

ASSET CLASS INSIGHTS:

# Reframing Farmland as an Investment



A Compelling  
Opportunity  
in an Inflationary  
Environment

A large center pivot irrigation system is shown in a field at sunset. The system consists of a long metal arm supported by a central pivot point, with multiple smaller arms extending outwards. The field is a mix of green and brown grass, and the sky is a warm orange and yellow. The overall scene is bathed in the soft light of the setting sun.

**“Some 60 percent of respondents to a McKinsey & Company survey said they believe profits will hold steady or experience growth in the next 24 months, despite supply chain disruption, high energy prices and soaring inflation that has had a substantial impact on the price of inputs such as fertilizer.”**

*Agri Investor, September 2022*

**Recent geopolitical instability, paired with lingering supply chain issues, has impacted global agricultural imports, particularly corn and wheat.**

As food prices reach record highs, demand for farmland has continued to grow. Investors are looking for a way to capitalize on the inflationary environment, driving land values up 25–30% across the United States in the past year.<sup>1</sup> While institutional investors have increased the capital funneled into farmland investments, global inflationary pressures have further accelerated interest in what has historically been a relatively mundane asset class.

With a total value exceeding US\$2.9 trillion,<sup>2</sup> more than 190 crop types, and over US\$230 billion in aggregate crop production value,<sup>3</sup> the U.S. farmland market represents a significant—and growing—market for investment. The global farmland market is experiencing one of its most critical transition periods. A combination of farm operators and family-controlled entities owns the majority of U.S. farmland. As a result, the market is geographically fragmented, asset turnover is low, and market data is often opaque or asymmetric. Until recently, barriers to investment were high, but new vehicles and platforms are available to expand access to what has historically been a relatively inaccessible asset class. Farmland is unique because it creates value on two fronts: annual income through rents paid out by tenant farmers and long-term land appreciation. Direct farmland investments have delivered superior returns with far less risk exposure than agricultural equities. Until recently, individual investors interested in farmland have been disadvantaged because they could not make direct investments and were limited to agriculture exposure through public equities or commodities.

## Farmland Asset Exposure

An investment in farmland can take on several forms, mainly direct farming, leasing models, and indirect assets. In the direct farming model, a grower farms the land for a fee; growers rent the land they farm in the leasing model. The critical difference between these structures is that direct farming typically has more exposure to crop yield variability. In contrast, the leasing model has a fixed rent base with a variable rent component tied to production. Direct farming usually results in higher returns, which compensate for the crop exposure volatility and more significant upfront investments, while leasing generates more consistent but slightly lower returns. Alternatively, indirect assets along the supply chain, such as storage assets or water assets, can also offer investors considerable exposure to returns associated with farmland. Most commonly found in mutual funds or private funds, supply chain assets remain an integral part of farmland infrastructure and generate income for investors through fixed rent or volume contracts.



Corn



Wheat



Soybeans

### Grow Your Knowledge

The wide variety of crops planted on farmland provides inherent portfolio diversification benefits. Multiple crops may thrive on a given piece of land, giving the farmer options for what to plant. Farmland is generally classified as either “row crops” or “permanent crops.” Row crops are either “commodity crops” such as corn, soybeans, wheat, and cotton or “specialty crops” such as produce and potatoes. Permanent crops are “specialty crops” such as tree fruit (e.g., apples, peaches and grapes) and tree nut crops (e.g., almonds, pistachios and walnuts). Commodity crops typically have lower margins, stable growth, and high crop yields. This crop sector has historically provided steady income with higher land appreciation. Specialty crops usually have higher margins, high growth potential, and lower crop yields, offering a return profile of high income with more moderate land appreciation.



Almonds



Apples



Cherries

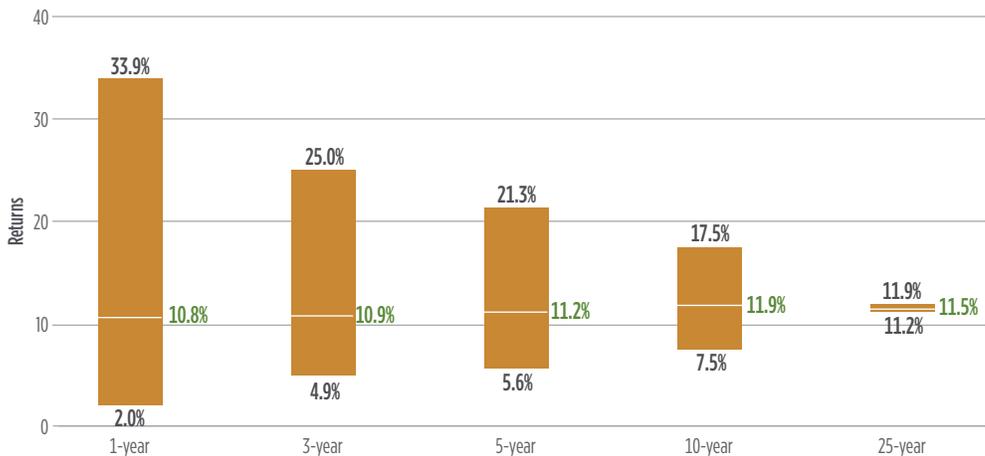
<sup>1</sup> *Financial Times*, 4/5/22. <sup>2</sup> Agriculture land asset value including buildings. USDA, National Agricultural Statistics Service as of 2020. <sup>3</sup> Value represents the USDA estimate of crop cash receipts for 2021.

## Harvesting Income and Return

Farmland presents a compelling investment opportunity because it has historically been one of the most stable asset classes, delivering investors positive returns without significant deviation. The NCREIF Total Return Farmland Index has generated positive returns every year since its inception in 1991.<sup>4</sup> The graph below depicts gross returns over hypothetical holding periods. While short-term returns tend to vary more significantly, the average gross return of the index has been approximately 11.5% over the last 25 years.<sup>5</sup>

### Range of Farmland Returns by Holding Period (1991–2022)<sup>5</sup>

Midpoint return indicated by white line and green returns figure



“With the increasing scarcity of arable farmland on the planet, global farmland investments may provide an attractive, uncorrelated source of income and additional return potential. Furthermore, farmland returns have demonstrated strong positive correlation to inflation over time and as such may serve as an inflation hedge.”

Kimberly Flynn  
Managing Director  
XA Investments

Reduced volatility reinforces consistent returns across farmland compared to asset classes offering similar returns. Additionally, farmland benefits from a dual return structure comprised of both income and appreciation. The following graph illustrates how farmland has outperformed the S&P 500 by 120 basis points annually since 1991 while experiencing less than half of the S&P 500’s volatility.

### Returns vs. Volatility (Standard Deviation) (1991–2022)<sup>6</sup>



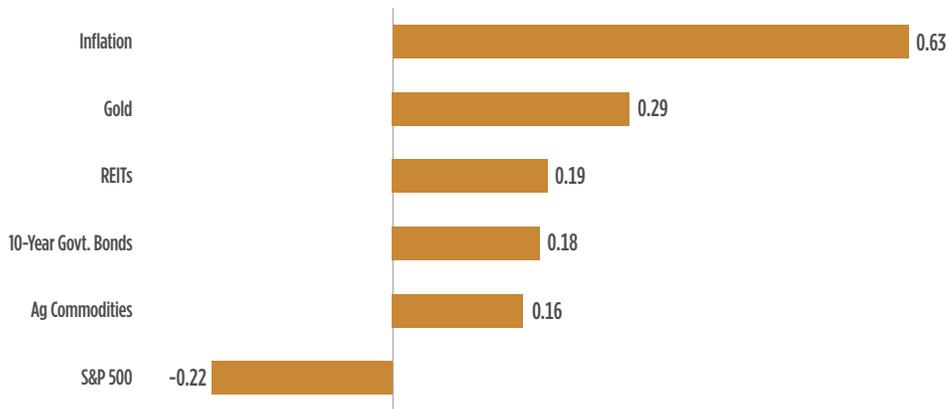
<sup>4</sup> International Farming, NCREIF Total Farmland Index. Data as of 12/31/2022. <sup>5</sup> International Farming, NCREIF Total Farmland Sub-Index return ending Q4 2022. Figures are gross of fund-level fees and expenses.

<sup>6</sup> International Farming, NCREIF Farmland Index (Total Farmland Sub Index), St. Louis FRED database, data accessed 2/21/2023.

Farmland investments can improve portfolio diversification because they are real assets, which traditionally have negative correlations to stocks and bonds. Demand for food remains relatively unchanged throughout economic cycles. Farmland's dual return structure also diminishes correlation to traditional investments. Long-term land appreciation can deliver value even if production volume-based payments decrease, similar to equities cutting dividends during a downturn. However, diversification is not limited to the asset class level, as different crop types within farmland have proven to be negatively correlated. Differing soil and weather requirements mean some crops thrive in conditions that others might not, offering an additional layer of diversification for investors looking at multiple farmland investments. Nevertheless, adequate diversification can be difficult to achieve, as investments in single farms come with high minimums. As a result, many investors may not have sufficient capital to invest in several properties for meaningful crop diversification.

### Correlation to U.S. Farmland<sup>7</sup>

Correlation from 1970–2021



At the core of the investment thesis for farmland is the balancing act between a growing global population and the importance of meeting sustainability goals. The global population will likely reach 9.7 billion by 2050, and some organizations believe a 50% increase in food production is required to meet the increased demand.<sup>8</sup> Existing and new farms must not only produce more food to sustain the current population growth rate but do so more efficiently and with climate impacts in mind.

Efficiency is paramount, especially given that the amount of arable farmland worldwide continues to decline as climate shifts and poor management practices degrade previously good farmland. Unsustainable farmland practices have contributed to significant soil degradation and will continue to do so, as 90% of the planet's soil could experience degradation by 2050.<sup>9</sup> Land values are increasing significantly, driving valuations in the U.S. up 75% for the average acre of land in the past 15 years.<sup>10</sup> Changes in soil health illustrate the importance of adopting more sustainable farming practices and the investment opportunity that lies within the increasing scarcity of arable farmland.

Additionally, food preferences from consumers (e.g., more demand for healthy foods and organic foods) are driving related shifts in strategy by food manufacturing companies across their supply chains. Food companies and distributors now require greater reliability, specialization, quality and cost efficiency. Direct growers can meet these requirements because they have the requisite operational scale and access to large tracts of land.

<sup>7</sup> International Farming, USDA, "Stocks, Bonds, Bills, and Inflation Yearbook" (used for inflation, S&P 500, and LT Govt. Bond data) by Ibbotson Associates, Wilshire US REIT Index (Begins 1978). The appreciation component of farmland returns is the return on US cropland for 1998–2021 and for farmland and buildings for 1968–1997. **Past performance is not indicative of future results.** Ag Commodities tracks the price changes in the time period for a basket of staple crops including corn, cotton, soybeans, and wheat. It is not possible to invest directly in an index. Analysis as of 12/31/2022 using latest data available.

<sup>8</sup> UN World Population Prospects 2019, World Bank 2016 report. <sup>9</sup> *Agri Investor*, April 2022. <sup>10</sup> *New York Times*, "Farmland is Valuable, but Buying it is Tricky for Investors," 10/8/2021.

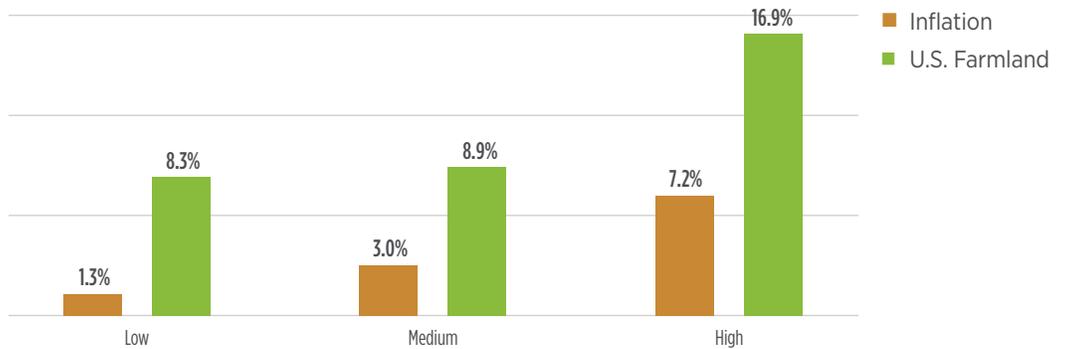


## Planting the Seed

Farmland has historically exhibited a positive correlation with inflation and should therefore be considered an effective inflation hedge. In the chart below, farmland returns have been highest during periods of high inflation (greater than 4%). Compared to other real assets such as gold, which is often used as an inflation hedge, farmland can produce positive cash flow and potential value appreciation.

### U.S. Farmland Returns vs. Inflation Range<sup>11</sup>

Inflation Ranges: Low <2%, Medium 2–4%, High >4%; Date Range: 1967–2022



The U.S. farmland market is 2.2 times larger than other U.S. real estate asset classes. Yet, institutional farmland ownership represents less than 1% of the more than 300 million acres of land compared to 10–20% institutional ownership across other real estate types.<sup>12</sup> Farmland is often priced at levels inconsistent with underlying asset profitability due to limited institutional farmland ownership. Instead, farmers buy land based on emotional factors or proximity to existing operations instead of productivity or crop viability analyses commonly used by return-motivated investors.

A lag effect between productivity-enhancing technologies and farmland market prices exacerbates inefficient asset pricing. Innovations such as precision agriculture and new irrigation technologies improve the productivity of the land. As a result, past land sales may not factor in these recent advances because of the often-informal analysis that goes into land sales, creating a disconnect between the selling price and the land's actual value. Pricing also marks a critical differentiation between farmland and other real assets like commercial and residential real estate. Data resources like comparables, asset condition and location, which are not yet available at scale for farmland, are used to calculate real estate values. While investors can still uncover good value in the real estate market, farmland presents more of an opportunity to find mispriced assets because valuations are not as data-driven or readily available to the public.

Farmland pricing may also benefit from the growing number of aging farmers who continue to operate smaller, generally low-revenue farms. From 2012 to 2017, the average U.S. farmer age increased 1.2 years to 57.5, including approximately 34% over 75, a 26% increase; the number of farmers decreased 3.2% during the same period. Since the average U.S. farmer retirement age is 75 and farmers over 65 own \$1.2 trillion of U.S. farmland assets,<sup>13</sup> the aging farmer population presents a buying opportunity for potential farmland investors. Smaller farmland tracts (average U.S. farm size is 443 acres) can be consolidated into larger, more efficient operations and leverage economies of scale as farmers sell their land upon retirement.<sup>14</sup> The generational wealth transfer that may occur in the next 5–10 years may also allow investors to partner with and support the next generation of farmers through more innovative investment structures, ensuring continuity in the industry while driving new growth.

<sup>11</sup> International Farming, fred.stlouisfed.org & USDA NASS database (Data accessed on 1/12/2023). Inflation is represented by the year over year change of CPI-U. Average property level U.S. farmland returns represent USDA NASS gross income and appreciation for each year shown. Gross USDA NASS farmland returns are representative of triple net leases between tenants and farmland owners. **Past performance is not indicative of future results.** <sup>12</sup> International Farming, as of 2013 (most recent data available). <sup>13</sup> All figures as of the 2017 USDA agricultural census. <sup>14</sup> Farms and Land in Farms, USDA, 2018.

## Growing Trend

Allocations to farmland investments have grown significantly in the last decade as wealthy individuals, fund managers and institutions are beginning to invest in land across the United States. Billionaire Bill Gates recently became the largest private landowner in the country with a portfolio of over 269,000 acres of farmland accumulated through his family office Cascade Investments.<sup>15</sup> Gates is not alone, however, as a wide range of asset managers, from state pension funds to sovereign wealth funds, direct more capital to farmland through direct land purchases and investments in existing funds.

“Interest in the asset class has never been this high before.”

Bruce Sherrick  
Professor of Farmland Economics  
University of Illinois<sup>16</sup>

## ESG Considerations

Growing global concern for environmental impact has put farmland in the spotlight because of its history of emissions and the transition to more sustainable farming approaches that have taken place in recent years. With the introduction of new and improved management practices, farmers have been able to increase belowground biomass and contribute to carbon sequestration, minimize water waste through innovative irrigation and monitoring systems, and prolong the viable life of the land itself. A common misperception is that sustainable farming techniques are more costly and reduce yields. In truth, sustainable farming often represents best practice farming techniques that improve product quality and yield efficiency.

Support for sustainable management standards is becoming widespread as farmers and fund managers recognize the short- and long-term benefits of practicing more environmentally conscious farming. Leading Harvest, a non-profit organization that has developed a farmland management standard focused on 13 fundamental sustainability principles, boasts program users who manage farmland portfolios collectively worth tens of billions of dollars and are committed to the mission of sustainable farming.<sup>17</sup> As an increasing amount of farmland transitions to better management practices, investors will be able to reap the rewards in terms of both an environmental impact and farm efficiency.



## Dig into Farmland<sup>18</sup>

Different Approaches to Farmland Investment Exposure

Investment Type	Advantages	Disadvantages
<b>Crowdsourced Farmland</b>	<ul style="list-style-type: none"> <li>Direct ownership of farmland</li> <li>Low minimum investment (\$10,000–15,000)</li> <li>Frequent new offerings (often weekly)</li> </ul>	<ul style="list-style-type: none"> <li>Only open to accredited investors</li> <li>Difficult to efficiently diversify</li> </ul>
<b>Mutual Funds/ETFs</b>	<ul style="list-style-type: none"> <li>Open to all investors including retail</li> <li>Low minimum investment, if any</li> <li>Exposure to individual commodity appreciation and broader trends</li> </ul>	<ul style="list-style-type: none"> <li>No direct access to farmland</li> <li>Increased volatility due to primary composition of agriculture related equities and commodities</li> </ul>
<b>Interval/Tender Offer Funds</b>	<ul style="list-style-type: none"> <li>Part of a diversified mix of real assets</li> <li>Managed by experienced investors</li> <li>Access to illiquid assets through semi-liquid vehicle</li> </ul>	<ul style="list-style-type: none"> <li>Limited allocations to farmland</li> <li>Limited liquidity and investors subject to proration</li> </ul>
<b>Listed REITs</b>	<ul style="list-style-type: none"> <li>Diversified portfolio of farmland</li> <li>Open to all investors including retail</li> <li>Access to illiquid asset through liquid vehicle</li> </ul>	<ul style="list-style-type: none"> <li>Indirect ownership means returns are not linked to long-term land appreciation</li> <li>Price volatility of listed REIT shares</li> </ul>
<b>Private Funds</b>	<ul style="list-style-type: none"> <li>Diversified portfolio of farmland and related assets</li> <li>Managed by experienced farmland investors</li> </ul>	<ul style="list-style-type: none"> <li>Inaccessible to most individual investors</li> <li>Liquidity windows depend on fund type, but most are subject to lock-ups</li> </ul>
<b>Outright Farm Purchase</b>	<ul style="list-style-type: none"> <li>Direct ownership of farmland</li> <li>Sole recipient of rent and volume payments</li> <li>More control over operations</li> </ul>	<ul style="list-style-type: none"> <li>Lack of diversification</li> <li>Purchase price typically \$3,000,000+</li> <li>Heightened exposure to commodity and recession risk</li> </ul>

<sup>15</sup> *New York Post*, “Bill Gates is reportedly the largest farmland owner in America,” 1/15/2021. <sup>16</sup> *Financial Times*, 4/5/22. <sup>17</sup> Leading Harvest company website. <sup>18</sup> XA Investments.

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## Risks

**Real Estate Risk.** Investments in real estate and real estate-related entities are subject to various risks, including adverse changes in domestic or international economic conditions, local market conditions and the financial conditions of tenants, changes in the number of buyers and sellers of properties, increases in the availability of supply of property relative to demand, increases in interest rates, exchange rate fluctuations, the incidence of taxation on real estate, changes in regulations, governmental rules and policies

**Agriculture Risk.** Agriculture investments are generally subject to real estate risks, but also particularly subject to environmental risks, such as storms, floods, drought, windstorms, hail, temperature extremes, frosts, soil erosion, infestations, hurricanes, tornados, and blights. Agriculture investments are also subject to broader economic risks, including commodity price fluctuation, adverse changes in consumer demands, adverse changes in national or international economic conditions, adverse local market conditions, geopolitical crises such as wars, trade embargos, labor strikes, and import and export tariffs. As compared with other asset classes, agriculture investments are a relatively illiquid investment and an investor may be required to hold such investments despite poor valuations. Agriculture investments at times may only be liquidated, if at all, at disadvantageous prices.

## Sources

1 *Financial Times*, 4/5/22. 2 Agriculture land asset value including buildings. USDA, National Agricultural Statistics Service as of 2020. 3 Value represents the USDA estimate of crop cash receipts for 2021. 4 International Farming, NCREIF Total Farmland Index. Data as of 12/31/2022. 5 International Farming, NCREIF Total Farmland Sub-Index return ending Q4 2022. Figures are gross of fund-level fees and expenses. 6 International Farming, NCREIF Farmland Index (Total Farmland Sub Index), St. Louis FRED database, data accessed 2/21/2023. 7 International Farming, USDA, “Stocks, Bonds, Bills, and Inflation Yearbook” (used for inflation, S&P 500, and LT Govt. Bond data) by Ibbotson Associates, Wilshire US REIT Index (Begins 1978). The appreciation component of farmland returns is the return on US cropland for 1998–2021 and for farmland and buildings for 1968–1997. **Past performance is not indicative of future results.** Ag Commodities tracks the price changes in the time period for a basket of staple crops including corn, cotton, soybeans, and wheat. It is not possible to invest directly in an index. Analysis as of 12/31/2022 using latest data available. 8 UN World Population Prospects 2019, World Bank 2016 report. 9 *Agri Investor*, April 2022. 10 *New York Times*, “Farmland is Valuable, but Buying it is Tricky for Investors,” 10/8/2021. 11 International Farming, fred.stlouisfed.org & USDA NASS database (Data accessed on 1/12/2023). Inflation is represented by the year over year change of CPI-U. Average property level U.S. farmland returns represent USDA NASS gross income and appreciation for each year shown. Gross USDA NASS farmland returns are representative of triple net leases between tenants and farmland owners. **Past performance is not indicative of future results.** 12 International Farming, as of 2013 (most recent data available). 13 All figures as of the 2017 USDA agricultural census. 14 Farms and Land in Farms, USDA, 2018. 15 *New York Post*, “Bill Gates is reportedly the largest farmland owner in America,” 1/15/2021. 16 *Financial Times*, 4/5/22. 17 Leading Harvest company website. 18 XA Investments.

Asset Class	Representative Index
Farmland	NCREIF Farmland Property Index
REITs	Dow Jones Wilshire REIT Index
U.S. Equities	S&P 500 Index
Global Equities	MSCI EAFE Index (Net Dividends)
Commodities	Continuous Commodity Index
Long-Term Govt. Bonds	Series of 20-year Govt. Bonds
Short-Term Govt. Bonds	Series of 1-month T-Bills



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