals among the many ones announced during 2017, illustrating the appetite for food & beverages mergers. Other relevant intended or closed deals included:

- Feb'17: Markets rumored Kraft Heinz was making an unsolicited $143 Billion bid for Anglo-Dutch giant Unilever.
- Apr'17: Tyson Foods acquired U.S. convenience food group AdvancePierre Holdings in a deal worth $4.2 Billion.
- Jun'17: Nestle acquired a minority stake in U.S. online meal-kit service Freshly.
- Oct'17: Unilever acquired Brazilian natural and organic food business Mae Terra.
- Dec'17: Tyson Foods increased its stake in Beyond Meat, which specializes in plant-based meat substitute products.

All these deals point to the most pursued themes by food majors, as they try to maneuver through the disruption in consumer preferences, new diet habits and the evolution in channels and formats.

M&A in the food business:
Shift in consumer behavior, innovation & the role of activist investors

The record levels of M&A activity in the food sector during 2017 are supported by macro trends but also by specific food trends:

- Valuation multiples are very high, credit markets are still highly accommodative, and companies and private equity firms have record levels of capital available, but this is also true for other industries.

- **Most importantly, this renovated drive for food industry consolidation is happening as traditional food companies watch their sales drop and struggle to create growth or innovation on their own.** In their new, reloaded role, large consumer goods companies are seeking to improve margins through divestitures of non-core brands while, at the same time, pursuing innovation through acquisition of healthy, organic, and clean label brands in premium segments, or other emerging categories like meat alternatives. Millennials' new consumption habits remain a driving force for these innovations.

- **But navigating these trends is challenging, as the case of organic milk in the U.S. shows.** After responding to increased demand, U.S. dairy farmers have now found themselves with a surplus of organic milk and lower prices, as consumers jump to dairy alternatives such as almond milk. Back in 2016 French dairy Co. Danone acquired WhiteWave Foods - which makes both Silk soy milk and Horizons organic milk - for $12.5 Billion.

- **Food companies also face pressure from retailers, who face increased competition from convenience stores and, increasingly, online retailers such as Amazon.** To stay relevant, grocers have focused on fresh food to bring shoppers into their stores. This helps to explain the interest in the fast-growing snack category, with a great appeal to the increasing number of people who eat and shop on the go.

The rush for corporate venture arms

The same trends that explain the record M&A activity, help to understand the wave of corporate ventures launched by almost every large food company.

Facing pressure to innovate, these venture teams have been acquiring stakes in emerging food companies with innovative food concepts and up-and-coming brands. There is certainly value for entrepreneurs, as the food majors can help them scale up, and can offer assistance in areas ranging from marketing to distribution.

Activist investors target the sector

To add to the state of influx in the sector, in recent years activist investors have landed in the food industry. The impact of activist investor Jana Partners on Whole Foods that ended with the sale to Amazon is a perfect example of how profit-driven investor activism can work. Other activist investors in the space include Engaged Capital – which invested in the natural foods Co. Hain Celestial -, and Third Point – which invested in Nestlé.

Environmentally conscious activist investors are also raising awareness about the long-term effects of industrial-scale, animal-based agriculture. A great example is Farm Animal Investment Risk and Return (FAIRR), an investor initiative that aims to put factory farming on the ESG agenda and which includes around 40 European investors managing more than $1 Trillion in assets.

All the recent developments point to a continued flurry of M&A in the global food sector into 2018, which has already attracted a growing number of new corporate finance boutiques focused on the food sector across developed and emerging markets.

Listed equities: Are they a proxy for real assets?

As investors' interest in real assets gained traction in recent years, investment managers have been exploring ways to provide exposure to these assets while providing much demanded liquidity to their investors.

A growing number of managers with expertise in real assets are focusing on liquid solutions based on a combination of listed equities, real estate investment trusts (REITS) and commodities. Their objective is to create long-term thematic strategies with monthly liquidity or similar terms.

These strategies can provide potential long-term capital growth and some of them can offer a dividend yield, replicating the return of a diversified portfolio of direct real asset investments.

Farmland REITs: From North America to the world

Among these strategies, the publicly traded farmland REITs are the most readily available. Today, there are two main farmland REITs listed in the U.S: Gladstone Land - listed since 2013 -, and Farmland Partners – listed in 2014 and which subsequently acquired another U.S. farmland REIT - American Farmland.

These companies, and other farmland REITs, can be managed internally or externally and their farmland portfolios usually consist of a mix of row crops, permanent crops and fresh produce, with geographic diversification across the U.S.; medium to long term commercial debt facilities are usually contracted to leverage farmland acquisitions.

Farmland REITs typically lease the land to local tenants, through a wide range of possible lease contracts. Besides crop prices, cash yields are driven by the quality of the portfolio and tenants, the lease arrangements, and efficiencies in scale and expenses. Long-term appreciation in the value of the farmland portfolio is certainly expected to be a major driver of total return.

- Farmland Partners is an internally managed, publicly traded REIT that owns and seeks to acquire both high-quality farmland and land with excellent agricultural development potential located throughout North America.

- As of August 17, 2017, Farmland Partners owned or had under contract over 154,000 Acres valued at nearly $1.0 Billion, farmed by over 110 tenants with predominantly row crops, and also permanent and specialty crops.

- Gladstone Land is an externally managed, publicly-traded REIT that invests in farmland located in major agricultural markets in the U.S., which it leases to farmers.

- As of September 30, 2017, the company owned 73 farms, comprised of over 63,000 acres in 9 different states across the U.S., valued at approximately $532 Million. The company invests in farmland growing a variety of crop types, with farming activities focused primary on fresh produce, followed by nuts and finally row crops.

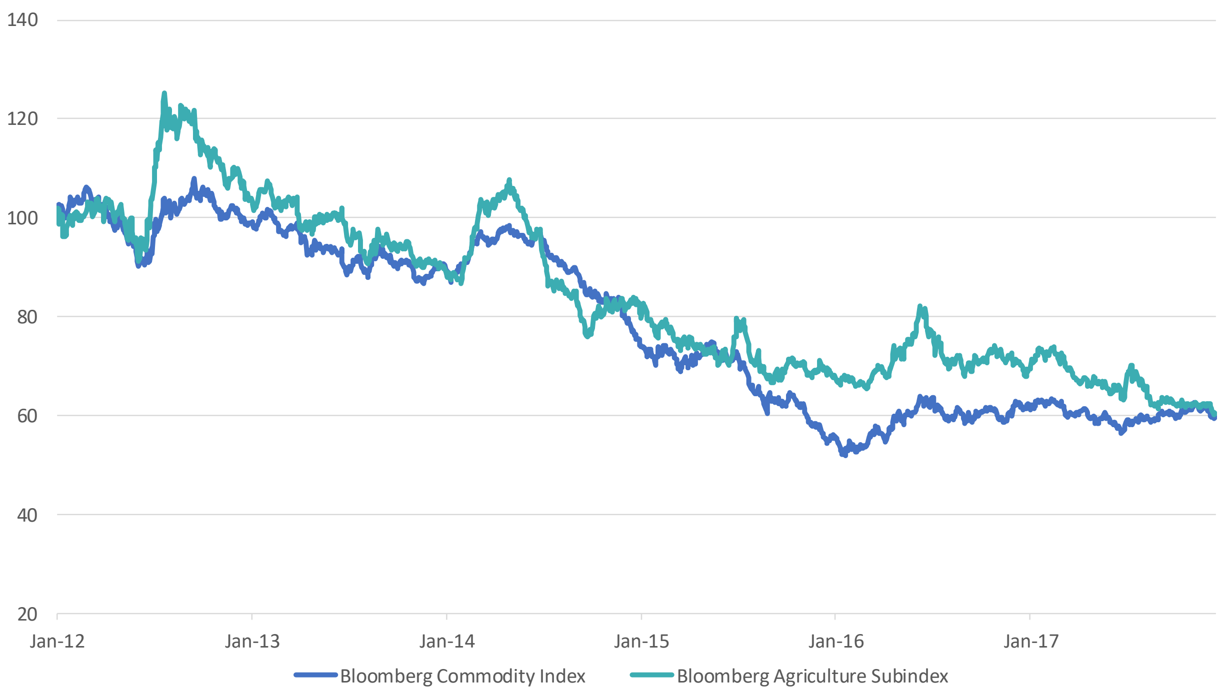
In the years ahead, it may be expected the expansion of existing farmland REITs or the formation of new ones, to target other relevant markets, with the Southern Cone in South America an interesting option, followed by some regions across Europe.

3.2. AGRICULTURAL COMMODITIES

Navigating a new normal or starting a new cycle?

2017 saw an end to the declines in most commodity prices, which had been ongoing since 2011. It also coincided with a weakening U.S. Dollar, which saw the U.S. Index (DXY) falling close to 9% in 2017. The figure below shows the evolution of the Bloomberg Commodity Index and the U.S. Dollar Index.

Fig. 9: Bloomberg Commodity Index and Agriculture Subindex.



Source: Bloomberg.

The fallout from the commodities super cycle triggered a collapse in investment in commodity supply that ultimately caused prices to stabilize across the energy and metals sectors. However, supply continued to expand in the agriculture sector and a glut of crops has helped push the Bloomberg Agriculture Subindex down 50% from a peak set in 2012.

It is worth noting that as commodity prices continued to fall, they dragged inflation down to such low - and sometimes negative - levels that central banks often had to expand their already extensive efforts to return inflation to target. The drop of commodity prices had the opposite effect seen previously in the 2000s.

To make things harder in the agriculture sector, lower price volatility in recent years and the lack of contango opportunities - a market structure which allows traders to lock in profits by buying and storing grains to deliver at higher prices in the future – have reduced trading opportunities.

Zooming into the mainstream agricultural commodities

"During 2016 and 2017, ag commodity prices reached multi-year record lows

Last year's exceptionally good weather conditions pressed most agricultural commodity prices, however performance has varied by commodity groups:

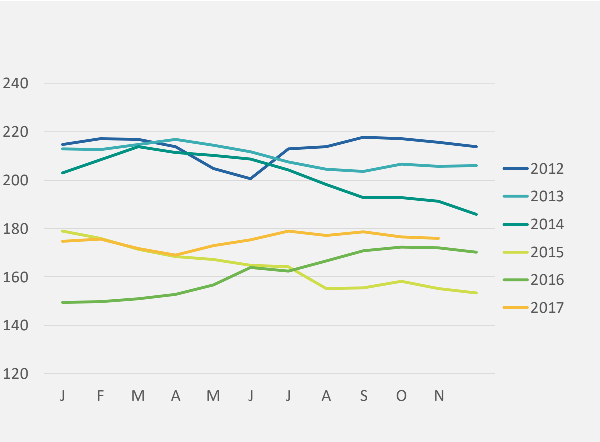
- Meat products were generally more supportive across the board on the back of strong demand.
- Cereals and oilseeds struggled, following record or near record harvests.
- Cocoa prices declined further due to good harvests in Ivory Coast and Ghana despite solid demand.
- Coffee also had a bumper crop which saw prices moving downwards, even with healthy demand.
- Sugar prices suffered from improved harvests in India and the lifting of the EU sugar quota which transformed the EU from a sugar importer into a sugar exporter.
- Prices for dairy have been mixed, lately pressured by the large output in the European Union, where production has been supported by the EU intervention scheme purchases.

Still, prices of the main food categories have slightly rebounded during 2017 from the bottom seen previously in 2016, according to FAO food price and the food commodity price indexes. The index is a measure of the monthly change in international prices of a basket of food commodities consisting of the average of five commodity group price indices and weighted with the average export shares of each of the groups.

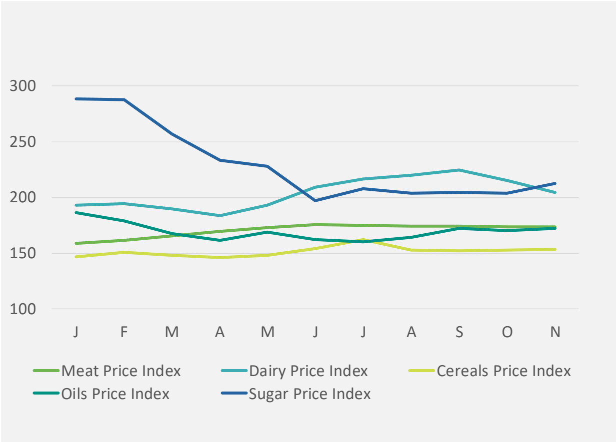
The figure below shows the price evolution of selected agricultural commodities.

Fig. 10: FAO food and commodity price indices (nominal prices).

FAO food price index by year



FAO food price indices by commodity (2017)



Source: FAO Food Index.

Absent major weather disruptions, it is a consensus among most analysts that global grain surpluses will continue over the coming years, as planted areas remain near record levels and improvements to yields are expected in the major producing regions.

In this context, surging supply for a number of agricultural commodities is likely to keep prices subdued, with support coming from continued growth in demand across the board. The continued demand of cereals and oilseeds for animal feed – particularly in China but also in Brazil and other major economies - will also be supportive for agricultural commodities during 2018.

Weather outlook: La Niña is calling

The one weather disruption in the cards is La Niña: In its latest report, the US National Oceanic and Atmospheric Administration informed that the probability that La Niña extends through the Northern Hemisphere winter 2017-2018 is exceeding 80%, with a transition to ENSO-neutral most likely during the mid-to-late spring 2018. Should La Niña strengthen and extend its influence during 2018, the weather phenomenon could bring droughts and floods to different producing areas around the world. Corn is one of the crops that could be most affected.

Outside the agricultural sector, an improving outlook for the energy sector may put a floor in agricultural commodity markets, particularly in those that can be used in ethanol production. Crude oil prices ended 2017 above $60 a barrel, a milestone not seen in more than two years, in another sign that a longstanding global oversupply is easing. Other factor to consider is the record bearish positions in agricultural markets held by hedge funds and other speculative investors heading into 2018. A weaker U.S. Dollar may also help, however here we may have a surprise if the U.S. economy performs stronger than expected in 2018.

Relative value strategies for absolute returns in agriculture

In this context, investors are right to ask why agricultural commodities are good for their portfolios. It is often suggested that agriculture commodities offer several benefits to a well-constructed long-term portfolio. Among them, it is said that they have historically generated equity-like returns and exhibit low, typically negative, correlations with bonds & equities. Moreover, they are liquid investments and can potentially provide inflation-hedging benefits as they are positively correlated with inflation.

Investors who want a cost-effective way to invest in agricultural commodities usually choose funds or ETFs, which are typically rules-based indexes, made of futures contracts on some of the most traded agricultural commodities. For those who think that buy-and-hold strategies generally will not work, there are still ways to take advantage of swings in prices.

Hedge strategies can provide an alternative way to capture value from the agricultural commodities' sector, moving away from the traditional ETFs and indexes. The depth of the agricultural markets, with substitute products, counter seasonal harvests, and multiple production and consumption centers mean that different trading strategies can be developed to capture alpha.

Agricultural commodities have been for long time the target of hedge fund managers, aiming to generate absolute returns which are decorrelated from other asset classes and commodity markets.

Usually these managers combine their fundamental/macro view with their extensive understanding of market structure and commodity market dynamics to actively research and invest in multiple relative value strategies via direct or indirect exposure to the commodity markets in both long and short positions. By investing into a diversified group of investment themes, they can avoid concentration within an individual commodity.

Commodity hedge funds can also incursion into physical markets. One example is the cattle business, particularly in the U.S. where the market is liquid, and futures exist. It is possible to buy cattle, feed, put them in feedlot and sell the futures locking a gain. Participating in physical markets also provides market intelligence that can enhance futures strategies.

3.3. PRIVATE DEBT

Financing food production & trade in emerging markets

It is an asset category that is not part of most food & agriculture investment strategies, yet it continues to grow.

On one hand, for small and medium food and agricultural companies, the lack of financing resources is a major impediment to sustaining or growing their businesses and this trend may be getting worse, creating a need for alternative sources of capital to fill the funding gap.

On the other hand, there are private and institutional investors looking for alternatives to the low yields offered by fixed income and willing to give up some of the liquidity that they get with publicly listed debt instruments.

Amid private debt strategies, there are different opportunities mainly driven by the investment term, the purpose of the financing and the type of collateral used. Amid the opportunities, we highlight the following ones:

- **Trade finance:** It focuses on one of the most critical components of the global food value chain: the global trade. Structured trade finance of agricultural commodities is typically required in international trading. Increasingly, pre-export and agriculture finance are also critical areas requiring funding, particularly as the need to expand agricultural production intensifies.

- **Project finance:** Typically involves ports, terminals, warehousing and logistics facilities, but applies to most intensive capital projects and is expanding into biomass energy projects.

- **Venture debt:** Venture debt is a form of specialty debt financing, usually structured as a combination of a loan along with limited equity investment rights. While established businesses have many options for debt financing, AgTech & FoodTech startups only have access to equity financing to fund their growth. Venture debt can be an effective solution as it provides access to debt where traditional bank lending doesn’t participate, and does that without diluting equity, unlike venture capital.

- **Green bonds:** Although green bonds are conventional fixed income instruments which can be listed in public markets, their relevance and applicability in agriculture make them worth including them in this review.

The next pages zoom into some of these private debt strategies.

Closing a gap in the global commercial banking

Agriculture trade finance has expanded quietly during the 2000s as global trade grew dramatically – growth is not only driven by volume but also by value and the rise in ag commodity prices during the 2000s added pressure to the food trade business as working capital requirements increased substantially. But what happened after the 2008 financial crisis finally positioned the asset category in the global investment universe.

The 2008 credit crisis and the 2011 European debt crisis helped make trade finance more attractive as liquidity issues along with new Basel regulations required banks to reconfigure their balance sheets, resulting in a reduction in the amount of capital available to the market, specially to small and midsize companies. This made the sector more attractive to alternative fund managers.

Even today, international banks continue to dominate the agricultural trade finance market and the growth of alternative trade finance funds has taken so far only a marginal portion. However, the trend continues as banks are expected to face more regulations in the years to come.

Structured trade finance investment solutions were well received by investors, with the expectation of earning attractive risk-adjusted returns.

From a portfolio point of view, these investments not only offer potentially higher interest rates than fixed-income sovereign and corporate bonds – specially in today's markets - but also entail relatively limited risks, as the receivables are usually backed by real goods transactions and may be covered by credit insurance or secured by the importer's bank.

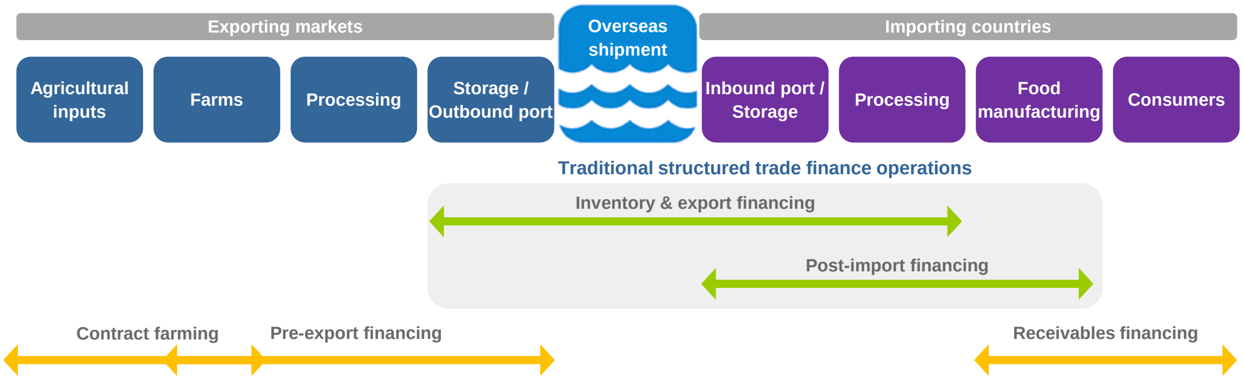
The flip side to the growth observed among these strategies in recent years – mainly across Asia, Africa and Latin America – is the increased competition for the same deals, which has added pressure on yields.

Zooming into agricultural trade finance: An investment strategy with strong appeal

In the purest sense, agriculture structured trade finance can be considered an absolute return strategy with a limited degree of volatility related to the broader financial markets, effectively delivering consistent returns throughout market cycles.

A typical deal in a portfolio of an agricultural trade finance fund involves the issuance of a regular credit facility to a food-related business where the commodity is used as collateral to ensure the loan's repayment. Because the portfolio of loans is not directional, and the typical portfolio duration is short, this type of investments can be structured in a way that can provide monthly income; indeed, one of the most relevant risks is operational execution.

Fig. 11: Financing requirements along the food value chain.



Below we highlight some of the typical characteristics of these investment funds:

- **Operational skills:** Trade finance requires solid operational skills – a true operational platform is required to be successful. Long-term vision is critical; taking a short-term bet on this market is a recipe for trouble.
- **Market segment:** Structured trade finance funds are typically working in the middle market: The large businesses have their own financing or work with large banks and the smaller market is too atomized.
- **Liquidity profile:** The average loan in agricultural trade finance ranges between 60 to 120 days in tenor with the average loan to value ratio depending on the fund’s lending criteria.
- **Risk management:** Usually trade finance funds do not take commercial risks: there is always a physical collateral, which can be complemented with company’s guarantees. The payment risk by the buyer is usually covered with letter of credits or credit insurance, though for very large companies, funds may accept to take the risk.
- **FX and interest rate exposure:** Trade finance funds usually manage all their trades in U.S. Dollars. The nature of trade finance enables the funds to navigate fluctuations in exchange rates: usually the weaker the domestic currency is, the more profitable the export sector becomes. Trade finance funds also enjoy a positive correlation to interest rates: portfolio yields tend to rise as interest rates rise.

Regional trade flows

Agricultural trade finance funds usually have a regional focus, as commercial relationships with clients are region-driven: knowing who, knowing how and knowing when is critical to succeed in this business.

Clients include a broad array of food businesses: producers, processors and traders – dealing with grains, oilseeds, animal feed, sugar, dairy products and fruits.

From a regional standpoint, South America is mostly an origination business, financing pre-export (production and processing) while Asia is mostly a consumption business, with almost half the world's population. Africa is the ultimate frontier: as the agricultural production picks up, the demand for trade finance will offer opportunities for managers and investors.

Finance innovations

As managers chase new opportunities and attractive yields, the sector is expanding into less traditional financing solutions.

Some trade finance funds now include a range of senior, unsecured debt, junior debt and mezzanine debt. Even some funds are now including private equity investments – essentially project finance – alongside the traditional trade finance portfolio.

While trade finance funds can move up the finance ladder and go into project finance and equity finance, these strategies require a different set of skills in our opinion. We rather expect to see new specialized funds focused on specific financing solutions.

Also, industry players are innovating: Maersk Line is introducing a new service to its customers looking to finance their global trade while getting the best service possible from their carrier. Maersk Trade Finance is a new customer-centric, ocean transportation financing product that combines containerized transportation services with trade financing.

Green bonds: A new tool to foster a more sustainable agriculture

"Green bonds - a relatively new instrument in the global debt capital market – are standard bonds created to fund projects that have positive environmental and/or climate benefits.

The global food and agriculture sector starts the new year on a high note as investors look to deploy more capital into the many themes available in the sector. And green bonds may be one of the stars of 2018.

While there are different types of green bonds, all of them share a specific sustainability profile, investing in projects or activities that have a direct or indirect benefit on the environment.

Green bonds have been the subject of increasing government, corporate and investor interest, driven by the mainstream acceptance of sustainable investing and the prospect of matching large low-carbon investment requirements with the trillions of dollars in global bond markets held by institutional investors.

Today, there are over US$ 250 Billion in green bonds outstanding, with total issuance expected to reach US$ 130 Billion in 2017, according to the Climate Bonds Initiative, a nonprofit organization mobilizing the bond market for climate change solutions.

Among the major markets, the Luxembourg Green Exchange (LGX) is ranking number one based on global share of listed green bonds. China, Europe and the U.S. are the major issuers worldwide, with financial institutions, Cos., DFIs and governments among the main issuers.

On the other side, demand for green finance has surged on the back of the COP 21 agreement in Paris as efforts to tackle climate change become a top global priority. Investors in green bonds include mainstream institutional investors but also specialist ESG and responsible investors and impact investors.

So far, most funds have been directed towards renewables and energy efficiency projects, sustainable transportation and water. However, green bonds can be effective to channel capital into sustainable agriculture and forestry, a sector most exposed to weather and climate change and a major contributor to global greenhouse gas emissions.

More broadly, green bonds can help on investments needed to move towards a circular economy, with significant opportunities in bio-based solutions from carbon capture to turning organic waste into bioplastics. This trend is seen growing, as investors and corporates are interested in making firms' operations more efficient.

Green bonds: The opportunity in Latin America

Among the major agricultural hubs in the world, Latin America is a promising market for green bonds earmarked for forestry and agriculture-related projects, as the region is making efforts to mitigate and respond to climate change and deforestation by restoring degraded soils, protecting biodiverse species and ecosystems, and promoting bio solutions for renewable energy based on biomass and food and ag waste. The large animal protein sector in the region also presents some significant environmental challenges.

Zooming into the region, Brazil emerges as the leading green bond issuer across all industries and with growing relevance of agriculture and forestry which represented 24% of the issues, second to renewable energy projects, according to the "State of the Market 2017 Brazil Edition report" published by Climate Bonds Initiative.

Of the nine green bonds issued to date in Brazil, five have an agriculture or forestry component to them, including the following cases:

- **Fibria Celulose:** a Brazilian forest products company and the world's largest eucalyptus pulp producer, issued its first-ever green bond in January 2017 in the international market, which raised $700 Million and was five times oversubscribed.
- **Suzano Papel e Celulose:** one of the world's largest players in the pulp and paper, completed its first issuance of green bonds in the Brazilian in November 2016, to fund sustainable forest development following up on their successful $ 500 Million green issuance earlier in July 2016. The company has a forest base of approximately 1.2 Million hectares, roughly half planted and half as conservation areas.

Going forward, the region offers an expanding spectrum of projects for green bond finance:

- Development and management of sustainable and certified forestry plantations.
- Establishment of carbon finance projects to protect existing forests.
- Restoration of native forests and conservation of biodiversity.
- Development of sustainable agricultural farms with certified practices and certified products.
- Conservation schemes to establish sustainable practices in agricultural land use.
- Conversion of land holdings into grassland conservation.
- Development of biomass energy projects.
- Development and management of sustainable water infrastructure projects.

For these opportunities to materialize and get funding through green bonds, it will be critical to develop a relevant flow of projects that are attractive to investors, with scale being one of the key challenges. While forestry-related opportunities are more readily available and more scalable, across the agriculture sector there is still a lack of awareness of green bonds, too much fragmentation and difficulties to embrace ESG standards and appraise environmental benefits with a rigorous, science-based approach.

Since green bonds represent a debt instrument which requires scheduled repayment of interest and capital, project managers also need to provide a consistent view on how projects can generate consistent cash flows to back the green bonds' repayment.

Despite these challenges, the global opportunity looks bright because of the industry's scale, the size of the global green bond market and the starting point: According to the Climate Bond Initiative's "2017 State of the Market" report, forestry and agriculture account for just 1% of the climate-aligned bond universe with the majority coming from certified timber, paper and packaging companies.

3.4. FARMLAND

The tide may be finally turning, with compelling fundamental factors supporting the long-term outlook.

The farmland market for institutional investors has seen two distinctive phases in the last decade:

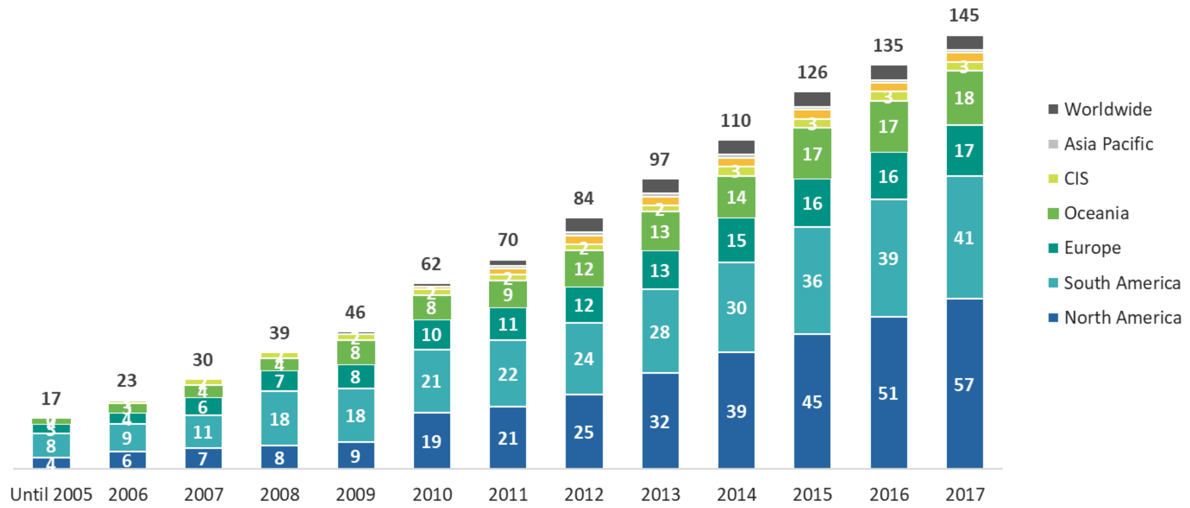
- **The farmland rush of the 2000s:** The massive increase in demand for food crops and animal protein – mainly from China and other emerging markets - drove agriculture commodity prices up across the board, increasing farm income and delivering record appreciation rates in land values.

- Since 2000, the NCREIF Farmland Income Index for farmland in the U.S. has more than tripled. A similar positive trend in farm income growth and appreciation of land values occurred in other major crop producing regions such as South America, Australia and Europe.

- **The downturn of the 2010s:** While the global farmland investment space successfully weathered the 08'/09' economic crisis and benefited from the race for real assets during this period, it ultimately fell victim to the downturn in agricultural commodity prices which resulted from increased acreage around the world, conducive weather and the resulting record stocks.

During this period, institutional investors, including pension funds, university endowments, sovereign wealth funds, family offices and high net-worth individuals joined the space in different waves: In 2005 there were fewer than 20 farmland funds operating around the world. By the end of 2017, the number of farmland funds had reached 145, with aggregated AuM of $32 Billion, as shown in the following figure.

Fig. 12: Evolution in the number of farmland funds by region.



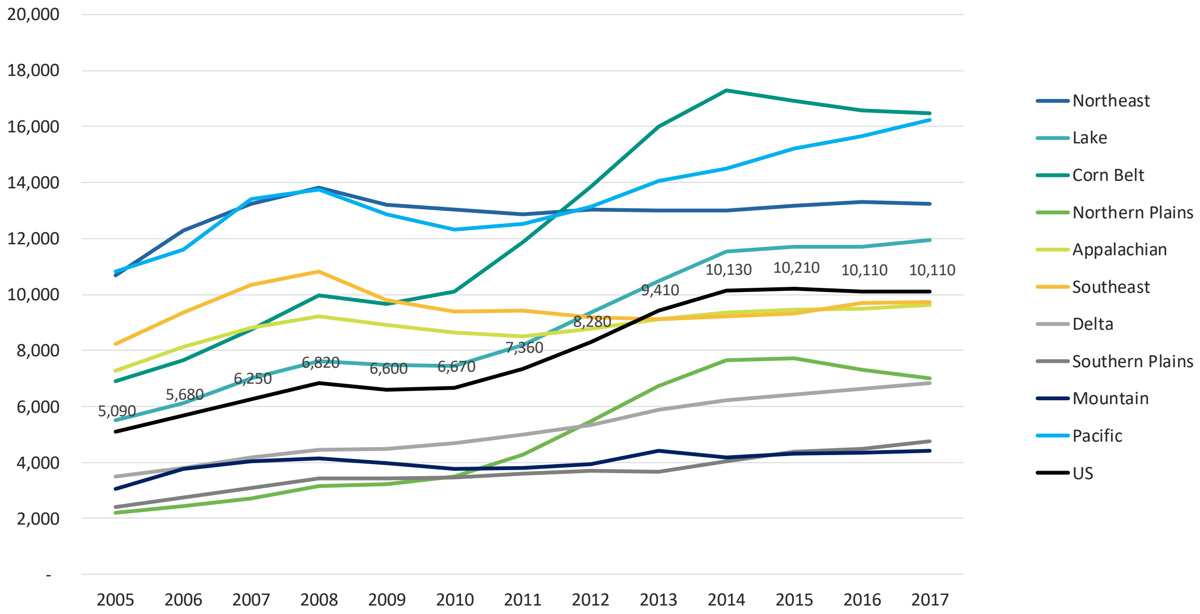
Source: Valoral Advisors.

Recent trends in farmland prices

The continued drop in farm income triggered corrections in farmland prices around the world that have differed according to the local market dynamics, including liquidity aspects, the financial conditions of farmers and the level of investor interest.

The following figure illustrates the evolution of cropland prices across the different U.S. farmland regions, according to the USDA survey.

Fig. 13: U.S. cropland prices by region ($/Hectare).



Source: USDA Land values 2017 summary.

U.S. farmland prices have leveled off since 2014, after exhibiting rapid growth over the previous decade, supported by relatively strong farm income, low borrowing costs, and the entry of institutional investors.

Regional variation in farmland values is significant, driven by the type of land use, local market dynamics and location-specific characteristics that affect the returns to farmland, including the availability of irrigation.

Individual regions have also experienced different trends in appreciation in farm real estate values. The Corn Belt, the most valuable region in the U.S., is among the regions that saw most drops in prices in the last three years, following the downturn in mainstream crop prices and resulting lower farm income. As cropland values have declined amid falling crop prices, farmers have been less eager to sell, a behavior which helped to keep farmland values fairly stable.

While variations may differ by survey, the general trends are clear. Other U.S. farmland price indexes compiled by Creighton University and the St. Louis Fed point to similar price pressure in the last three years.

Farmland market conditions by region

The trend seen in the U.S. farmland market is similar to other major farmland markets. South America has seen a similar pattern across Brazil, Argentina and Uruguay, exacerbated by the local economic malaise in recent years. Please see the South American section in this report, which further examines the regional farmland market.

Even in Canada where real estate assets have been soaring, the surge in the value of agricultural farmland is cooling along with crop prices and farm income.

Eastern Europe continues to attract investors' interest looking for undervalued production assets, consolidation and crop export opportunities. Eastern European countries including Romania, Poland and Bulgaria have benefited from the Common Agricultural Policy (CAP) and have seen a gradual convergence in farmland prices towards those of more developed countries in the EU, a process which is expected to continue. The agricultural subsides, on the other hand, raise concerns among some prospect and existing farmland investors about the future of the common policy.

One of the countries in Western Europe which is attracting investors is Denmark, which offers attractive land and better cash yields than neighboring countries, with a plus in terms of its institutional strength, reputed position in environmental protection and animal welfare, and its leading role in transforming its agriculture towards an organic farming system. Farmland and forestry in the Baltic area are also attracting interest.

Looking east to the CIS region, Russia has emerged as a leader in wheat exports, with improving exports also in corn, barley and oats. Along with Ukraine and Kazakhstan – a group called RUK - it's part of the force increasingly shaping global grain markets, as these countries hold important areas of cropland that has fallen into disuse in 1991 in the early years of post-Soviet capitalism and may be brought under production again with modern technology.

Ukraine is nevertheless embedded in uncertainty amid the war in the country. The country is among the world's top producers of sunflower oil, barley, wheat, and corn. Still, the country has a huge untapped potential: While it boasts one of the world's richest concentrations of fertile black soil, its crop yields are among the lowest in Europe. And despite pressure to liberalize the local farmland market, Ukraine's parliament voted on Dec'2017 to extend the moratorium through Jan. 1, 2019.

Australian prices are more supportive at the moment, as reflected by the Australian Farmland Index – recently launched by the Australian Farm Institute and NCREIF - and the Australian Farmland Values report – issued by Rural Bank. The downturn in Australian farmland prices occurred earlier than other regions, with a recovery extending into 2018. Meanwhile in New Zealand, the value of farms remains below the highs of 2014-15, when milk prices were at their peak.

Sub-Saharan Africa is increasingly appearing in the radar for agricultural investments, driven by a positive economic outlook, a generally improving business environment and abundant natural resources. More capital is required to overcome structural challenges and to develop a sustainable and competitive agriculture to this vast and diverse region.

Understanding the opportunity with permanent crops

During the 2000s, crop land and cattle land have been the major receptors of institutional capital chasing farming opportunities, particularly across North America and Oceania. Starting few years back, investors have been shifting their attention to the attributes of permanent crops.

2017 has seen several deals by institutional investors to diversify into permanent crops: fruits and nuts that grow on trees and vines that can deliver higher returns than row crops and can provide a longer time horizon.

We believe that permanent crops can be an attractive component to a diversified agricultural portfolio for a variety of reasons. Below we provide a brief review of this asset category and some examples of recent investment activity by large institutional investors:

- The produce of permanent crops looks set to benefit from strong demand trends for most of the food produced in these systems.
- The nut group - almonds, pecans, walnuts, hazelnuts and pistachios - is particularly strong thanks to health-conscious consumers and exports to a growing middle class in emerging markets.
- But other crops are performing well too, including olives, the berries group and other fruits.
- The potential returns of permanent crops are usually higher than row crops, for a variety of reasons.
- First, permanent crops usually command a higher operational income: part of the higher income required to permanent crops comes from the fact that, in comparison to row crops, permanent crops usually require a considerable investment on depreciating assets – including the plants, irrigation system, machinery.
- Indeed, the investment in the trees or vines is considerable - anywhere from 50 to 80% of the value of the farm.
- Another factor is that permanent crops come with higher risks: It takes years for a tree to become productive, and consumer tastes may change in the meantime.

Institutional investors develop a taste for permanent crops

Strategic players, asset managers and institutional investors have been particularly active in this space during 2017, below a recap of some distinctive deals and developments across the world:

- The Ontario Teachers' Pension Plan (OTTP) acquired Jasper Farms, a leading Australian avocado producer, seeking exposure to long-term investments in well-managed, producing agriculture properties to meet the growing global demand for food, in a deal reportedly valued at close to $180 Million.

- U.S. farmland REIT Farmland Partners acquired from Olam International Limited 5,100 Acres of permanent crop farmland dedicated to the production of almonds, pistachios and walnuts in California's Central Valley for $110 Million. Farmland Partners plans to enter into a lease agreement with Olam – who will operate and maintain the properties - on a revenue share basis.

- In South America, Chilean fruit Co. Hortifrut merged with Peruvian blueberry producer Talsa, in a deal worth $160 Million plus shares. Meanwhile, Argentine Citrus Co. San Miguel acquired Peruvian citrus Co. Hoja Redonda for $64 Million.

- In Europe, Spanish Cos. Martinavarro and Rio Tinto joined forces to establish Citri&Co, a European leading group in the production and marketing of conventional and organic citrus. The companies will have revenues of €325 Million, six packaging plants and an annual production of 500,000 Tonnes of citrus fruits.

- Also in the Iberian Peninsula, ADM Capital acquired a controlling majority stake in Olivos Naturales ("Innoliva"), one of Europe's largest extra virgin olive oil producers, through its Cibus Fund. Innoliva is one of the pioneers of super high-density olive production, with 5,000 Hectares of olive groves in Spain and Portugal.

- Ferrero, the Italian Co. owner of brands such as Ferrero Rocher, Nutella and Kinder Bueno and the world's largest hazelnut buyer, set up the Ferrero Hazelnut Company back in 2015, to acquire land for production, conduct agricultural and processing research and sell hazelnuts to other companies.

- Ferrero's hazelnut company continues to expand, with farms in Chile, Argentina, Georgia, South Africa, Australia and Serbia, and hazelnut processing capacity in Chile, Italy and Turkey. The geographic diversification also helps to provide a counter seasonal supply to Turkey, the largest producer. Ferrero aims to have 100% traceability for its hazelnut supply.

Several other closed and ongoing deals in the global permanent crop space highlight the interest in the sector, which offers opportunities for large capital deployment in agricultural real assets – most often with secured water -, attractive cash yields and effective exposure to the growing demand for fresh and healthy food in developed and emerging markets.

Revisiting the global farmland opportunity

Despite the recent softening of mainstream crop prices, the long-term macro structural drivers in the food and agriculture sector are bullish for agricultural crops over the next decade and beyond. And the attributes of farmland as an asset in a well-diversified portfolio remain solid.

As we start 2018, the farmland investment space is in a state of flux with managers seeking to generate future returns in farmland from a combination of strategies involving active management of farm operations, land transformation and/or consolidation and the deployment of capital to higher value permanent and specialty crops and value-added products derived from biomass.

We believe there are relative value opportunities in several markets and commodity segments, beyond the mainstream crops and prime regions. But more importantly, in a world of potential lower farmland appreciation, we believe that farmland investments should be designed as active investments to deliver sustainable income. The fig. below illustrates the wide range of agricultural products targeted by farmland funds across the world.

Fig. 14: Breakdown of existing farmland investment funds by region and agricultural focus.

Main Region	North America	South America	Europe	Oceania	CIS	Africa	Asia Pacific	Worldwide	Total
Row crops	42	22	17	3	3	1		1	**89**
Permanent crops	4	6		2		1	1		**14**
Mixed products	8	4		4		1		4	**21**
Beef		9		4					**13**
Dairy				5					**5**
Fresh produce	1								**1**
Organic focus	2								**2**
Total	**57**	**41**	**17**	**18**	**3**	**3**	**1**	**5**	**145**

Source: Valoral Advisors.

Indeed, farmland prices do not need to appreciate for this to be a good investment: high efficient farms along the world can generate attractive cash returns at current crop prices. Managers are looking to improve potential returns in different ways:

- **For developed farms, active management can improve yields:** Investors may consider stepping away from passive “buy-hold-lease” strategies and actively managing the assets. The farming business has a high dispersion in performance, much of it driven by managerial capabilities and technology introduction.

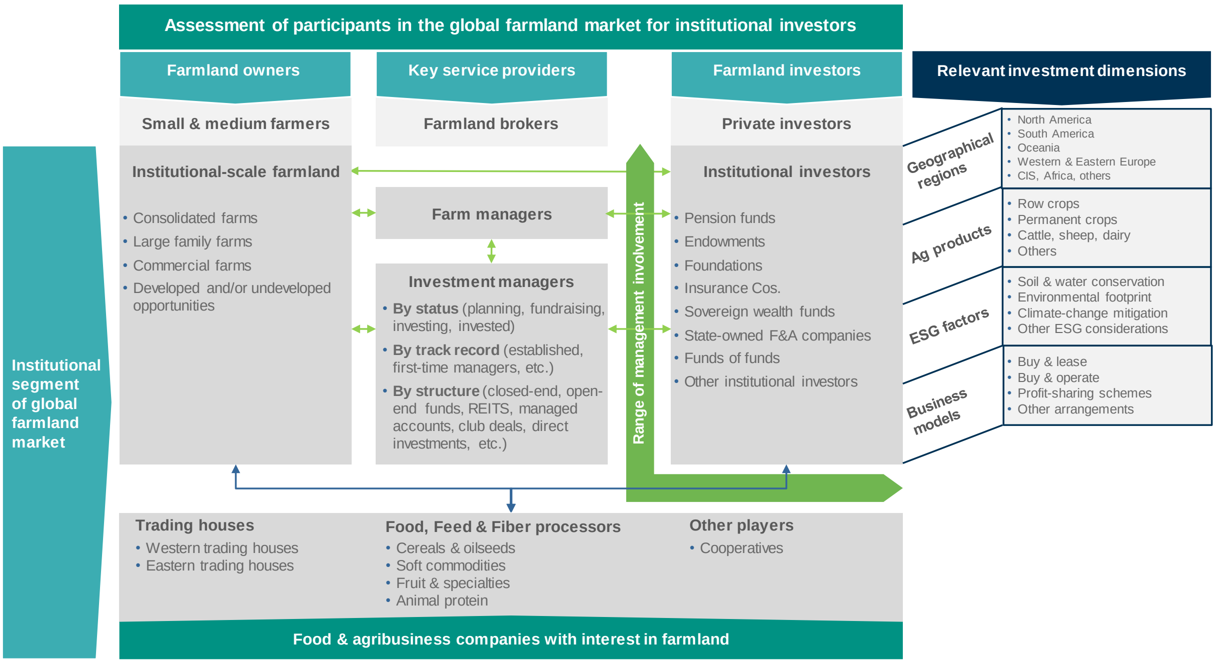
- **Equally, land conversion and production mix can also improve returns:** There are opportunities to improve land and to change the production mix of farms, usually by bringing technology and eventually irrigation. Investors may also consider permanent crops and fresh produce, including conversion to organic farming.

- **Explore integrated strategies along the value chain:** With the premise that the fundamental asset remains the farm, investors can evaluate alternatives to integrate downstream to add more value to the primary production. This may be achieved by building synergies between farm products (i.e. crops as feed for animals), by adding logistics infrastructure, by incorporating processing activities or by expanding into marketing and distribution activities.

Helping institutional investors to assess the farmland opportunity

Valoral Advisors applies a proprietary framework to assess the global farmland market for institutional investors, which is illustrated below.

Fig. 15: General assessment framework for institutional investors.



Source: Valoral Advisors.

The assessment focuses on all the relevant aspects of farmland investments and includes all major market players, with the objective of providing a comprehensive understanding of the global farmland space which is relevant to institutional investors.

This framework can be tailored to the specific needs of investors, and can ultimately allow investors to build a proprietary deal flow and to prioritize a set of opportunities that fit their investment mandate.

3.5. PRIVATE EQUITY

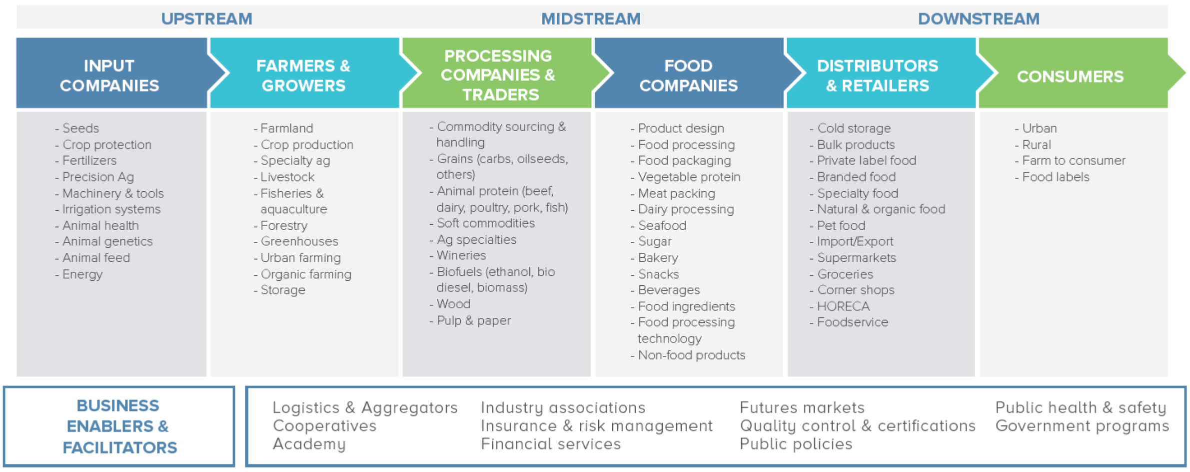
The food & agriculture private equity sector, excluding farmland investments, continues to expand. At present, there are more than 105 PE funds specialized in this sector, with close to $23 Billion in AuM.

The global F&A private equity market sector is poised to grow considerably over the coming years as private and institutional investors discover the sector´s attributes and the pool of opportunities lying in the private equity space. Beyond the specialist funds, there are over 400 private equity firms around the world with investment mandates that include the broad F&A sector, according to Valoral's proprietary network database.

While the broad F&A sector remains largely fragmented, it has been able to consolidate more and more into large, integrated operations. Irrespective of sector, size, and type of operations, numerous forces are reshaping the global F&A industry, leading to a spate of new business models, consolidation, and thus, M&A activity.

The following figure illustrates the broad food and agriculture value chain and the main activities.

Fig. 16: The broad food and agriculture value chain.



Source: Valoral Advisors.

Looking at the main developments in 2017, we highlight the following trends:

- **As the sector grows, managers are becoming more specialized**, targeting fast-growing niches across the value chain. There has been increasing interest in themes such as non-GMO & organic crops, fruit businesses, biomass for renewable energy, aquaculture, food logistics and distribution, food ingredients, and the broad packaged food sector.
- **Managers are also stretching their investment scope**, expanding into more venture opportunities – notably by investing in early stage technologies that can complement their portfolio companies – and into certain upstream activities – usually looking to capture more value by vertically integrating with primary production assets.
- **PE Managers face increased competition from strategic players and new comers,** which include generalist PE firms and institutional investors willing to invest directly. The increased competition partially explains the moves described in the previous two points.
- **This competition is also increasing valuations,** which pressures those managers with large dry powder.

3.6. VENTURE CAPITAL

The many global challenges affecting our industry are sparking new thinking, technology and business models across the broad food and agricultural sector. The wave of AgTech and FoodTech innovation has continued during 2017, with the entrepreneurial ecosystem continuing to mature and consolidate not just in North America, but also around the world.

The broad AgTech sector (including FoodTech) holds many opportunities for investment, with innovation needed throughout the entire food and agriculture value chain. The figure below summarizes the main sectors and sub-sectors in the AgTech universe, demonstrating the breadth of distinctive technologies, products, and services.

Fig. 17: Main sectors and subsectors across the AgTech universe.

Sector	Sub-Sector
Novel Farming Systems	Innovation in Soil & Water Conservation Aquaculture & Hydroponics Systems & Technologies Urban & Indoor Farming
Farm mechanization & automation	Labor Technologies, Robotics & Autonomous Machinery Water & Irrigation Systems Livestock & Dairy Solutions Innovative materials and applications
Genetics, Crop Protection & Animal Welfare	Plant Genetics (biotechnology) Fertilizers Biologicals (Biostimulants, Biopesticides, Biofertilizers) Advanced Fish & Animal Breeding Animal Nutrition & Health Other crop & animal solutions
Big Data & Precision Agriculture	Drones & Satellite Imagery Remote Sensors & Field Monitoring Integrated Hardware & Software Solutions (IoT) Data Analytics & Decision Support Technologies
Farm Management & Information & Education Services	Farm Management Software Weather and Market Data Training & Education
Trading Platforms, Outsourcing and Financing	Marketplaces for Inputs, Products & Services Machinery Sharing & Contractor Outsourcing Platforms Innovative Lending & Financing Platforms
Supply Chain Technologies	Food & Ag Logistics & Storage solutions Active & Intelligent Packaging Food Traceability & Safety
Innovative Food Products & Services	Sustainable Proteins Functional Foods & Beverages Farm to Consumer Marketing Food Marketplaces & Online Groceries
Bioenergy, Biomaterials & Other Renewables	Biofuels Biomaterials Waste Mitigation & Waste Treatment Other renewable energies

Source: Valoral Advisors.

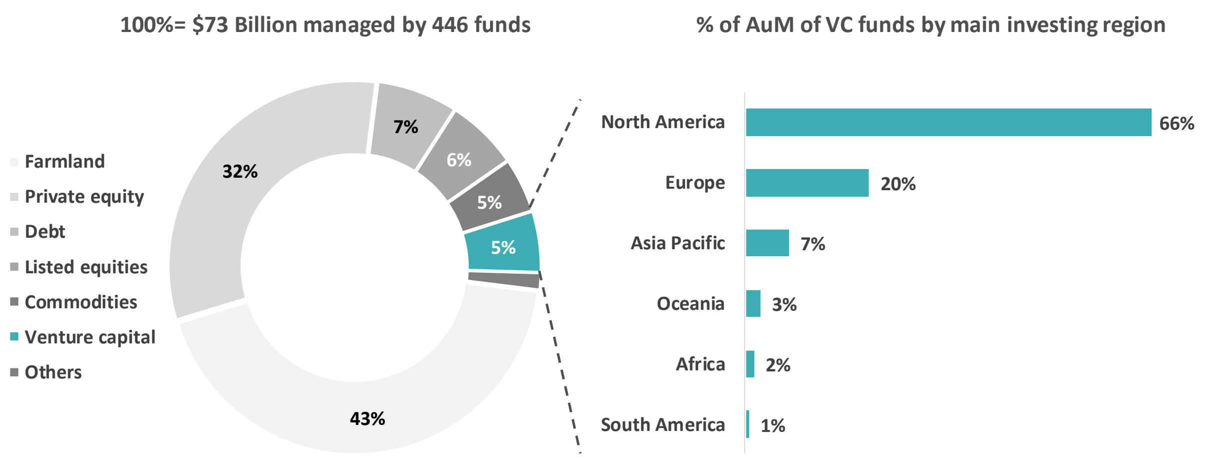
Blockchain technology – which may be applied transversally across the sectors listed above – has the potential to improve traceability and transparency within agriculture value chains. The development of the blockchain ecosystem in our industry promises to bring further disruption.

AgTech investments: a global opportunity

The venture capital space, represented by investment funds specializing in early stage ventures across the food and agriculture value chain, has remained a niche segment within the asset class. Only 5% of the AuM of the funds tracked by Valoral Advisors correspond to venture capital funds, corporate ventures and business incubators & accelerators, as illustrated in the following figure.

Despite the small relative size, the sector is rapidly growing. Beyond the specialist AgTech & FoodTech funds, there are over 300 venture capital firms around the world with investment mandates that include the broad F&A sector, according to Valoral's proprietary network database.

Fig. 18: Weight of venture capital strategies in the global F&A investment space and geographic distribution.



Source: Valoral Advisors.

At present, a majority of that capital is concentrated in North America, and to a lesser extent in Europe, with both regions combined accounting for over 85% of the total capital held by the 65 VC Firms that manage the 79 VC funds and other investment vehicles included in our assessment.

Despite the leading position of North America in the sector, in recent years the AgTech and FoodTech ecosystems have expanded beyond: New funds have set-up recently in Europe, Israel, South America, Oceania, India and Asia, targeting local technological innovations and aiming to expand them internationally.

Who's who in the food and agriculture venture capital space

A dramatic shift in global innovation funding is happening, away from government-backed research and capital-intensive sectors. In this context, private venture capital is likely to play a growing role in helping to develop and deliver technological innovations.

Today, the global AgTech VC space is an ever-expanding ecosystem made up of entrepreneurs, business accelerators, academics, VC funds, large corporations and their corporate ventures, as well as wide array of private investors. The table below details the main sources of fresh capital flowing to AgTech:

Business incubators & accelerators	• In recent years, a number of AgTech and FoodTech accelerators have emerged, mainly in North America and Europe, to provide a blend of capital, mentorship, and networking to technology-enabled startups, usually through time-bound programs. • These accelerators bring together a powerful community of entrepreneurs, mentors, and investors, complemented by strategic partnerships with local research and academic institutions, business associations, and investment funds. • This ecosystem is usually centered around a local innovation or business hub; however, their geographical reach has been expanding and today many of them run international business programs. • The accelerators attract and invest in promising entrepreneurs that have innovative, cutting-edge, high growth, early-stage businesses and act as an early-stage investment platform for start-ups, providing functional and financial support to enable growth.
Venture Capital (VC) Funds	• The last decade has seen the emergence of many early-stage venture capital firms that exclusively invest in entrepreneurs leading ventures in agriculture technology and food system innovation. • VC funds typically look to add value to AgTech companies in the early stages of development through a combination of investment, advice, and collaboration. As the AgTech VC space takes shape, we have identified the emergence of different types of funds in the market: • Some established firms have been investing in the space for several years, with a multi-stage scope or with focus on earlier or more mature stages. • Funding is also increasingly coming from 1) new funds being formed that are specifically focused on investing in technology related to agriculture, and 2) other funds that have broader mandates in sectors spanning from life science, to energy, to HiTech and which are now targeting the AgTech space. • So far, generalist VC funds have been cautious to enter this market – but there are some distinct cases of generalist VC firms such as Khosla Ventures and Kleiner Perkins that have been actively investing in the sector.

Who's who in the food and agriculture venture capital space

Corporate ventures

- The agchem, seed, fertilizer and ag machinery industries are being disrupted by the AgTech revolution. Already facing challenges to their traditional businesses, large corporations are looking for new ways to organize and reposition themselves.
- A similar trend is taking place in the food businesses, prompting food majors to rethink their strategy.
- Facing pressure to innovate, large food and ag corporations are developing their own venture arms in order to collaborate with entrepreneurs and start-ups. In return, the chosen start-ups benefit from their vast resources including brand equity, market knowledge, technology and expertise, strategic relationships, distribution capabilities and global resources.
- Among the companies with active corporate venturing units that are investing in food and agriculture related start-ups, the following are particularly prominent:

- 301 Inc (General Mills)
- Acre Venture Partners (Campbell Soups)
- ADM Ventures
- BASF Venture Capital
- Bimbo Ventures
- Bunge Ventures
- Constellation Ventures
- Distill Ventures (Diageo)
- DSM Venturing (Royal DSM)
- Dow Venture Capital
- DuPont Ventures
- EKLOS (AB InBev)
- Eighteen94 Capital (Kellogg's)
- GE Ventures
- Intel Capital
- IBM Ventures
- Maumee Ventures (The Andersons)
- Monsanto Growth Ventures
- Qualcomm Ventures
- Syngenta Ventures
- Tate and Lyle Venturing
- Tyson New Ventures
- Siemens Venture Capital Gmbh
- Solvay Ventures
- Unilever Ventures

Impact investors

- Impact investors are increasingly turning to AgTech, as they recognize that the application of AgTech solutions can help in responding to challenges associated to climate change and land degradation.
- AgTech innovations may also enhance the lives of individuals and local communities in developing markets, creating long-standing positive social and environmental impact. The agriculture sector is uniquely positioned to deliver technological innovations that can address global challenges related to poverty and hunger alleviation as well as rural development.
- FoodTech innovation also fits with impact investors' goals: our food system is ripe for disruption and the future depends on transparency, health and sustainability. There is also a social dimension in the FoodTech space, as sustainable sourcing and processing of ingredients can create positive social impact.
- It is important to consider that the path from new technology R&D in a tech hub to implementation in a developing country is long and uncertain. The increasing support from impact investors in transiting this path is vital to the achievement of these important goals.

4. INVESTORS

For decades, institutional investors have incorporated alternative investments into their portfolios in a quest to manage risk, improve diversification and increase returns.

Over the last decade, institutional investors have increased their interest in real assets, with the focus predominantly on real estate, infrastructure and energy. Investors are pursuing these assets to provide an inflation hedge and diversification, but also as a source of higher yields, in the context of low interest rates.

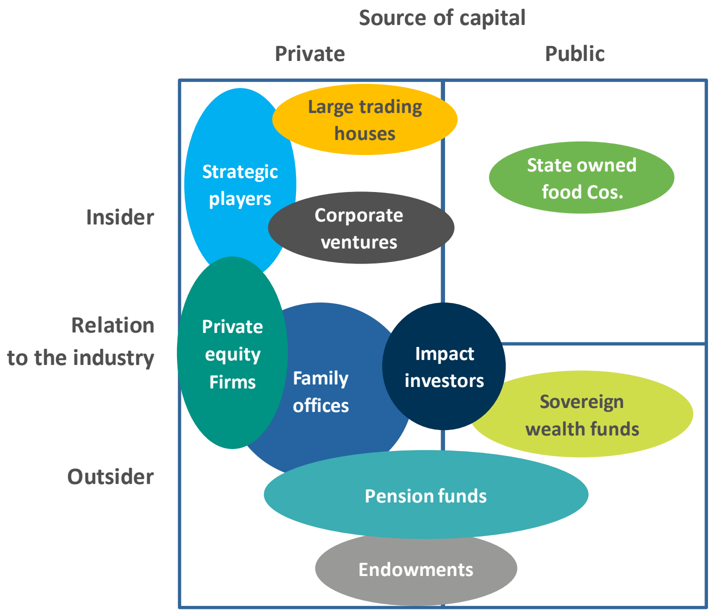
Investors see real assets' performance as bridging the gap between fixed income and equities. The stable, bond-like payment structure often provided by real assets has the potential to deliver consistent mid- to long-term returns – absolute returns – and as such, can help institutional investors meet their desired rate of return. They also offer the potential for equity-like upside and the ability to respond positively to healthy, growth-induced inflation.

Different types of real assets offer a variety of advantages and disadvantages, as well as having varying degrees of correlation with more traditional asset classes. When combined, however, real assets should prove to be an effective investment for those looking to diversify and add inflation linkage to their portfolios.

The food & agriculture real assets offer compelling fundamental factors, which have been widely discussed in recent years.

As investors become more aware, they are starting to create specific allocations to the sector, albeit at cautious pace. Nevertheless, recent activity points to an increasing interest by a broad pool of institutional investors.

Fig. 19: The investors' universe in the global F&A sector.



Source: Valoral Advisors.

The figure 19 illustrates this trend by characterizing ten different types of investors, according to their source of capital and their approach to the food & ag industry. The size and number of investors in each category and their differing patters in terms of investment drivers and decision making define distinctive profiles.

4.1. INSTITUTIONAL INVESTORS

The extreme monetary policy across much of the developed world has created significant distortion across all investments. The stretch valuations across equity markets and fixed income has propelled the shift into alternative assets as more institutional investors search for yields in a world where yield is scarce.

But the huge scale of new cash inflows into alternatives in recent years has also driven up valuations across these illiquid assets, raising concerns that future performance may disappoint. The search for other non-correlated, income generating assets has brought the food and agriculture sector to the main stage, as the sector has been traditionally underweighted by most institutional investors. However, the way institutional investors approach the sector can differ according to the profiles:

- **Pension funds across the developed world have been one of the major sources of fresh capital into the sector.** Very often, their strategy has focused on investing into large farmland funds that look to build diversified farmland portfolios with a mix of row crops and permanent crops in defined geographies. The U.S., Australia, New Zealand and Brazil are among the top destinations. Endowments, notably those from U.S. Universities, have followed a similar path.

- **As the market evolved, and the investors gained experience, pension funds are shifting to direct investments with operating companies** – in primary production assets (including cattle and dairy) and increasingly in integrated agribusinesses – looking for more efficient deployment of capital and larger control. This is a trend likely to gain weight in coming years.

- **In recent years, some of the largest sovereign wealth funds (SWFs) in the world have also launched dedicated strategies to pursue long-term investments across the global F&A value chain**, including well-known names like Temasek, China Investment Corporation and Mubadala Investment Company. Nowadays, also some government-owned food companies from Middle East are investing abroad in search of origination assets for cereals, oilseeds and animal protein.

- **In contrast to previous investments pursued by SWFs in the past that targeted exclusively farmland, their allocations show increased interest in midstream and downstream agribusinesses assets**, with eventual opportunities to integrate upstream with producing assets such as permanent crops.

- **Other notable investors in the space are the trading houses.** For many decades, the letters ABCD in the global food market have symbolized the group of four companies leading the global agricultural flows: ADM, Bunge, Cargill and Louis Dreyfus. The companies have developed an international network of origination, storage, processing, transport and trading for much of the food produced and consumed globally.

- **However, in recent years, much of the new investments have come from Asian trading houses, including Chinese Co. COFCO, the Japanese and Singaporean ones.** The South American section in this report digs deeper into the role of trading houses in the region.

4.2. FAMILY OFFICES

Family offices show greater appetite for agriculture

The F&A asset class has seen also its investor base expand, thanks to the growing enthusiasm from family offices.

With a much lower profile than most pension funds, sovereign investment funds and trading houses but with growing appetite for agricultural exposure, family offices from around the globe and through the whole spectrum of sizes and styles are increasingly looking to allocate capital to this space.

Stocking up on sustainable real assets

If there is anything all family offices have in common, is that they have always owned hard or real assets, not necessarily farmland, but for sure one of the many types of real assets. And often these are truly multigenerational assets that will be held in perpetuity.

That long-term, buy-and-hold investment time horizon is very attractive for families preparing for future generations. But is also as true that family offices are looking at hard or real assets from a financial perspective. For investors into these assets, everything comes back to capital preservation and yield generation at a time when central banks have driven interest rates to all-time lows.

The F&A space, and farmland assets in particular, has the potential to fit very well with these goals, besides the attributes in terms of portfolio diversification and inflation hedge.

Besides the economic benefits to their portfolio, some family offices find that the agriculture space offers them the possibility to address social and environmental impact investments: they can generate attractive economic returns but at the same time, they can contribute positively to the many challenges in this important sector of the global economy.

Despite their genuine interest, family offices are also finding it just as tough as institutional investors to achieve exposure to the asset class. One of the reasons is the relative early stage of development of this asset class, which offers limited alternatives that fit with their investment criteria.

Another reason is that the set of skills and the type of risks involved in F&A assets are different from the mainstream assets in their portfolios, resulting in an increased risk perception. At Valoral Advisors we are working closely with several families from around the world, helping them to explore this space and to build attractive farmland portfolios.

4.3. IMPACT INVESTORS

The challenges of our time are global and complex: Climate change, the depletion of natural resources, persistent poverty and food security, to name a few.

The global climate agreement that came out of the COP21 meeting held in Paris in late 2015 perfectly illustrates the scale of the climate change challenge. According to its conclusions, the decarbonization of the world economy, essential to keep global warming to below the fateful 2°C, would require considerable investment.

Also in 2015, member countries of United Nations adopted a set of 17 Sustainable Development Goals ("SDGs") to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda.

No industry is as relevant to the successful implementation of the SDGs as agriculture: almost every single SDG has some linkage to agriculture. The development of sustainable agricultural practices, the efficient use of water, the protection of biodiversity, the development of rural areas, the reduction of food loss and food waste are among key challenges and opportunities achieving this agenda, as illustrated in the figure below.

Fig. 20: The United Nations' 17 Sustainable Development Goals and their linkages to the F&A sector.

Source: United Nations.

Framing impact investing in the broad food and agriculture sector

Impact investing can be defined as the intentional creation of enduring social, environmental and economic value. The practice of impact investing is further defined by the following core characteristics, according to the Global Impact Investing Network (GIIN): Intentionality, an expectation on return on capital invested which moves in a wide spectrum, and the commitment to measure and report the social and environmental performance and progress.

Impact investors – including families, endowments, foundations, investment firms and specialized impact funds – are among the latest and most inspired investors to join the broad food and agriculture investment space.

And while agriculture investing remains a niche category in the impact investment world, it is well recognized by impact investors. According to GIIN's 2017 Annual Impact Investor Survey, while just 7% of total impact investing assets were allocated to food and agriculture, approximately 50% of respondents had some allocation to the sector - greater than any other industry.

The increasing awareness of natural capital - the biophysical assets within the natural environment that deliver economic value through ecosystem services – is helping to attract more interest, with agriculture being among the sectors which rely most heavily on healthy ecosystems.

Development finance institutions (DFIs) have also contributed to the discussion of impact investing across the F&A sector, as key players in providing financing in countries with limited access to credit and poor rural areas. More recently, DFIs are expanding their efforts in climate-smart agriculture and solutions for carbon sequestration, among other initiatives.

Impact investors eye allocations to sustainable agriculture and inclusive finance

The agriculture space offers a broad spectrum of impact investments: from reforestation and sustainable forestry assets, through agriculture regeneration and organic farming to landscape restoration, biodiversity conservation and water management. One of the attractions of these strategies is that they are scalable and can provide competitive returns in addition to positive social, economic and environmental outcomes.

Impact investors are also eyeing opportunities to foster rural development by providing inclusive finance, facilitating technology adoption and enabling market access. The spectrum of investment themes is expanding rapidly.

While the sector offers many impact areas and investable themes, it is necessary that asset managers clearly differentiate responsible investments with adoption of ESG criteria, from the genuine, mission-driven and outcome-oriented impact strategies. The risk is that we lose the opportunity to incorporate the valuable vision and perspectives from the growing ranks of impact investors.

4.4. TRENDS IN THE ASSET MANAGEMENT MARKETPLACE

Despite the differences across the institutional capital spectrum in terms of mandates and approach to the space, all these investors share one thing in common: they are willing to increase their agriculture exposure, but they face difficulties in allocating capital and the timeframe to do this will probably extend over the next years:

- These challenges arise from the fact that many institutional investors do not usually have an experienced agricultural in-house team, so they need to transit all the learning curve and their risk perception is usually affected by the limited knowledge of the space.

- This is reasonable, as many of these institutional investors have only recently started to allocate capital to the sector – they are taking the first steps, with caution and with gradual commitments. In addition, in the best case a typical institutional investor would not allocate more than 2% to 3% of their global portfolios to the sector.

- To compound the difficulties, the recent weakness in some farmland and timberland markets has caused unease among some investors, which is making capital raising more complicated. Some managers from around the world – especially first-time managers and those acting in emerging markets – are having a tough time raising capital.

- There is even anecdotal evidence of some institutional investors reconsidering their real asset portfolios, rebalancing out of strategies that have not worked in recent years and boosting investment in sectors that have.

- Harvard Management Co., which manages Harvard University's $37.1 Billion endowment, wrote down the value of its natural resources investments - which primarily consists of agriculture and timberland holdings - by $1.1 Billion in the 2017 fiscal year and moved to sell a dairy farm in New Zealand - as filed at the Overseas Investment Office -, and was reportedly moving to sell timberland assets in Uruguay.

What we are seeing is the influence that institutional investors are having in shaping the asset class and how asset managers are innovating their business models and investment solutions to overcome these challenges. In the next pages we review some of the main developments in the institutional asset management space.

1. Enlarged pool of available opportunities to increase liquidity

- While interest from private and institutional investors has been growing in recent years, the universe of specialized investment products that are available remains rather limited, after applying the typical investment criteria used by these investors.

- Asset managers recognize that until the sector emerges as a relevant asset class, the drawback for investors is that there is a limited number of funds available, especially those with experienced management teams and proven track records.

- One of the reasons behind this is that in contrast to some financial assets that can be accumulated and multiplied almost to the infinite, managers cannot do the same with a farm or a cow or a tree. Another reason is that the sector is very atomized, and most investments are still done by private owners. Both factors affect liquidity – both to invest in and to exit.

- The positive news is that we continue to see new investment funds coming to the market with fresh strategies, in several cases managed by established managers. We also expect that the secondary market will gradually flourish alongside primary markets, providing much needed liquidity to the space.

2. Innovative capital structures to respond to investors' needs

- As fundraising and investment activity picks-up across the global F&A asset class, investment managers are embracing a range of different structures for private investments.

- Different debt structures are emerging as a response to investors' demand for income and lower risk profiles. Besides the already known trade finance solutions, these new structures offer mezzanine financing, with a combination of convertible debt, different seniority and preferred dividends.

- One of the effects of these new structures is the expansion of the investor universe, as alternative credit hedge funds are keen to consider these opportunities. In the same way, family offices who are not fond of long-term commitments, find these structures a feasible way to get a taste of the business.

- Some managers are also building managed and advised solutions that are intended to enhance investors' private markets programs, providing increased focus and flexibility, usually at a reduced cost.

3. Growing appetite for direct investing and co-investing

- This has been a recurring topic among private and institutional investors for some years: Many surveys point to the fact that many of these investors are willing to take control of their destiny and manage more of their assets in-house, or at least they have a growing intention to co-invest rather than allocate capital to blind funds.

- Indeed, the performance of certain closed-end farmland and timberland funds in the recent decade left several investors disappointed, prompting investors to rethink their investment models.

- Even when setting up co-investment programs and executing co-investments has its challenges, it seems likely that investors will plan to allocate a greater proportion of their assets directly, as they look to reduce their costs and gain more control over the risk profile of their portfolios.

- We already see some action on this front in the F&A space:

  - Sovereign investment funds and state-owned food companies are entering the space almost exclusively through direct investments.
  - Some farmland managers are offering club deals and co-investment structures to their family office investors.
  - Private equity managers are also offering co-investments to LPs, for those who want to co-sponsor and/or underwrite deals, and those who just want to pick up a piece of equity post-syndication.
  - There is also a growing number of investment firms in the space raising capital on a deal-by-deal basis, matching specific opportunities with investors who have the right fit and providing a flexible investment strategy aligned with the investors' goals.

- The other side of this trend is that local operators will need improved skills to provide dedicated management solutions to these investors. Asset managers, farm operators and corporate teams can differentiate themselves in this area and gain a competitive advantage.

4. Demand for institutional track record and strong governance

- When it comes to investing in real assets, and agricultural ones in particular, institutions value the expertise of their asset managers to an extent rarely seen in other asset classes. The premium on expertise reflects both institutions' unfamiliarity with real assets and the inherent complexity associated with these investments.

- However, the F&A space is still a nascent asset class, which typically lacks much institutional track record and realized returns.

- Institutional investors also put emphasis on governance as regulatory scrutiny intensifies. Governance in the F&A investment world includes formal aspects of the investment management process, but investors are also increasing the scrutiny on the broader ESG aspects of the proposed investments.

Asset managers are responding to the increasingly competitive environment with more consolidation

Asset managers have taken notice of these trends and have been consolidating and reinventing their investment solutions. Below it is summarized the main recent M&A deals in the asset management sector linked to agriculture and forestry:

- **September 2017:** UK Insurance broker Aon Plc agreed to buy real estate investment management firm The Townsend Group from for $475 Million, helping expand its property investment management portfolio. Townsend has been advising on agricultural investments to institutional investors.

- **August 2017:** The Rohatyn Group agreed to acquire GMO Renewable Resources, a manager that provides investment opportunities in forestry and agriculture investing with AuM of $2.1 Billion in rural real estate assets across eight countries and 600,000 hectares.

- **June 2017:** Domain Timber Advisors agreed to acquire Timbervest's Fund Management Business, with a 530,000-acre timberland portfolio with a market value of approx. $1b across the major timber producing regions of the U.S.

- **June 2017:** Mirova, a fully-owned subsidiary of Natixis Asset Management, entered talks to acquire a majority stake in Althelia Ecosphere, a London-based impact investment firm with extensive exposure to food and agriculture.

- **April 2017:** Schroders acquired swiss private equity investment firm Adveq, which has different investments in agriculture, particularly in permanent crops.

- **February 2017:** Farmland Partners completed the merger with American Farmland Company, creating the largest and most diverse public farmland REIT with prime U.S. farmland assets spanning 144,000 Acres across 16 U.S. states.

- **April 2016:** US Agriculture and Halderman Real Asset Management merged their businesses, creating a leading investment advisory firm, providing agricultural investment management services for institutional investors.

As the sector and the investment strategies evolve, we expect to see further consolidation ahead, in developed markets but also increasingly in emerging ones.

5. 2018 GLOBAL INVESTMENT OUTLOOK

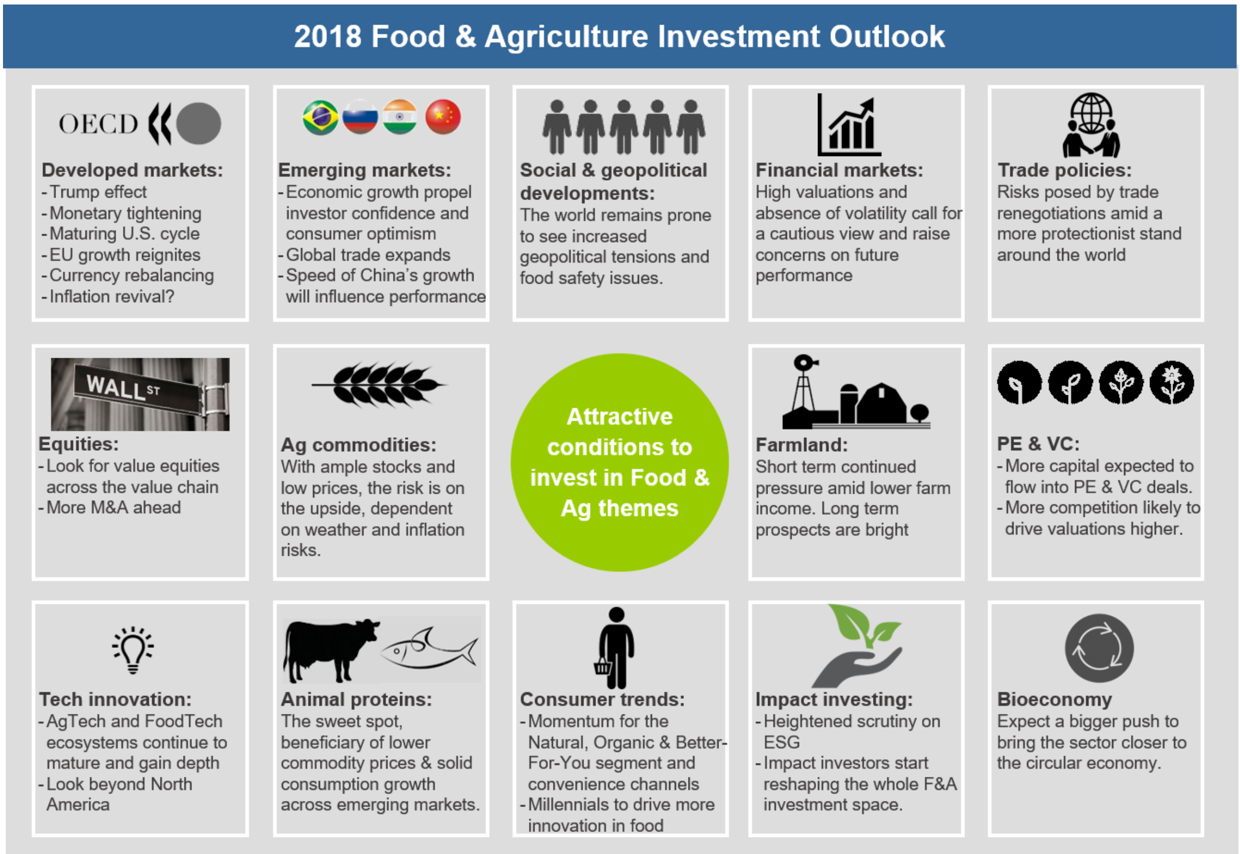
The past year has delivered mixed results in the broad F&A sector: Certain sectors in the listed equities space had attractive performance and valuations in private equity deals across the food and agribusiness value chain were generally supportive. The growing VC space of AgTech and FoodTech continued to expand, albeit with limited exits. Private debt strategies continued to deliver relatively attractive performance.

On the other hand, the pool of farm revenues across most producing regions remained stable amid low ag commodity prices, which proved a head wind for farmland values and for index investments in commodities. This prompted the shift of many managers and investors towards more value-added farming opportunities, notably in permanent crops and animal protein, which provided more opportunities.

2017 saw an end to the declines in most commodity prices, which had been ongoing since 2011. It also coincided with a weakening U.S. Dollar. Going forward, we expect that surging supply for agricultural commodities is likely to keep prices subdued in 2018 absent any major weather event. The bright spot is the continued growth in demand.

More broadly, global macroeconomic trends will remain an important driver of all asset class returns, including asset strategies in the global food and agriculture sector. In this context, it is expected that private and institutional investment in agriculture and timber is set for a steady growth as we start 2018. Below are summarized the key factors that may likely affect the global F&A investment space in 2018.

Fig. 21: Key factors that may affect global food & agriculture investments in 2018.



Source: Valoral Advisors' analysis.

Our take-aways for investors and managers in 2018

As we enter 2018, steadily rising asset prices and falling volatility have become the norm, global growth remains solid, and optimism prevails across asset classes. Consumer optimism is at an all-time high.

It is hard to be contrarian going into 2018, yet now is not the time for complacency: While momentum is significant right now and we may move to outright euphoria during 2018, our view is that extreme monetary policy has created significant distortion across all investments and it is the time to emphasize the importance of investing in value and managing risks:

- **The investment climate of 2018 may be characterized by improved economic growth around the world – both in developed and emerging markets – which offers a constructive outlook for continued growth in consumer demand for all the spectrum of food and agricultural products.**

- Contrasting this growth, 2018 will see persisting uncertainty in global geopolitics, a tightening monetary cycle in some of the largest economies, a revival in consumer price inflation and likely increased volatility in financial assets, amid high valuations across nearly all asset classes.

- The sector is so broad, in terms of asset strategies, geographies and across the value chain, that at any point of time it is possible to capitalize on global macroeconomic trends to drive returns using a dynamic multi-asset approach.

- **There are some multi-year trends affecting this industry which will continue to disrupt all the F&A value chain.** In recent years, lower farm income and lower trading profitability pushed investors and managers to expand into higher-value markets and integration opportunities (e.g. permanent crops, animal feed, food ingredients, consumer brands, etc.). This shift has increased valuations in those sectors, specially across North America and Europe.

- **More broadly, favorable macroeconomic conditions coupled with consumer demand for healthy products is expected to drive demand in the Natural, Organic & Better-For-You segment.** Cross-border M&A activity and valuations are likely to remain strong in the broad food packaged sector and to expand into emerging markets, mainly through private equity strategies.

- **Realizing that the entry price in farmland is critical in the overall performance, agricultural real assets may offer long term value after the drops seen in recent years, especially in geographies and markets that have the lowest marginal cost of production** and that offer optionality for crop and animal protein production and value-added integrated models. Despite the current low cash yields, a well-diversified portfolio of farmland assets offers resilience and downside protection in numerous ways to private and institutional investors.

- **This approach requires an in-depth analysis of specific opportunities, as the downturn in the farm economy across regions may be prolonged if commodity prices remain on current low levels.** Other risks to consider are the uncertainty around trade renegotiations not just in the NAFTA area but across the world, the expected lift in borrowing costs and possible currency rebalances.

- **Finally, the margin squeeze in several areas of the value chain, and the disruption from farm to table will likely continue to drive opportunities to innovate in new technologies and new business models around the farm-centric and consumer-centric industries.**

6. SOUTH AMERICAN OUTLOOK

The region at a glance

In recent years, South America was among the most affected emerging markets in the world, partially explained by its higher reliance on the broad commodity complex – energy, metals and agriculture. However, the region is shifting towards a healthier balance of commodity and consumer-driven economics, and a sounder macroeconomic and institutional environment, which provide the background for different investment opportunities in the F&A sector.

The fundamentals of food and ag production across the region are very solid:

- It bears a massive area of arable land, with attractive soil conditions, conducive weather and important sources of fresh water.
- It has a diverse agricultural production platform that allows the region to produce and export growing surplus of food to the world. The region is already today the largest net food exporter to the world.
- It holds a growing regional population, with a growing middle class willing to improve their diets.

The South American food & ag value chain offers enough market depth to invest into a broad set of strategies:

- This production platform is the backbone that supports a variety of assets in which investors can allocate capital.
- These assets are concentrated across the farmland space and the traditional private equity investments along the value chain – upstream, midstream and downstream.
- That is why it should be no surprise that the region is the second largest in terms of capital flow into F&A investment funds after North America: Of over 440 funds with $73 Billion in AuM, the region attracts 16% of funds and 17% of the AuM.
- And M&A deals in food & agribusiness sector in South America during 2017 have already surpassed $8 Billion, 15% higher than in 2016.

The broader economic and political environment across the region has been challenging in recent years:

- The fall of the commodity super-cycle has fully impacted in the region, reducing the pool of revenues across the food and ag value chain. There have been persistent low ag prices across the board.
- And there have been currency devaluations, financial distress, changes in political leadership, corruption scandals, and even presidential impeachments. While some of these developments resulted from the business cycle, others were self-inflicted or worsened by local policies.
- It could be argued that countries have navigated this storm in different ways and with different outcomes.

However, the tide may be finally turning:

- The regional food & agriculture sector has proven to be very resilient in this context.
- After several years of lower ag prices, there are some early signs of improvements in global markets.
- And the correction in asset prices across the region is attracting renewed interest.
- Moreover, from a geopolitical standpoint, the region is well positioned for investors willing to diversify away from other regions which may be under increased political and financial uncertainty.

What's ahead for the region in 2018?

Below we present a brief economic and political outlook across the region and the main investment themes.

Economic outlook

Looking broadly at the regional economy, the last indicators confirm that South America is returning to growth. Brazil's economy continues to recover from its worst recession on record and Argentina's economy finally seems to be responding to Macri's reforms, while Peruvian growth is picking up after major flooding in early 2017 and Chile's presidential election results offer optimism.

The positive global environment is strengthening and should support the growth in the region. Accommodative monetary policies across most advanced economies, fiscal policy that has recently been neutral or expansionary, and positive signs across commodity prices are all factors that are helping the global recovery, against a backdrop of calm in financial markets.

Political outlook

Although the acceleration in growth is positive for the region, the pace of the recovery will be gradual. Moreover, macroeconomic imbalances need to be addressed to put growth on a sustainable path, as many countries in the region face a tough combination of high taxation, elevated fiscal deficits and negative current accounts. To be successful, countries across the region will need to embrace further reforms.

The region has taken a turn to the right, following more than a decade of left-oriented governments. In recent years, right-oriented parties have come to power in Argentina, Brazil and Paraguay, and Venezuela's "Bolivarian Revolution" has come under severe pressure. The win by Mr. Piñera in Chile further consolidates that trend. Looking forward, Brazil's presidential elections later in the year may bring renewed uncertainty.

If in recent years there was a shift in attention towards the Andean region – mainly Peru and Colombia -, due to the opportunities in permanent crops and the relatively friendlier environment compared to the Atlantic neighbors – mainly Argentina and Brazil – as we start 2018 we expand our radar to the Southern cone, as we see improving prospects for Argentina, Brazil, Paraguay, Uruguay – together the Mercosur trade bloc -, and Chile.

2018 may see a final free trade agreement between Mercosur and the EU, as part of a global market-opening drive in an otherwise more protectionist wave across the world. As expected, the main ongoing negotiations are centered around reciprocity for import and export of agricultural products.

Valoral Advisors expects global investor demand for South American F&A assets to pick up, with plenty to be excited about in the region in 2018 and a number of themes set to influence the sector:

- **Increasing demand for high-quality farmland assets and for more frontier assets:** targeting a wide range of opportunities for row crops, through permanent crops to cattle, following price corrections in previous years.
- **Increased M&A activity:** The region will continue to transit the global disruption in the food business, with more M&A activity likely across the broad food and agriculture value chain.
- **Technological innovation:** Increased interest from local farmers, agribusinesses and foreign investors in AgTech and FoodTech local innovation that addresses some of the major challenges faced across the region will drive a larger investment flow into the regional space.

The rest of this sector provides an overview of these investment themes and the investment and regulatory outlook by country.

Farmland opportunities in South America

The region is likely to enjoy a resurgence in farmland investments, driven by many local and global factors. This is despite the current low profitability that results from several years of low prices for the mainstream cereals and oilseeds produced in the region, which has already seen some shifts from row crops to pasture land. The main developments and opportunities are presented below:

- **In Argentina, the farmland market is slowly awakening thanks to the pro-business government.** Grazing land for cattle farmland in the north and forestry in the Mesopotamia area look attractive at current valuations. More broadly, the central area of the country offers opportunities for row crops and for mixed operations, including grass-fed beef production. There are niche opportunities linked to specialty crops produced under irrigation in more marginal lands which have access to water, including citrus and the nuts family, as well as organic farming systems.

- **In Brazil, years of low commodity prices, over-leveraged balance sheets and persistent droughts in the north east have left many farmland assets in search of new buyers.** While current restrictions on foreign ownership limit opportunities for foreign large-scale investment this could change soon should new legislation be enacted.

- **Uruguay remains a top destination for U.S. and European capital due to its business-friendly environment, which provides safety but may limit potential returns.** After the massive land appreciation that happened between the mid-2000s and 2014, farmland prices have retreated, and a new wave of private investors are searching the country for opportunities, with preference for row crops in the Southwest of the country.

- **Paraguay has quietly emerged as a major beef exporter in South America, with some of the highest productivity performance in cattle production.** Row crops in the east of the country are proving a good opportunity, with a record soybean harvest in the last season. Forestry is also emerging as an attractive theme.

- **In the Andean region, Chile, Peru and Colombia, in that order, have emerged as destinations for investments in permanent crops.** With relatively high farmland prices in Chile, Peru has been attracting most of the capital that is being invested in permanent crops, becoming a major Southern hemisphere player in the production and export of avocados, asparagus, grapes, blueberries and citrus, among other crops.

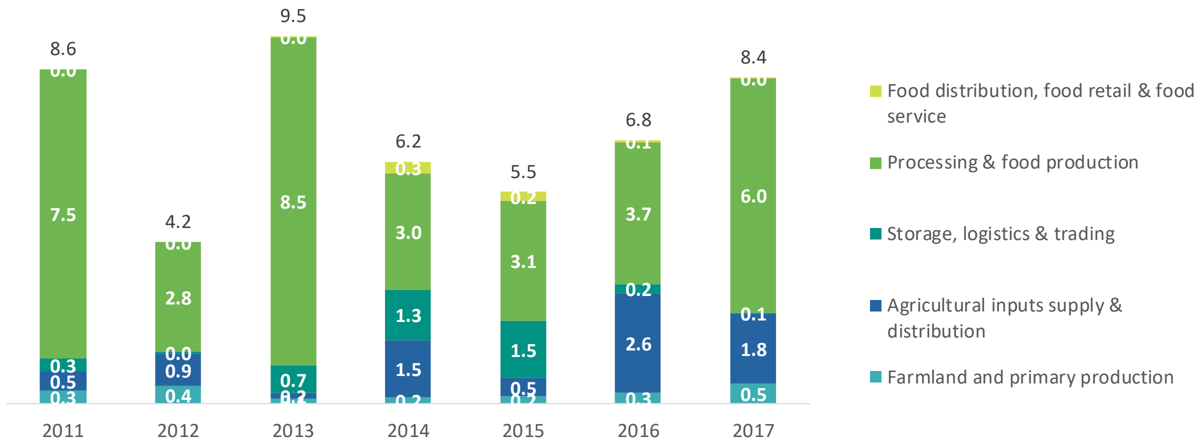
- **Meanwhile, Colombia, with large areas for fruit production in the valleys, and cattle, rice and other crop production in the Eastern plains is promoting itself to foreign investors.** The country continues to expand its agriculture production, albeit with infrastructure challenges from many decades of underinvestment in the sector and in the country's internal infrastructure.

M&A opportunities in the broad food and agribusiness value chain

The South American food and agribusiness value chain encompasses a broad spectrum of subsectors and activities. After the farm gate, most of these assets can be accessed through private equity or private debt.

Valoral Advisors has tracked over 500 deals across the regional food and agribusiness sector since 2010, which collectively represent close to $70 Billion in deal volume, as shown in the following figure.

Fig. 22: Food and Agribusiness M&A transactions in South America by main sector (US$ Billion).



Source: Valoral Advisors analysis based on external research.

M&A activity – in volume and number of deals – has been increasing steadily after reaching a bottom in 2015, when the Brazilian crisis and the political uncertainty in Argentina were compounded by low commodity prices.

The main highlights are described below:

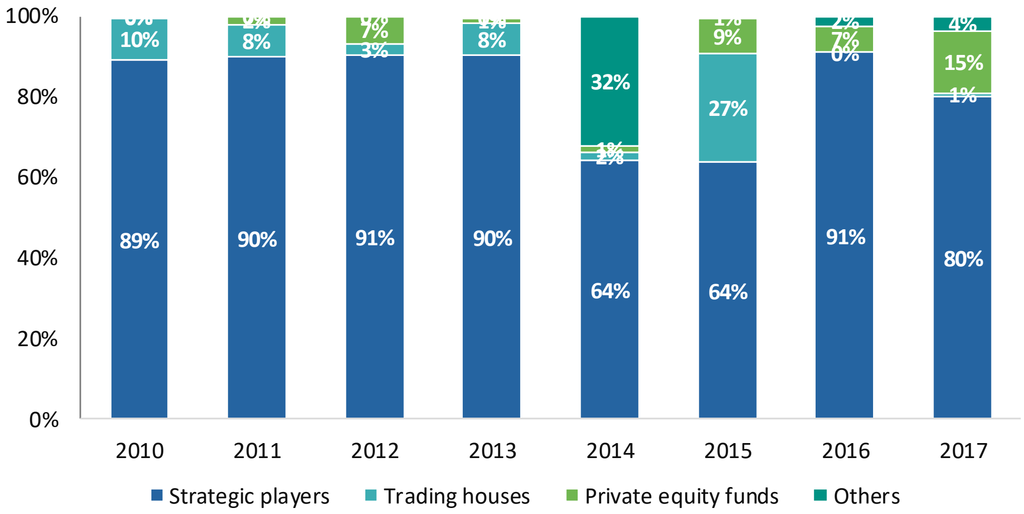
- Brazil consistently represents over 80% of regional M&A volume, followed by Argentina, which is recovering thanks to the improved local business environment.
- In line with global trends, food processing and food production is the sector that saw the highest growth in 2017, as strategic players and private equity firms look to increase presence in the growing regional consumer market.
- The other two major sectors - agricultural inputs supply & distribution and storage, logistics & trading – are likely to see increased activity as a new wave of ag input players from Europe and North America search for opportunities and as trading houses from around the world look to expand and consolidate their origination capabilities.
- There are a number of other niche strategies across the region which have been attracting investors' interest as of recently. These include:
  - Fish feed for aquaculture in Ecuador, and more broadly, aquaculture opportunities in Brazil and Chile.
  - Integrated fruit companies in Peru and Chile.
  - Animal protein business (dairy in Chile, poultry in Colombia, beef in Uruguay and Paraguay).
- The Brazilian sugar and ethanol sector is likely to see continued M&A activity as a combination of weak sugar and ethanol prices in Brazil from 2010 to 2014 wreaked havoc on the sugar industry, triggering the closure of dozens of mills and leading many others to seek bankruptcy protection, a process that is ongoing.

More investors join the regional M&A space

The South American F&A sector has been attracting a growing number of investors – both local and foreign – pursuing exposure to one of the few regions in the world with the potential to produce and export increasing surplus of food to the world.

In this process, new comers have joined the M&A market, including private equity firms, sovereign investment funds and even pension funds. But despite this interest, most of deals were led by strategic players, as illustrated in fig. 23.

Fig. 23: Breakdown of M&A volume according to acquirer's profile (% of total deal volume).



Source: Valoral Advisors analysis based on external research.

The following are some of the highlights from this analysis:

- 84% of the M&A volume in the 2010-2017 period corresponds to strategic players from across the broad food and agricultural sector.
- 7% corresponds to trading houses, which we differentiate from the strategic players as their investment focus is pretty much focused on grain origination and logistics, and to a minor extent in biofuels.
- One of the main surprises may be the private equity firms, which account only for 5% of total M&A volume in the 2010-2017 period, even though the trend shows an increasing presence.

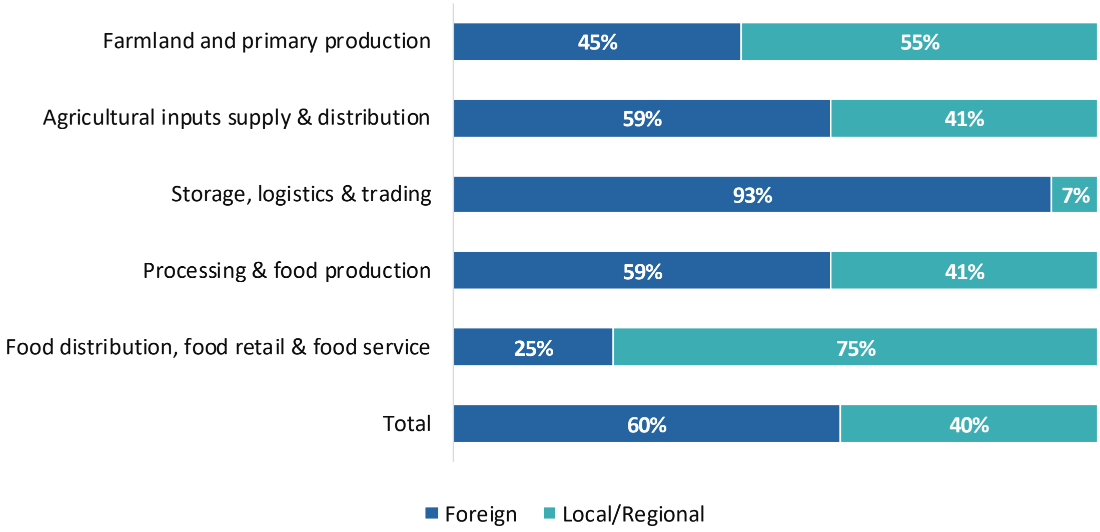
Recent fundraising across the region and beyond point to likely further involvement of private equity firms in the region, which anticipates more competition for assets and valuations on the rise.

More foreign companies and investors are building a regional presence

Looking at the 2010-2017 period, 60% of all the M&A volume executed in the regional food and agriculture sector corresponded to foreign companies or investors, and only 40% corresponded to companies and investors from within the region, in a process of continued internationalization of the sector.

The following figure illustrates the breakdown of foreign and local acquirers, by total M&A volume.

Fig. 24: Breakdown of M&A volume according to acquirer's origin (% of total deal volume).



Source: Valoral Advisors analysis based on external research.

While the general trend is for the industry's internationalization, the breakdown by segment reveals different patterns:

- In the ag input supply & distribution there is significant interest from foreign companies, looking to expand their footprint in the region and to own local established brands and products. However there has been a wave of local consolidation among local players too.
- The storage, logistics & trading sector is the one with most foreign acquirers, which is no surprise if we think about recent transactions by the Chinese and Japanese trading houses.
- In the processing and food production segment, a similar pattern as the one seen in ag input is taking place, but at a much larger scale. Some major subsectors emerge here, including beef production, poultry, pork, dairy, coffee, fruit juices, alcoholic beverages and the broad packaged food sector.
- In contrast, the food distribution, food retail & food service business remains pretty much a local and regional play led by local companies, albeit at a smaller scale than the other sectors.

Trading houses rush to secure origination assets in South America

The South American agriculture sector has been the focus of most Asian trading houses in their recent quest to expand their global presence. Among them, the Japanese ones have taken a leading role.

Known as "sogo shosha," the seven major Japanese trading houses – Itochu, Marubeni, Mitsubishi, Mitsui, Sojitz, Sumitomo and Toyota Tsucho - supply everything from energy to metals to grains and textiles in resource-scarce Japan.

Over time, they have expanded their footprints overseas, transforming into commodity houses as they have invested upstream in production and origination assets. Following the '08/'09 financial crisis, Japanese trading houses rushed to invest in physical commodity assets across the world and across the commodity complex: energy, metals and agriculture.

The downturn in emerging markets and the commodities rout in recent years, particularly in metals and energy, prompted a shift in focus. Because food demand is generally stable, the Japanese groups continued to increase their involvement in the field to become global agricultural traders, able to procure directly around the world.

Competing for a global footprint in agriculture

Japanese trading houses are important players in the global commodity trading business. But when it comes to agricultural commodities, they lag the "ABCD" group, that symbolizes the four companies leading the global agricultural flows: ADM, Bunge, Cargill and Louis Dreyfus, who have developed an international network of origination, storage, processing, transport and trading for much of the food produced and consumed globally.

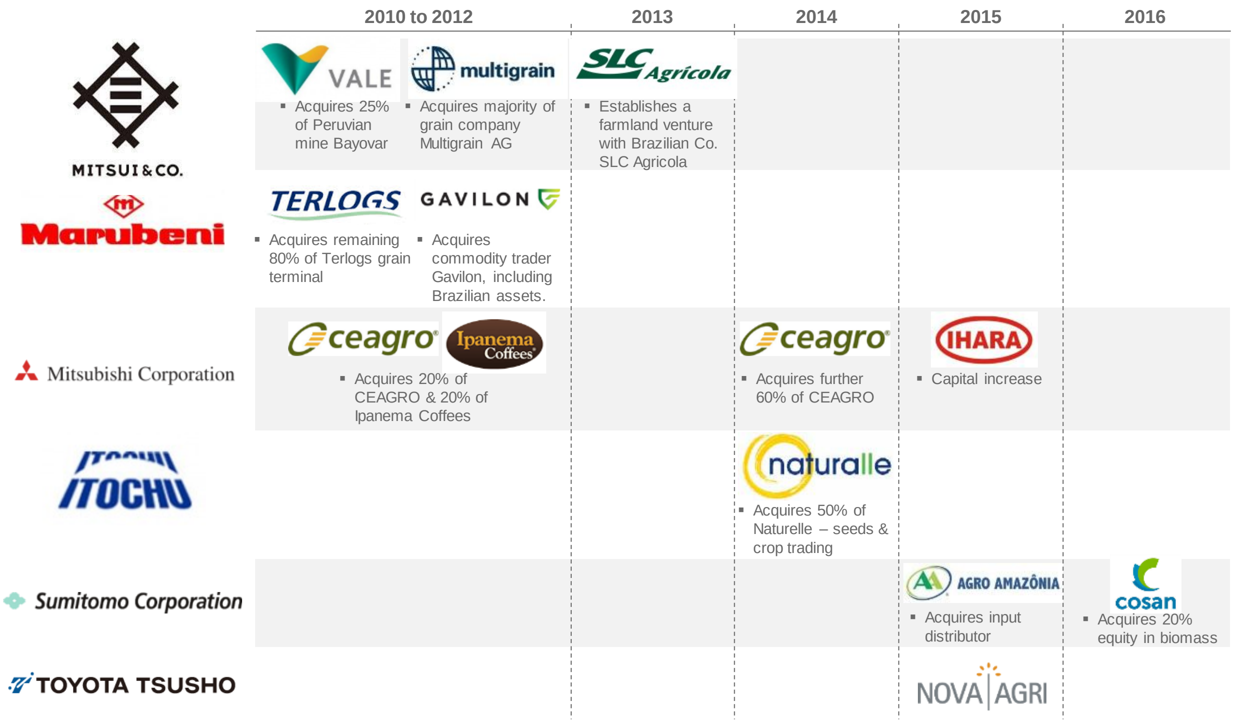
And new competitors have emerged recently: besides the "ABCD" group and Swiss-based Glencore Agri, a new group of Asian regional champions has emerged with the ambition to become global challengers: Chinese-based Cofco, which has acquired Nidera and Noble in recent years, is joined by Olam and Wilmar.

Interestingly, some of these companies have recently associated with institutional investors, with the goal of leveraging their financial resources to invest in capital intensive agricultural assets. The JV between Bunge and Saudi Agricultural and Livestock Investment Co (SALIC) that bought 50.1% of the former Canadian Wheat Board in 2015 for C$250 Million and the sale of a 40% stake in Glencore Agri to Canada Pension Plan Investment Board in 2016 for $2.5 Billion, followed by the sale of additional 10% stake to British Columbia Investment Management Corporation are some examples of this trend.

Japanese trading houses: Big in Brazil

Japanese trading houses invested billions of dollars around the world, including Australia and North America, helped by their vast balance sheets. However, Brazil has been the focal point of their investments, with all the seven major Japanese trading houses having acquired over 13 businesses worth over $2.5 Billion since 2010, without considering the growth capital invested to expand capacities.

Fig. 25: Recent deals led by Japanese trading houses in the Brazilian agriculture sector.



Source: Valoral Advisors.

Investments were generally concentrated in grain origination and export infrastructure, but also went towards farming and input distribution. These investments have in fact put Japanese trading houses in an attractive position to originate grains in the South American giant. Brazil's annual agricultural exports have grown at 17% CAGR between 2000 and 2013, according to FAO, and today the country is among the top exporters for a variety of products such as soybean, coffee, beef and orange juice, to name a few.

But Japanese investments in Brazil have not been without challenges. The deceleration in trade in recent years amid a slowdown in global growth and weak commodity prices combined with the Brazilian recession and local financial volatility have been a test for agricultural traders.

There were different drivers for the performance issues: for one, the entry of Chinese rivals has made the Brazilian market for collecting and selling grain a more competitive one. Besides, the FX volatility in Brazil in the past few years and the over indebtedness by farmers and traders brought a wave of loan defaults and financial stress that affected the whole value chain. Finally, corporate governance issues have been also mentioned, particularly when trying to transform local and informal structures into large, international corporations.

A new wave of opportunities, and capital

At the end of the day, trading agricultural commodities is a low margin business. The M&A wave seen in the Brazilian agribusiness sector specially until 2014 – which pushed valuations up - and the fight for market share are likely to have put stress on balance sheets and have eroded those low margins.

As we start 2018, other trading houses and food companies from all across Asia and Middle East are eying the region: companies from China, South Korea, Singapore and Saudi Arabia are among the most active screening for deals.

For many of these investors, it seems the strategy of the day is to focus on the growing opportunities to add value to their primary agriculture resources, which is especially true now that the easy gains of the commodity boom are a thing of the past. Interestingly, opportunities are both in the export market as well as in the local market. Some of the themes are:

- **Feed:** Grains used as inputs into related businesses like milling and animal feed processing - livestock and aquaculture – for the local market is a sought-after theme.
- **Organic agriculture**: Organic crops and fruits face attractive demand trends, not just in the northern hemisphere markets, but also locally in Brazil and increasingly throughout the region.
- **Specialty crops:** Non-GMO cereals and oilseeds, soy protein derivatives and pulses are in growing demand as well.
- **Wood chips:** This is an emerging space as Japanese trading houses and electricity retailers are increasing their imports of wood chips, with demand expected to surge amid a rush of construction of biomass power plants.

These sectors are growing in Brazil, although they remain a niche in the overall food and agriculture value chain, hence for investors a possible tradeoff is between the opportunity to create value and profits and the lack of sufficient scale.

This makes it critical to read the consumers' trends around the world to anticipate food sectors that will lead across the different regional markets. Developing partnerships with strong local operators is also a key success factor to help de-risking these new ventures.

AgTech & FoodTech: The Latin American opportunity

South America, Central America and the Caribbean – collectively Latin America – is a vast region blessed with unique resources and conditions to produce food.

But the region also faces global challenges to manage and grow an agricultural system in which natural resources are managed in efficient and sustainable ways to feed the local populations and to supply food to other importing regions across the world. This growth will be led by the adoption of technological innovation and the development of sustainable production systems which can effectively reach all the food and agricultural value chain.

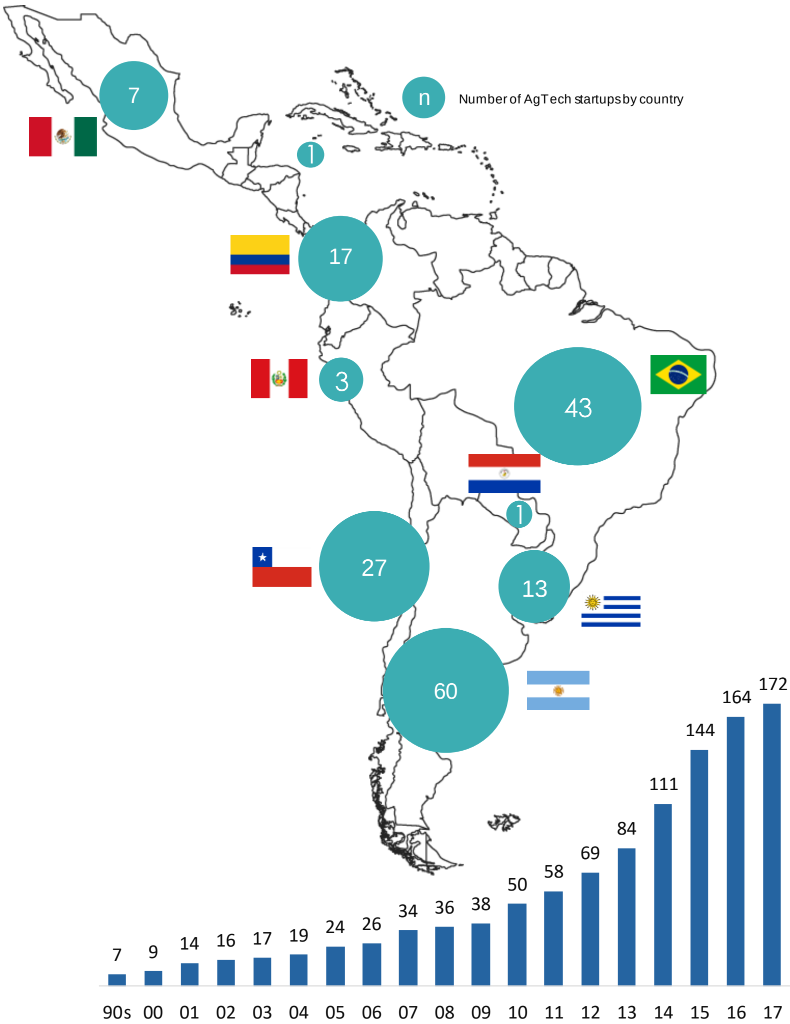
Latin American entrepreneurs are well-known for their unique ability to contribute creative and innovative solutions for the multiple challenges in the regional F&A sector. In this process, the AgTech & FoodTech opportunity has not only the potential to bring innovations, but also to generate technological disruptions that bring transformative changes in the way of producing and delivering food with a positive impact in multiple environmental, social and economic dimensions.

Today there are already over 170 AgTech & FoodTech startups in different development stages across Latin America, as shown in fig. 26.

Argentina and Brazil have emerged as the most relevant AgTech hubs or clusters in the region, with a significant expansion in the local ecosystems including entrepreneurs, farmers, agribusinesses, academy, public agencies and other industry players.

But the innovation wave is expanding across the region, driven by the local needs and opportunities for which AgTech & FoodTech innovations can bring solutions.

Fig. 26: Number of AgTech & FoodTech startups across the region.



Source: Valoral Advisors.

Accelerating the regional AgTech & FoodTech innovation

These startups are part of a regional entrepreneurial ecosystem that is growing and driving disruption in diverse sectors such as row crops, permanent crops, the broad animal sector, forestry, and across all the production, transformation and services in the food and agriculture value chain.

But despite the many advancements made in Latin America's AgTech & FoodTech space, tremendous opportunity still lies ahead for the sector. The success of the AgTech & FoodTech innovation in Latin America will depend in a significant way in the growth of this ecosystem that can enable and empower entrepreneurs to pursue the opportunities in the region.

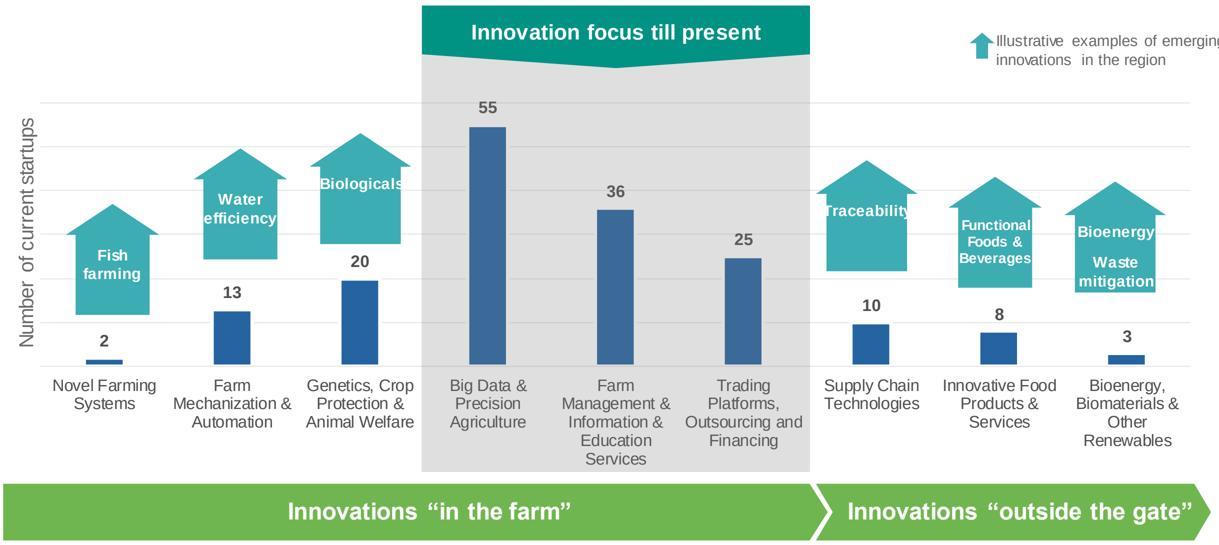
One of the newest initiatives in the region is The Yield Lab LATAM, the Latin American program accelerator of the Yield Lab network, launched in 2017. The Yield Lab, founded in September 2014 in St. Louis, Missouri, is one of the first accelerator programs to focus on the global agriculture technology market, bridging the critical gap between innovation and successful businesses, by supporting agriculture technology companies with funding, mentorship, training and networking opportunities.

The Yield Lab LATAM is conceived to take a leading role in building and nurturing a world-class AgTech & FoodTech ecosystem in Latin America, by supporting entrepreneurs, bringing together public and private stakeholders, providing funding and driving the "market making" needed to support the long-term growth of the sector.

2017 marked an inflection point in the region, as the regional ecosystem takes shape and new players come in. There is a general view that if we can unite the creative resilience of Latin American AgTech & FoodTech start-ups with the expertise and resources of their more developed counterparts, the potential is truly limitless.

Until today, two thirds of the startups reviewed focus on three categories aim at digitalizing agriculture. Going forward, we see innovation spreading to other relevant themes including water management, biological solutions for crop protection and nutrition, food safety and traceability, food & ag waste management and new applications of biomass for renewable energy production, among others.

Fig. 27: Breakdown of existing startups and emerging innovations by subsector.



Source: Valoral Advisors.

Investment & regulatory outlook in the South American F&A industry

Country | **Outlook** | **Key developments to follow**

Argentina

GDP ’17e: +2.8%

GDP ’18e: +3.0%

- The country is set to grow at a faster pace in the coming years on higher private consumption and fixed investment, supported by improving business confidence.
- The government is taking measures to narrow fiscal deficit, reduce inflation and improve competitiveness, but not free of political and economic challenges.
- The local agriculture sector has rapidly responded to the improved business conditions, with further potential expansion ahead but challenged by high taxes.
- Row crops are well placed to benefit, with increasing demand for feed. Permanent crops also offer an opportunity through investments in new plantations with sought-after varieties and latest technology.
- Cattle is among the fastest-growing sectors, as the country recovers export levels.
- Forestry – particularly in the Mesopotamia area – is also expected to grow and catch up with neighboring countries.
- Foreign investment in farmland has been slow as the existing legislation bring restrictions, so capital flows have diverted to farming operations, leasing farms for crops and cattle.

Bolivia

GDP ’17e: +3.8%

GDP ’18e: +3.8%

- In late Nov’2017, the Constitutional Court cleared the way for Mr. Evo Morales to seek a fourth consecutive term, even though his proposal to remove term limits was rejected by most Bolivians in a previous referendum.
- Natural gas production and exports, which supports government and private consumption, should underpin growth prospects, albeit influenced by lower gas prices.
- The agriculture sector is recovering from a major drought during the 2016/2017 season and may have the ability to contribute to the country’s economic diversification and to improve local food security.
- Farmland expansion in the region of Santa Cruz de la Sierra has continued, targeting cattle and crop production even when land ownership remains a source of tension.

Brazil

GDP ’17e: +0.6%

GDP ’18e: +1.5%

- Economic growth is expected to improve in 2018, helped by lower inflation, lower interest rates and a reform package that the government is pushing through and which aims at regaining competitiveness.
- Political uncertainty will remain high as the country elects a new president in Oct’2018.
- Against this backdrop, the local F&A sector continues to lead the growth and exports, supported by record production in many key commodities.
- However, the meat scandal that weighed heavily on the beef sector in 2017 is a reminder of the hidden risks and the need for improved corporate governance.
- Farmland opportunities abound in the country after years of lower farm income and financial distress led by over indebtedness. However, the existing legislation is preventing further foreign investment in agricultural real assets.
- The sugar and ethanol local industry continues to undergo a turnaround process following the massive defaults seen in previous years.
- M&A activity across the F&A value chain is likely to continue growing as strategic players, private equity investors and institutional investors bid for assets across the whole value chain.
- Many sectors are primed to grow and see more consolidation ahead, including input distribution, grain origination and trading, animal protein – including aquaculture -, fruit production, and forestry, among others.

GDP data source: Focus Economics, BBVA.

Investment & regulatory outlook in the South American F&A industry

Country | **Outlook** | **Key developments to follow**

Chile

GDP ’17e: +1.3%
GDP ’18e: +2.4%

- Conservative candidate Mr. Sebastián Piñera got elected back in Dec’ 2017, with promises to reinvigorate the country’s flagging economy.
- The recovery was more gradual in 2017, but the conditions are in place for better performance in 2018 driven by recovering confidence, accommodative monetary policy and an end to the uncertainty surrounding the outcome of the elections.
- Improving copper prices, the main export commodity in the country, should provide some support.
- Chile remains an attractive market as it relates to investments in its F&A sector: recent investments were focused on dairy products, pork production, fruit production and wineries.
- Aquaculture remains a key sector: Chile is the world’s second largest salmon producer after Norway. Despite the growing global demand, the local sector is not immune to challenges, as the local production suffered from an algae bloom in 2016 and there is pressure to reduce the use of antibiotics to fight bacteria.
- Looking broadly at the opportunities, one of the concerns mostly raised by foreign investors and managers is the relatively high valuations across the board.

Colombia

GDP ’17e: +1.5%
GDP ’18e: +2.0%

- Colombia’s economy bottomed out during 2017 following a process of economic slowdown which began with the drop of oil prices in 2014. Going into 2018, economic indicators are showing positive signs.
- The agriculture sector is gaining dynamism both in traditional crops like coffee but also in new ones – like avocados -, supported by good production levels and the opening of new export markets.
- Agribusiness is one of the priority sectors to continue receiving investments to modernize production of export-led products (tropical fruits, coffee, cocoa, etc.), to scale up operations with mechanized technology and to improve ailing infrastructure.
- Colombia is also attracting interest for food production linked to the local market, such as animal protein, palm & vegetable oils and rice. Cargill recently entered the local poultry business with an important acquisition.

Ecuador

GDP ’17e: 0.7%
GDP ’18e: +1.4%

- Ecuador’s economy has suffered in recent years from the drop in crude oil prices, their major product exported.
- Going forward, growth in 2018 is expected to pick up only moderately as the government is planning spending cuts to reduce the fiscal deficit.
- The political outlook is also affected by the referendum on constitutional reforms, proposed by the president, Mr. Lenin Moreno, in a power struggle with his predecessor from his same political party, Mr. Rafael Correa, which threatens to weaken governability in 2018.
- The agricultural and fisheries sectors remain among the most dynamic in the country. Ecuador is positioned as a major producer and exporter of bananas, cocoa and crustaceans & molluscs - mainly shrimp -.
- Investments in recent years were largely focused on increased production capacity in aquaculture feed, to allow increased production of shrimp.
- The government is in the process of updating the legal framework of aquaculture and fisheries activities with an eye on strengthening responsible fishery management and on framing the law according to the international codes and regulations that govern fishing practices.

GDP data source: Focus Economics, BBVA.

Investment & regulatory outlook in the South American F&A industry

Country	Outlook	Key developments to follow
Paraguay GDP '17e: +3.7% GDP '18e: +3.5%		• Paraguay will elect a new president in April 2018, after President Horacio Cartes abandoned his plans to change the constitution to allow him to run for a second term. • The economy continues to perform well, supported by a consistent agricultural sector and further investments in the country. • The agribusiness sector is one of the priority areas for the country's developments. The country has become a major beef exporter in South America and the local soybean agricultural complex continues to expand. • The sector's potential is still limited by lack of infrastructure, but the economic improvement in neighboring countries – Brazil and Argentina – are likely to provide further opportunities in the food and agriculture sector.
Peru GDP '17e: +2.4% GDP '18e: +3.9%		• Late in Dec'2017 President Mr. Pedro Pablo Kuczynski survived impeachment vote over corruption charges, but the political clash left both congress and the president enjoying rock-bottom approval ratings. • The economic outlook is improving driven by fiscal stimulus, favorable external conditions and the dissipating effects of the "El Niño Costero" weather phenomenon that affected crops and infrastructure in early 2017. • The country has been effective in promoting macroeconomic and legal stability, and tax predictability to generate an investment-friendly climate. • This should be the basis for attracting new investments to the food & agriculture sector in coming years, especially high-value fruits and vegetables, including avocado, asparagus, grapes, berries and citrus. • The country has been very successful in opening markets for Peruvian fresh produce.
Uruguay GDP '17e: +3.2% GDP '18e: +3.1%		• Uruguay has been recovering during 2017 and the positive outlook should extend into 2018, supported by improvements in its main neighbors Brazil and Argentina. • The country has a well-established, export-oriented and diverse agribusiness sector that should keep attracting investments. • The stable economic and political environment in the country continues to attract private investors into local farmland assets, where the lower commodity prices in recent years have driven a reduction in farmland prices of 20-30% compared to the peak seen 2014. • Current low farm profitability is affected by low ag prices and high internal costs (energy, taxes). Row crops and the dairy sector – with high indebtedness - are more affected. • The cattle business is performing better, with record exports levels in 2017 – led by China – and the prospect of opening the Japanese market later in 2018. • Forestry activities are also steadily growing: Back in Nov'2017 UPM, the Finnish pulp & paper Co., signed an agreement with the Government for a potential pulp mill investment that would require an investment of close to €2.0 Billion. The mill would be the third one to be built in the country, in a sign of confidence on the ability of the country to compete in global markets.

GDP data source: Focus Economics, BBVA.

Methodological notes

The information and opinions in this publication were prepared by Valoral Advisors Sarl. The information and opinions have been prepared from public sources, including but not limited to fund documents available from fund managers, companies' websites, industry presentations and industry news.

The funds surveyed represent only a limited portion of the available funds in the market. The survey focuses only on investment funds managed by private asset managers that invest in assets related to the food and agriculture industry and which are offered to a range of retail, HNWI and institutional investors.

This survey does not include most commodity and equity hedge funds. The survey does not consider the direct investments by sovereign funds, pension funds and government agencies and funds that are privately owned and not opened to investors.

The results shown may include assumptions and the information and opinions may not be up to date.

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Disclaimer

About Valoral Advisors

Valoral Advisors is an internationally recognized advisory Firm specialized in the global food and agriculture investment space. We work with fund managers, private & institutional investors, and business owners to help them invest profitably whilst fostering a better agriculture – more productive, more efficient, and more sustainable.

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