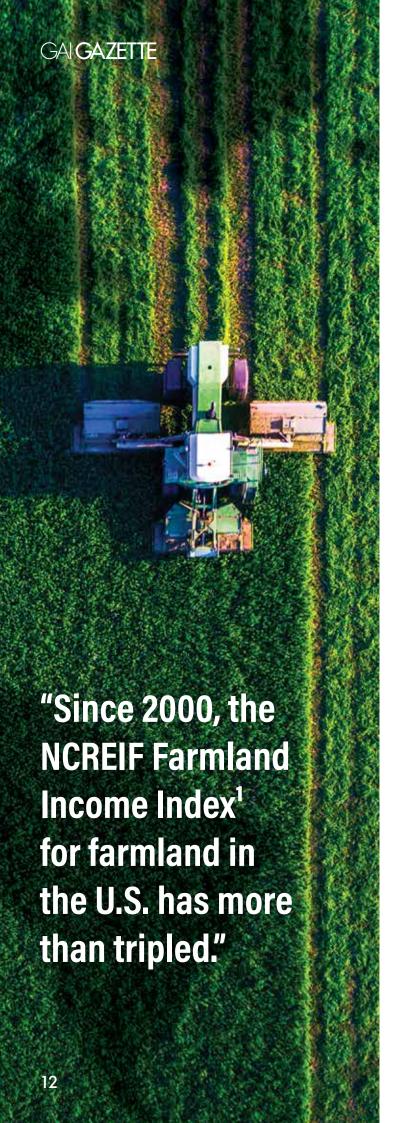
TRENDS IN ALLOCATIONS TO FARMLAND INVESTING A GLOBAL PERSPECTIVE



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The evolution of agriculture as an asset class is reflected in shifts in allocations of institutional capital across the value chain.

THE GREAT FARMLAND RUSH OF THE 2000s

While institutional investment in farmland began in earnest in the 1970s with a number of obscure U.S. funds, allocations by institutional investors to this real asset class at a global level accelerated dramatically in the mid-2000s.

Increased demand for food crops and animal protein drove agriculture commodity prices up across the board, generating a massive transfer of wealth to farmers via growth in farm income and appreciation in land values. Since 2000, the NCREIF Farmland Income Index¹ 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.

Institutional investors were attracted by the advantages that agricultural real assets offered compared to traditional paper assets: relatively higher returns with lower volatility while providing diversification for the underlying portfolio and an inflation hedge. In 2005, fewer than 20 farmland funds were operating around the world. By 2014, that number jumped to more than 100 and currently exceeds 130, with estimated aggregated assets under management (AUM) of \$32 billion.²

The global farmland investment space, which successfully weathered the 2008 and 2009 economic crisis, was one of the primary beneficiaries of the race for real assets during this period. A relatively fluid market for farmland developed in the U.S. and other major producing regions around the world due to the scale of institutional allocations to the sector, combined with increasing consolidation of farmland ownership and operations due to a declining population of farmers and the drive to realize cost efficiencies by operating at scale. Initially the focus was investing in row crops with a traditional buy and lease operating model.

Since 2013, conducive weather resulting in record harvests across major producing regions combined with a relatively stronger U.S. dollar and slower global growth, sent agricultural commodity prices tumbling to near multi-year record lows, with soybean prices reaching \$8.5 per bushel and corn \$3.5 per bushel levels in early 2016. Over the past two years, the perception has been that agricultural commodities as a class have joined the broader fallout in commodities referred to as the end of the commodity "super cycle".

THE FARMLAND DOWNTURN: RECALIBRATING ALLOCATIONS

Farmland investors and farm operators have taken note of the changing market conditions, which has put farmland prices under pressure. Geopolitical tensions in the CIS region following Russia's extra-legal annexation of Crimea and incursion into Ukraine, the ongoing political and economic crisis in Brazil, uncertainties resulting from Brexit, the U.S. presidential election, and legislation banning or limiting large-scale foreign ownership of land in several countries have dampened enthusiasm for new investors to allocate capital to the farmland asset class. As pure real asset farmland strategies began to lose luster, the number of private equity funds investing across the food and agricultural value chain – in upstream (inputs and farming), midstream



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(storage/logistics and value-added processing), and downstream (retail distribution, renewable energy refining and green products) sectors – has increased. This has resulted in valuation multiples typically seen in other industrial sectors becoming more prevalent in the animal protein complex, food and beverage manufacturing sector, and food distribution.

Given low interest rates, there also has been an expansion into new areas. On the debt side, we have seen an increase in allocations to agriculture trade finance, and in the venture capital space to opportunities driven by the technological convergence between agtech and other high-tech sectors and industrial sectors, including the digital economy, gene editing, and pharmaceuticals.

Over the near to medium term, the level of institutional interest in farmland will depend on the targeted allocations within portfolios for real assets. There is anecdotal evidence that some investors are reconsidering their real asset portfolios and are rebalancing allocations out of strategies that have not met expectations while boosting investment in sectors that have. For example, earlier this year the Canada Pension Plan Investment Board (CPPIB) announced that it would no longer make allocations to farmland investments and that it was open to divesting its existing farmland.

However, based on conversations with leading pension funds, endowments, and insurance companies, the overall sentiment among institutional investors points to increased capital flows to farmland assets over the coming decade. As most institutional investors currently have no or negligible exposure to farmland, they should consider allocating more capital to illiquid strategies to capture returns uncorrelated to public markets and diversify their portfolios given that the eight-year equity bull market and the 30-year fixed income bull market are at the late stage in their cycles and vulnerable to disruption.

TIME TO SOW SEEDS?

Despite the recent softening of crop prices, the long-term macro structural drivers in the food and agriculture sector remain bullish for agricultural crops over the next decade and beyond.

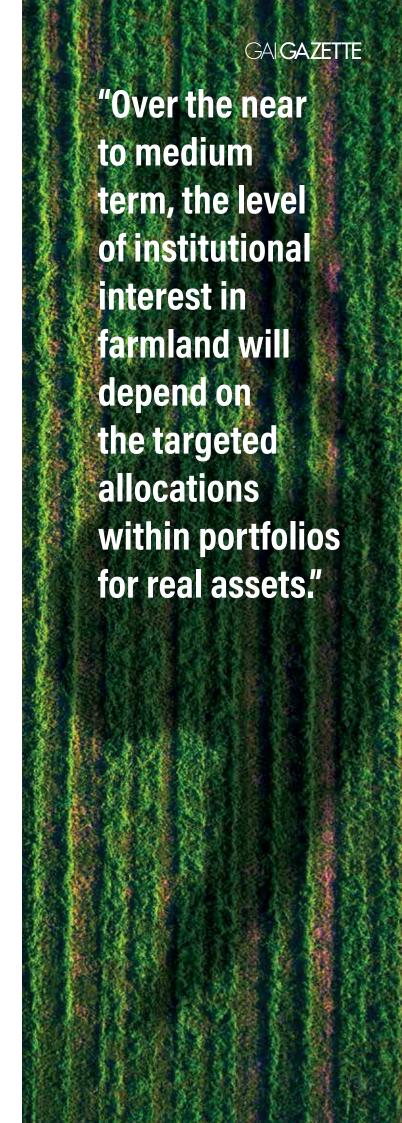
Against the current backdrop of low crop prices, the farmland investment space is in a state of flux with managers seeking to generate future returns from a combination of strategies involving active management of farm operations, land transformation and/or consolidation, and the deployment of capital to higher value permanent and specialty crops and value-added products derived from biomass. Recent developments in the industry point to a possible new wave of investments into land that have the potential to reignite the appetite for this asset class.

HEALTHY FOOD, SUSTAINABILITY AND THE RISE OF THE CONSCIOUS CONSUMER

With consumers' habits shifting in significant ways, we are entering one of the most exciting periods in the history of food production and logistics as technology assumes a larger role in food processing, distribution, and retail environments.

The push for sustainable agriculture and consumers' increased awareness about food quality, traceability, and healthy lifestyles have become major drivers for the integration of new technologies







from adjacent industries (manufacturing and pharmaceuticals, etc.) and the adoption of new business models. These trends have already begun to have an impact across the food and agriculture value chain, with the emergence of agtech and foodtech investment ecosystems around the world.

Growing demand for organic food is a major driver for new investments in organic row crops and permanent crops. According to the Research Institute of Organic Agriculture (FiBL), organic farmland area reached 50.9 million hectares in 2015 on a global basis, compared to just 11 million at the beginning of this century.³

Consumer interest in organic, non-GMO, gluten-free, and antibiotic-free products, as well as super foods and specialty crops, are driving new investments in farmland conversion and the adoption of new farming techniques, including indoor agriculture. A distinctive aspect of these opportunities is that they typically involve the integration of primary production with different processing and supply chain activities that require investment.

STRATEGIC AND INSTITUTIONAL INVESTORS: NEW FARMERS ON THE BLOCK

Strategic players, including trading houses and food companies – from fruit processors to chocolate makers – have suffered in recent years from the high volatility in commodity prices and recurring disruptions in their supply chains. At the same time, institutional investors continuing their search for yield, preferably in alternative assets, have been linking up with institutional investors to develop agricultural production of high-value crops. The business models these collaborations adopt typically involve the development of greenfield plantations with offtake agreements, or the acquisition of existing plantations which are then leased back to the operator.

The long-term nature of these investment partnerships is conducive to meeting the needs of both capital providers and the industry players, assuring a minimum return over a set period of time for investors and lower price volatility for strategic players for the offtake.

IMPACT INVESTING

In 2015, the United Nations adopted 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, and the reduction of food loss and food waste are among the key challenges and opportunities for achieving this agenda.

Private and institutional investors recognize that the food and agriculture global industry will have great social, economic, and environmental impact on the world's sustainable development, hence their growing interest to actively invest in the sector via different impact initiatives.

Agriculture investing remains a niche category in impact investing. According to the Global Impact Investing Network's (GIIN) 2017 Annual Impact Investor Survey, just 7 percent of total impact investing assets were allocated to food and agriculture. Yet, approximately 50 percent of respondents had some allocation to the sector - greater than any other industry.⁴

The agriculture space offers a broad spectrum of impact investments for institutional investors: from reforestation and sustainable forestry assets, to agriculture regeneration and organic farming, to landscape restoration and water management. These strategies are scalable and can provide competitive returns in addition to positive social, economic, and environmental outcomes.

These trends also highlight new approaches to the pursuit of farmland investing:

DIRECT INVESTING VS. FUND INVESTING

Large institutions such as pension funds are increasingly developing in-house sectorial expertise to pursue direct investments as opposed to investing in funds. The trend to invest in integrated operations and to partner with industry players also favor this trend.

Income vs. appreciation: With robust appreciation in farmland values seen during the 2000s and early 2010s in many markets not likely to be repeated any time soon, institutional investors have shifted their attention to the income component for returns, with three major implications.

 First, the initial entry price level has become more critical in terms of determining overall investment performance, as the expected long-term appreciation rate is limited. This is particularly true for row cropland and timberland.



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- Second, institutional investors are aggressively targeting investments in permanent crops, given the opportunity to generate higher returns compared with passive investments in row cropland, albeit with higher operating risk.
- Third, to mitigate risk and capture higher returns, institutional investors are keen to pursue partnerships with strategic offtake partners.

2018 GLOBAL FARMLAND TOUR: HARVESTING NEW OPPORTUNITIES

Farm operators continue to account for most farmland purchases in North and South America because they know the asset class well and they seek to take advantage of individual parcels for sale adjacent or contiguous to their existing holdings to enhance the scale of their operations.

In contrast, larger tracts of farmland are more likely to attract the interest of institutional investors. A review of the world's major farmland hubs points to different value drivers in each of the primary regional farmland markets for 2018.

EUROPE

- Land consolidation strategies remain a sought-after theme in Eastern Europe, as land fragmentation and price gaps provide value for the development of large scale, professional farming operations.
- In Western Europe, there are niche opportunities in permanent crops, such as olives and nut trees in the Iberian Peninsula, favored by conducive weather and the supportive global demand.
- Across Europe, crop conversion to organic systems is well underway, providing opportunities particularly in the fresh produce space.

SUB-SAHARAN AFRICA

 Given U.N. estimates that Africa's share of the global population will increase from 16 percent in 2015 to 25 percent in 2050 and 39 percent in 2100, Africa will need to produce more food to meet the caloric requirements of this growing population. That is why current investment opportunities in the region are focused on substituting food imports with local production.

- South Africa leads the agricultural production in the region with other countries also offering attractive opportunities: from cassava and rice in Nigeria, to corn, beef, and fisheries in Zambia.
- Mainstream crops such as sugar cane and palm oil, where new sustainably managed plantations are being developed, also offer opportunities for investment.

NORTH AMERICA

- A number of REITS (Real Estate Investment Trusts) have been launched successfully to provide retail investors with an opportunity to invest in farmland in the U.S. While initially focused on passive investing in broad acre cropland, increasingly these funds are pursuing investments in permanent and specialty crops promising higher returns.
- With demand for organic meat increasing more than 10 percent annually in the U.S., investment by both strategic players and financial investors in organic animal protein production is experiencing strong growth.
- While strict environmental regulations limit the opportunity to develop aquaculture production in U.S. coastal waters, growing consumer demand for fresh, traceable seafood has resulted in several land-based aquaculture projects to produce fin fish and shrimp adjacent to large metropolitan markets.

SOUTH AMERICA

- Successive years of low commodity prices, over-leveraged balance sheets, and drought in the northeast have left many farmland assets in Brazil searching for new investors. While current restrictions on foreign ownership limit opportunities for foreign large-scale investment, this could change once drafted legislation is enacted.
- Argentina's farmland market is awakening thanks to the pro-business government that took office in December 2015. Valuations for grazing land in the north and forestry in the Mesopotamia area currently appear to be attractive. The central area of the country also offers attractive opportunities for row crops and for mixed operations.







- Uruguay remains a top destination for U.S. and European capital due to its business-friendly environment that provides safety but limits potential returns.
- Paraguay has quietly emerged as the second largest beef exporter in South America following Brazil, with some of the highest levels of productivity performance in cattle production. Forestry in the east of the country also is emerging as an attractive theme.
- Permanent and specialty crops in the Andean region Chile, Peru, and Colombia (in that order) – have attracted investments from outside the region.
- 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.

OCEANIA AND AUSTRALASIA

- Oceania, along with North and South America and, is one of the key farmland destinations for institutional capital.
- Interest in the region has been shifting from cereals towards animal protein production and permanent crops to meet demand from changes in Asian diets.
- The recent acquisition of Lankester Avocado's orchards and packing operations in Australia by a joint venture between Costa Group and Macquarie Agricultural Funds Management illustrates investor interest in permanent crops.⁵ Other similar deals have attracted institutional investors with a buy and lease model and securing offtake agreements with industrial users.
- Large-scale beef cattle and dairy production in Australia continue to attract foreign capital to meet growing demand for animal protein in Asia.
- Water is also an attractive theme: the Murray-Darling Basin (MBD), one
 of the world's largest and most productive river basins, provides an
 important portion of Australia's food supply and is the focus of one of
 the largest water trading markets in the world.

CONCLUSION

We believe that macro drivers supporting investment in the food and agricultural value chain remain bullish. The run-up in real asset investing in farmland over the past decade is a precursor for increased allocations of capital by institutional investors to a broader array of investment opportunities across different sub-sectors, including permanent and specialty crops, agtech, and foodtech.

Navigating which types of production (crops and animal protein), which geographies and which operating models to employ (passive, active, and strategic offtake agreements) remain the challenge for investors seeking to reap rewards in the sector over the long-term.

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