



TIAA-CREF Asset Management

Responsible Investment in Farmland

2015 report on ethical conduct and responsible
stewardship of the environment



Financial Services

This report was developed in consultation with TIAA-CREF staff responsible for farmland investments, as well as through research involving asset managers and external stakeholders, all of whom provided insight and context on key issues, opportunities and potential performance indicators. We thank SustainAbility, Inc. for its assistance with developing this document. As with prior years reporting, our intent is to improve our stakeholders' understanding of how we invest in farmland and perform our fiduciary duty over the long term. We believe this report is another step toward increased transparency regarding our practices.

TIAA
CREF



Responsible Investing

A message from Biff Ourso, Portfolio Manager for Agriculture Investments

In 2011, TIAA-CREF was one of a group of UN Principles for Responsible Investment (“PRI”) signatories who developed the Principles for Responsible Investment in Farmland (the “Farmland Principles”), which were designed to guide institutional investors who wish to invest in farmland in a responsible manner.

Since mid-2014 the Farmland Principles have been integrated within the PRI, thus ensuring adequate resources and finances to manage the work on responsible investment in farmland going forward. As part of the integration with the PRI, the Farmland Principles have evolved into “Guidance for Responsible Investment in Farmland” (“Farmland Guidelines”) and align directly with the original five Farmland Principles. The Guidelines are as follows:

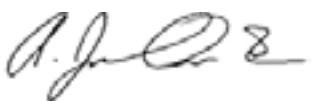
1. Promoting environmental sustainability
2. Respecting labor and human rights
3. Respecting existing land and resource rights
4. Upholding high business and ethical standards
5. Reporting on activities and progress towards implementing and promoting the Guidelines

By signing the Farmland Principles in 2011, TIAA-CREF committed to integrating them into its responsible investment strategy. Our first Responsible Investment in Farmland Report in 2012 initiated an ongoing commitment to report on our progress and fulfill Principle 5. We introduced our global portfolio and provided a profile of our investments across various crops and regions. We explained how TIAA-CREF invests in farmland and how we work with local asset managers to identify, acquire and monitor our properties, as well as how farm operators manage the actual farms in our portfolio. The report provided details on our investment process and how TIAA-CREF’s corporate governance practices and the Farmland Principles are implemented with regard to our farmland properties.

In 2013, we introduced a set of key performance indicators (“KPIs”) to help measure progress across each of the five Farmland Principles. The KPIs are designed to measure how well we ensure that the Principles are followed up with action. We then find ways to close the performance gaps and believe that over time, the KPI results will demonstrate our commitment to responsible investment.

A copy of the previous year’s report is available on TIAA-CREF’s website: <https://www.tiaa-cref.org/public/pdf/2014-Farmland-Sustainability-Report.pdf>

With this report, we have incorporated specificity into the KPIs to provide more transparency on pre- and post-acquisition activities. We have also modified KPIs to acknowledge the difference between managing row crop and permanent crop farmland. We recognize that third-party certification is becoming an important method for verifying best farming practices for some types of crops (for example sugarcane) and have also incorporated this into some KPIs. We are following the development of farm management best practices across various crop types and regions and expect to report on their impact to our portfolio in future reports. Overall, we are pleased with our performance this past year and eager to share the results with all of our stakeholders.



Biff Ourso
Portfolio Manager, Agriculture Investments

Overview of Responsible Investment in Farmland

Today's global farmland markets are characterized by an evolving set of challenges, such as growing food demand to support a projected population of 9 billion people by 2050, increasing protein consumption, climate change and global water scarcity. At the same time, farmland managers are better equipped to confront these and other challenges through opportunities such as advanced farming practices, GPS mapping and tracking of water and nutrient use. As responsible farmland investors we are cognizant of these challenges and see our investments and management practices as a way to support sustainable agricultural development that will help feed the world's growing population while making the most efficient use of limited resources such as land, inputs, and water.

Responsible Farming Practices

In 2014, farmers faced even more challenges, and at TIAA-CREF we see this as an opportunity for innovation and learning. Our farmland investment approach is directly aligned with our overall investment philosophy: we are long-term investors helping to provide for the financial well being of our customers and clients decades into the future. We see farmland as an excellent addition to our portfolio and look to acquire farmland assets with a 20- to 30-year time horizon.

As part of our long-term investment horizon, we are dedicated to responsible and sustainable land management practices in order to maintain the longevity of our farmland properties. Many initiatives and strategies can deliver dual "wins" for both investment and sustainability outcomes as listed below:

- **Soil Health Maintenance:** Drives improved yield and can reduce input costs
- **Water Efficiency and Conservation:** Protects groundwater supplies, lowers input costs, and addresses issues of water scarcity in water-constrained or drought-prone regions
- **Resource Efficiency:** Minimizes agricultural waste and nutrient loss, supporting cost savings
- **Biodiversity Protection:** Maintains integrity of valuable ecosystem services (e.g., erosion control, water cycling, nutrient cycling, and pollination)
- **Toxics Reduction:** Reduces localized pollution, supports worker health, and promotes food safety
- **Respecting Labor Standards, Human Rights and Safety:** Reduces risk of labor interruptions and strengthens workforce
- **Transparency in Land Acquisition:** Mitigates risk from legal liability and security issues
- **Respect for Local Communities, Smallholder Farmers and Other Stakeholders:** Supports local communities' economic and cultural needs

We are dedicated to the above responsible practices across our properties and have processes in place to ensure they are maintained, including in-depth pre-acquisition due diligence, ongoing site visits, property reviews, and KPI measurement and assessment (please see the "Tracking Progress on the Guidelines" section for a more detailed view of our performance in using these KPIs). We also examine the role that third party certifications can play to address buyer demand for certified crops, guarantee the quality of our assets and practices, and ensure that acceptable performance against KPIs is achieved. Third party certification may not apply to all of our properties, but we are making early progress where an accepted certification exists and are conducting a third party assessment of several properties in Brazil.

Our core investment strategy is based on a partnership model focused on acquiring existing, high-quality farmland and identifying best-in-class local farmers who operate the farms via a leasing arrangement. In doing so, we facilitate the growth of local agribusinesses while also contributing capital (in the form of the purchase price) to the market. By employing a comprehensive asset management and farm oversight program, we are able to assess and validate adherence to strict operating practices and analyze potential capital investments that will support enhanced production and sustainability into the future.

Challenges to Farmland Investing

As a leading investor in and manager of global farmland, we recognize that the industry, as well as TIAA-CREF, faces a number of challenges in ensuring responsible and sustainable investment in farmland. We have been aware of and have been managing many of these challenges from the beginning of our engagement with this asset class:

- **Water Scarcity:** This year more than ever, we see water as a significant challenge that requires new levels of measurement as well as practices that reduce consumption and account for local watershed impacts. Water availability is and will continue to be a growing concern for farmers and investors like us. We place great importance on managing our water consumption and its impacts by using the most efficient means to grow our crops and acknowledging and mitigating impacts related to the environment and local waterways. For more on this issue, please see **Page 18** for an example of how TIAA-CREF is working towards better water solutions.
- **Nutrient Runoff:** Nutrient runoff is an increasing concern in many of the areas where TIAA-CREF owns properties, particularly in the Central US region and in California. Nutrient runoff from fertilizers can damage surrounding ecosystems, and, when these nutrients are not absorbed fully in farmland, the productivity of the land may be compromised. In an effort to better understand the impact of nutrient runoff, we have revised our Chemical and Production inputs KPIs. For more on this issue, please see **Page 20** for an example of how TIAA-CREF is working towards better nutrient runoff strategies.
- **Climate Change and Secondary Impacts:** Climate change impacts may bring several challenging aspects to agriculture, including climate variability and extreme weather, shifting agricultural zones, effects from rising temperatures and water stress that can compromise crop yields. In addition, climate change can accelerate agricultural stresses such as low and declining soil fertility, soil and water degradation, and pest and disease pressure, and result in secondary impacts such as accelerated rates of soil erosion, increased pest damage, loss of agrobiodiversity and higher rates of plant disease. We believe our practices with respect to soil tracking and nutrient mitigation help mitigate these challenges.
- **Deforestation:** A key concern among stakeholders is that farmland investment may come at the expense of forested area. TIAA-CREF addresses this concern by ensuring its entire farmland portfolio consists of land approved for agricultural use, the majority of which has been used as farmland for many years. In critical forested areas such as in Brazil, we meet all government requirements for their protection and also contribute by improving and rehabilitating certain lands set aside for conservation.
- **Land Grabbing:** A number of groups have expressed concern regarding farmland investors taking advantage of insecure land rights in undeveloped areas in order to purchase large tracts of land. To confront this challenge, we have established a formal title search and review process to ensure the land we own is part of a verified chain of ownership and make a point to invest in geographies with established land rights.
- **Transparency:** Non-governmental organizations (NGOs) and agriculture activists often voice their concern on the lack of transparency of farmland investors with respect to their investments. As signatories of the Farmland Principles (now the Farmland Guidelines), and with our ongoing publication of this report for the past three years and into the future, we are dedicated to providing transparency with regards to our farmland investments to the highest extent possible while retaining sensitive commercial information as required by our business.
- **Worker Health & Safety:** Ensuring the health and safety of workers on our properties is another ongoing challenge for us as responsible farmland owners. While we are one step removed as landowners and not direct operators, we still aim to ensure our tenants and operators uphold high standards of worker health and safety. To ensure we are on the right track, in 2015, we commissioned a third party evaluation of labor & human rights, and environmental sustainability practices across many of our Brazilian properties and will use the results from the project to inform our processes moving forward. We expect the results of this evaluation will be completed in late 2015 and hope to discuss them in next year's report.



At TIAA-CREF we take these issues seriously, and we believe our investment approach sets us apart in addressing these concerns.



Farmland Investment Value Chain

In order to understand our approach to farmland investing, it is important to first become familiar with the farmland investment value chain. Within this chain there are a number of key stakeholders. We earn returns primarily through farmland lease payments and long-term increases in underlying farmland asset value. However, we do have operating exposure to crop prices and production for a subset of our portfolio. As investors we distinguish our role from those of our business partners, which include asset managers, farm operators, and numerous other stakeholders including crop buyers, farm workers, and local communities.

Investors

TIAA has established several investment entities, including TIAA-CREF Global Agriculture LLC and TIAA-CREF Global Agriculture II LLC (the “TCGA entities”) to make farmland investments. These investment entities also provide equity capital for purchases and capital expenses on the farm, such as implementing upgraded irrigation technology, which conserves water resources while improving yields, or paving roads on the property to reduce dust.

Institutional investors serve as the members of the TCGA entities. TIAA and our co-investors make capital contributions to the investment entity, and we receive capital distributions from the investment entity. These distributions may have several revenue sources, including rent paid by farmers, proceeds from the sale of property, and crop sales.

Asset Managers

TIAA-CREF has two affiliated asset managers, Westchester Group Investment Management, Inc. (“Westchester”) covering the U.S. and Australia, and Radar Propriedades Agrícolas (“Radar”) covering Brazil, who are critical in the implementation of our investment approach. Westchester and Radar identify, acquire, and monitor our farmland investments and are also responsible for the negotiation of the lease and crop management contracts. Because these asset managers are located in the region of the farmland investments, they are well positioned to work directly with farmers and crop managers within the local communities towards effective management. In many cases the asset managers we work with are also farmers themselves or come from generations of family farming, allowing us to apply decades of farming experience to how we manage our properties.

Farm Operators

Farm operators manage the farms, earning their return from growing and marketing the crops. Our relationship with the farm operators generally depends on the type of crop being farmed. We invest in farmland that produces two kinds of crops: row crops and permanent crops.

- Row crops are planted or harvested annually, such as corn, cotton, sugarcane or soy. These crops may be further processed into food for human consumption, animal feed, fuel (e.g., ethanol production), or fiber for clothing. With row crops, the farmer generally leases the land from the investment entity and pays rent to the entity. The terms of the lease are generally established or renewed on an annual or multi-year basis. The farmer is responsible for acquiring seeds, fertilizer, labor, equipment and other inputs, and for growing and harvesting the crops. Once the row crop is harvested, a crop buyer purchases it from the farmer and the proceeds of this purchase go to the farmer.
- Permanent crops, usually vines or trees, are planted once and then produce crops over many years. Examples include apples, tree nuts, citrus, or wine grapes. They may be sold as a finished product for human consumption, or used as ingredients to be processed into some other type of grocery item. Most of TIAA’s permanent crops are custom farmed where the asset manager (e.g., Westchester) helps to manage the sales and marketing of the crop, and the proceeds from the sale of the crop go to the investment entity. Under a custom farming strategy, a crop manager (also known as a custom farmer or custom operator) is responsible for the cultivation over several years while the trees or vines are still in the non-bearing stage and for the management of the crop once the trees and vines are producing. A key difference with permanent crops is that a significant portion of the asset value is in the tree or vine and related improvements, which have a finite life. Another key difference includes the labor associated with harvesting them. While row crop harvesting can be done mostly by machinery, certain permanent crops as well as certain higher value row crops, like vegetables and strawberries, may require hand labor to pick and harvest the final product.

Crop Buyers

The crop buyer is responsible for bringing the crop to market. In the case of row crops such as corn or soy, it may be sold as animal feed, becoming an important link in the animal protein value chain. Cotton will be ginned and spun into yarn for use in apparel, while sugarcane and corn, in particular, may be cultivated for use as fuel (ethanol). Many row crops like corn, soy, sugarcane and wheat are also used as inputs in food manufacturing and used to make products from breakfast cereal to beverages.

The crop buyer for permanent crops has a similar role managing the sale of the produce into the marketplace. However, unlike with row crops, the asset manager plays a more active role in the marketing of the product from permanent crops. All permanent crops are destined for human consumption (although certain by-products may be used for other means, such as for fertilizer or animal feed), whether they are processed—such as wine grapes being made into wine—or consumed with little processing beyond packaging and distribution—such as citrus fruit.

Stakeholder Management

There are a number of factors that affect how we manage and oversee stakeholders within the farmland portfolio. As we seek to establish sustainable and responsible practices across all of our properties, there are a few conditions that sometimes limit our abilities:

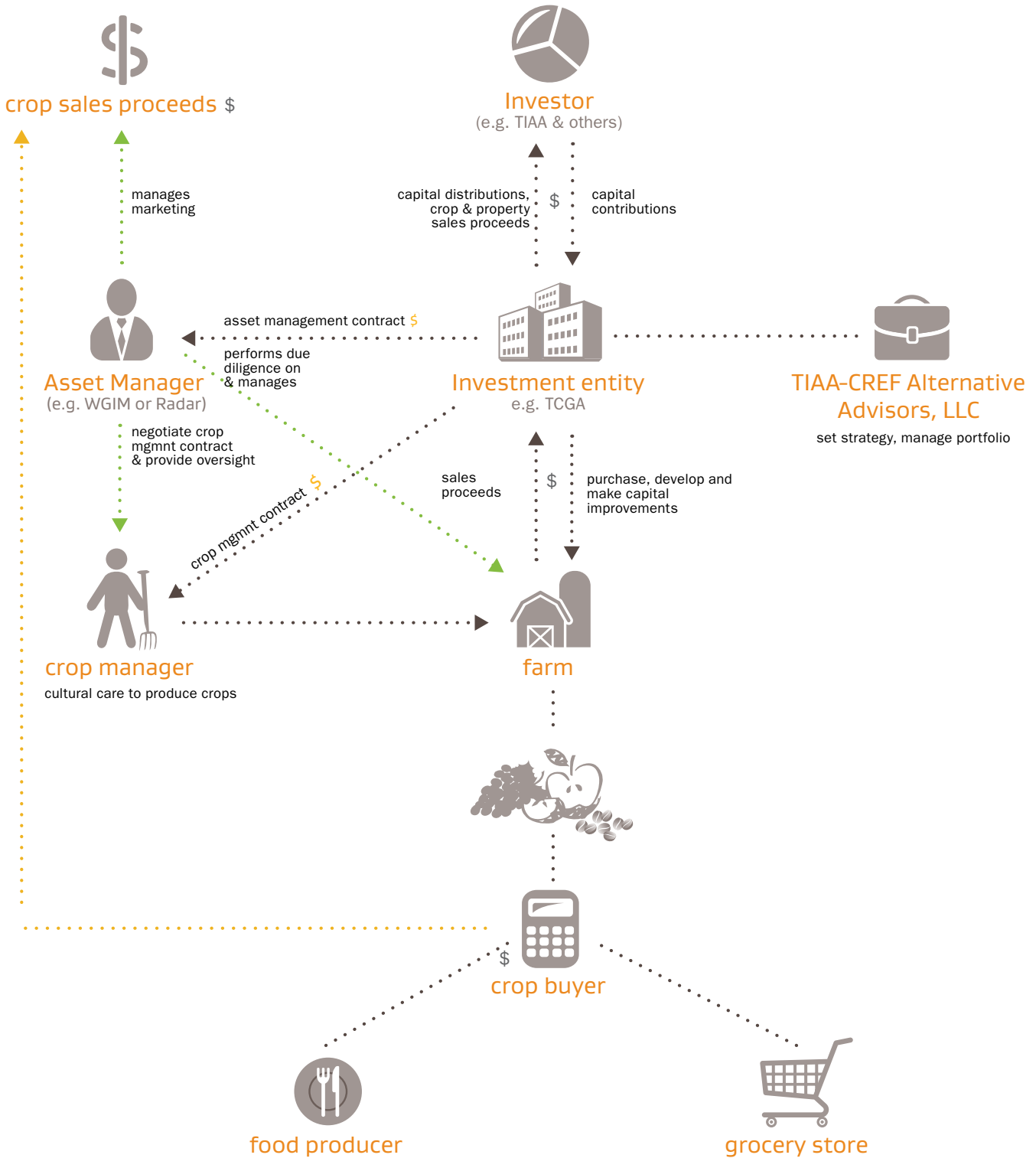
- We have varying degrees of influence over tenants and operators based on the nature of the relationship (i.e. leased row crop farms vs. custom farmed permanent crop farms). For example, TIAA-CREF can exercise greater control over permanent crop properties where we custom operate.
- We face different dynamics across the regions and countries where we invest. For example, a more competitive tenant market (as in the U.S. Midwest) allows our asset managers to dictate more terms in the lease as compared to less developed markets. Geography also makes a difference in how labor is employed. In some regions, such as Brazil, the farm operator is also required to provide housing for the laborers.
- Size limitations of tenants and operators can impact their ability to justify and afford compliance officers or staff to gather and report additional data.

While owning and managing a diverse farmland portfolio is complex, we work closely with local asset managers to implement a number of responsible and sustainable practices across our properties.



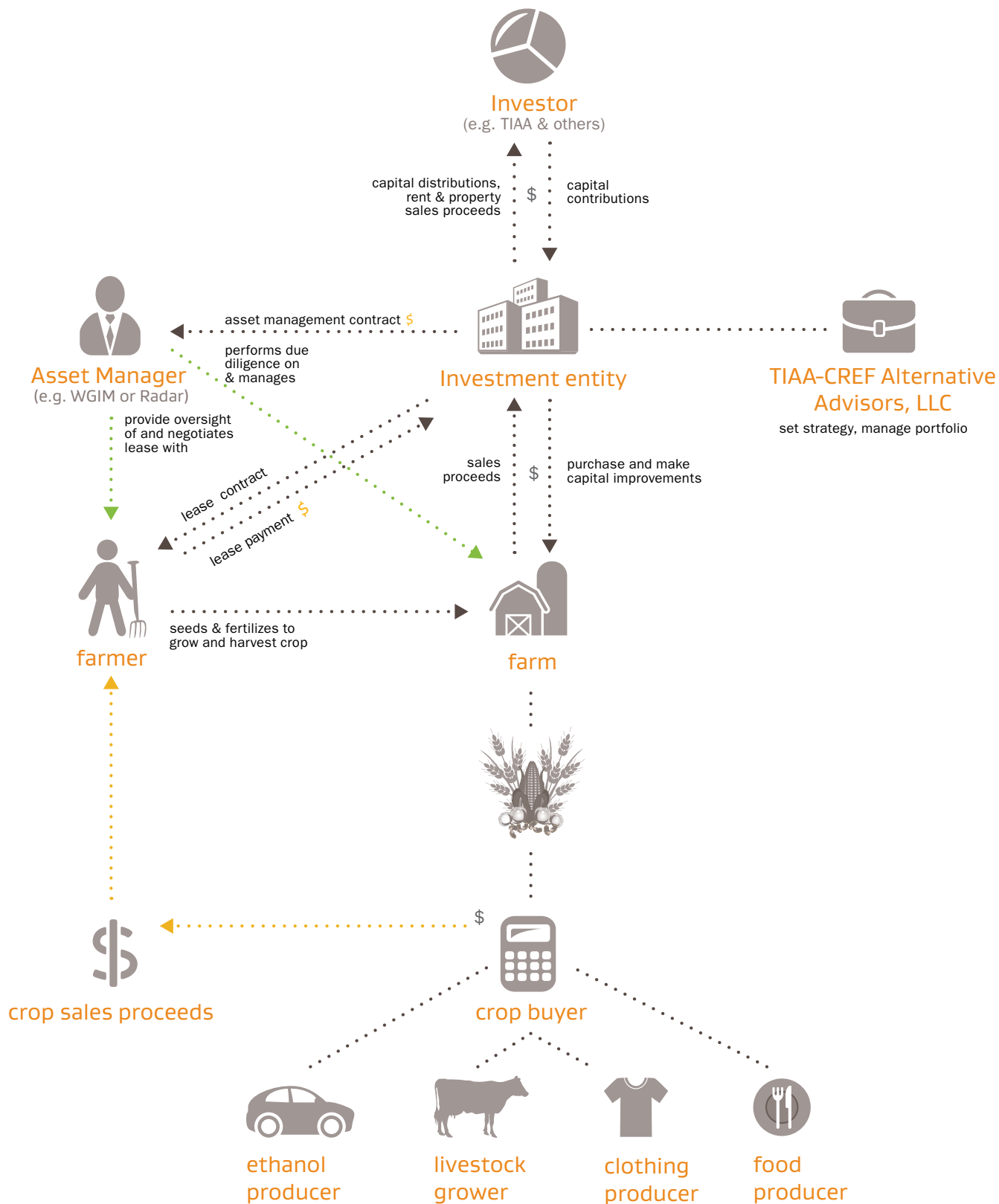
Value Chain Diagrams

Permanent crops



Value Chain Diagrams

Row crops



Our Process

As investors, TIAA-CREF seeks to be good stewards of the land we own and manage, and we believe that ethical conduct, responsible stewardship of the environment, and respect for those with whom we do business are essential to the long-term performance of our farmland investments. While we do not directly operate most of the farms we own, we work with our asset managers, tenants, and custom operators to promote sound agricultural management practices and look to meet or exceed all environmental standards and labor regulations. Our rigorous due diligence process facilitates fundamental analysis of each property prior to acquisition, and we monitor the performance of each farm individually over time through a detailed management and governance process. Furthermore, TIAA-CREF's farmland investments are only in regions and countries where we believe adequate controls and management infrastructure are in place to meet our standards for each market.

Pre-Acquisition Due Diligence

Our formal, proven investment process examines each investment opportunity prior to acquisition. This process includes an assessment of the suitability of any third-party managers, joint-venture partners, tenants, or operators as well as an analysis of the property to ensure it meets our investment risk-return criteria.

As part of the property analysis, our affiliated asset managers and TIAA-CREF's Global Real Estate Asset Management and Engineering Services team assess the environmental impacts and risks of each farmland investment using an environmental site assessment. These assessments are completed for all new investments prior to acquisition and are conducted in accordance with the American Society for Testing and Materials (ASTM) or the local country equivalent. A third party auditor, AECOM, a global leader in environmental property assessments, performs the assessments in order to ensure and verify the findings.

The environmental site assessment makes use of extensive pre-acquisition checklists considering a range of issues pertaining to farmland-specific properties such as pesticide storage practices, vehicle-emissions standards, and mineral ownership rights. We apply a checklist to other tangible and intangible issues as well, including harvesting practices, water rights, property improvements, intellectual property, and patented crops. This process also accounts for any potential environmental liability relating to hazardous conditions or other relevant issues such as the presence of wetlands and endangered species. If a property does not meet our strict standards for acquisition, we will not complete the purchase and in certain cases have turned down a transaction because a property was not environmentally sound.

Post-Acquisition Management

Following acquisition, we reassess and monitor each farm's performance on an annual basis using attestation documents signed off on by our asset managers, a key performance indicator to assess our adherence to the Farmland Guidelines and site visits to our properties. These and other strategies are assessed at the local level in conjunction with the tenant or operator. A key part of this process is ensuring the environmental sustainability of each farm across our entire portfolio, with activities and strategies aimed at reducing soil erosion and runoff, conserving water, and maintaining or improving soil fertility.

Attestation Documents: Our asset managers Westchester and Radar are required to follow certain TIAA-CREF policies and procedures relating to agricultural investment governance and compliance. Each year we require them to review and sign off on adherence to a variety of property conditions from infrastructure maintenance and harvesting practices to compliance with legal, employment and even endangered species regulations.

TIAA's strategy is typically based on purchasing existing agricultural land rather than conversion of virgin land into farmland. We do not seek out forested land that we can convert to agriculture. We also take special considerations to avoid the purchase of any land where ownership rights may be in question. In Brazil, for example, Radar utilizes sophisticated satellite imaging and title searches to ensure we do not purchase land with contested ownership.

Site Visits: Our asset managers also conduct regular site visits of properties to confirm the conditions meet or exceed our standards. Westchester and Radar are key to this process as they provide direct, local access and management for our farms. In 2013, Radar developed a specific methodology to improve site visits, hired additional staff and established four sub-regional offices to maintain better oversight of properties across the country. The new offices annually evaluate each property against several different criteria. The site visit encompasses a checklist of items across four criteria: environmental, labor, infrastructure, and tenant’s governance. The property is also verified internally against two additional criteria: legal and financial. The result is a more comprehensive internal certification process that will evolve in future years to contribute to a higher level of labor compliance and efficiently indicate if a farm is operating sustainably.

Farmland Guidelines KPIs: In 2013, TIAA-CREF developed a set of key performance indicators (KPIs) to identify, assess, mitigate, and monitor the relevant risk factors for farmland investing. These KPIs were developed in conjunction with our asset managers, Westchester and Radar, and were specifically designed to allow us to assess our performance against the Farmland Guidelines moving forward. This year, we updated these KPIs to enhance our ability to monitor our progress against the Guidelines and an evolving set of farming practices. We will continue to update and improve these KPIs going forward.

(See the “Tracking Progress on the Guidelines” section on **Page 15** for further detail on our KPIs and our latest performance.)



Snapshot of TIAA-CREF Farmland Portfolio

At the end of 2014, TIAA-CREF managed nearly 1.4 million gross acres of globally diversified farmland valued over \$5.1 billion. Growth in the portfolio during the year was across the three regions on which we focus: the U.S., Australia, and Brazil. We continue to target the acquisition of high quality row crop-producing assets in the principal grain-exporting regions of the world, with additional diversification from permanent crop investments such as wine grapes, tree nuts, and tree fruits in premier growing regions.

During 2014, TIAA-CREF acquired 20 new properties in all three regions and also divested some smaller properties. Acquisition activity included permanent and row crop transactions in existing regions as well as growth into some new areas where we have targeted investment for some time.

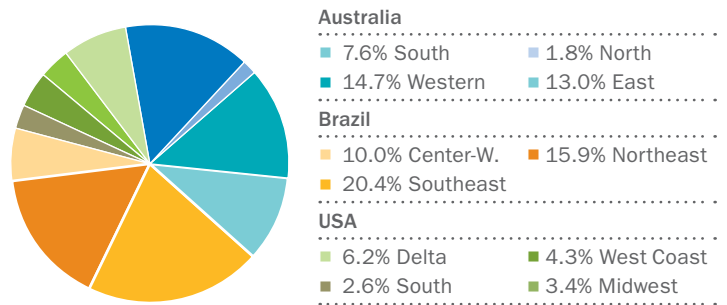
In the row crop sector we grew our portfolio primarily in the U.S South, Western and Northern regions of Australia, and the sugarcane producing regions of Southeast Brazil. We also acquired mature (fully producing) permanent crop farmland as well as developing assets (farms with to-be-established plantings) in the U.S. and Brazil. By developing new assets in the permanent crop space, we aim to contribute additional food resources into the agricultural value chain.

Portfolio Diversification

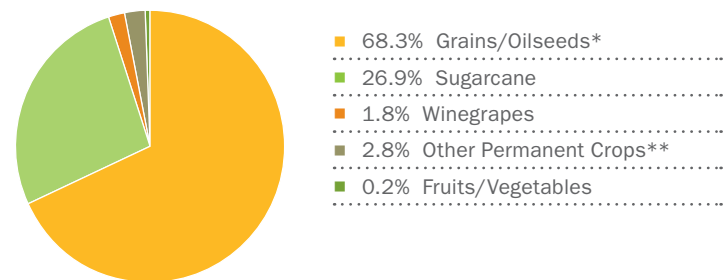
Since our first investment in farmland in 2007, we have built a portfolio diversified by geography and crop type. The following charts detail our current farmland holdings as of December 31, 2014.

Agriculture acreage by geography

Based on gross acreage of 1,369,136 as of 12/31/14



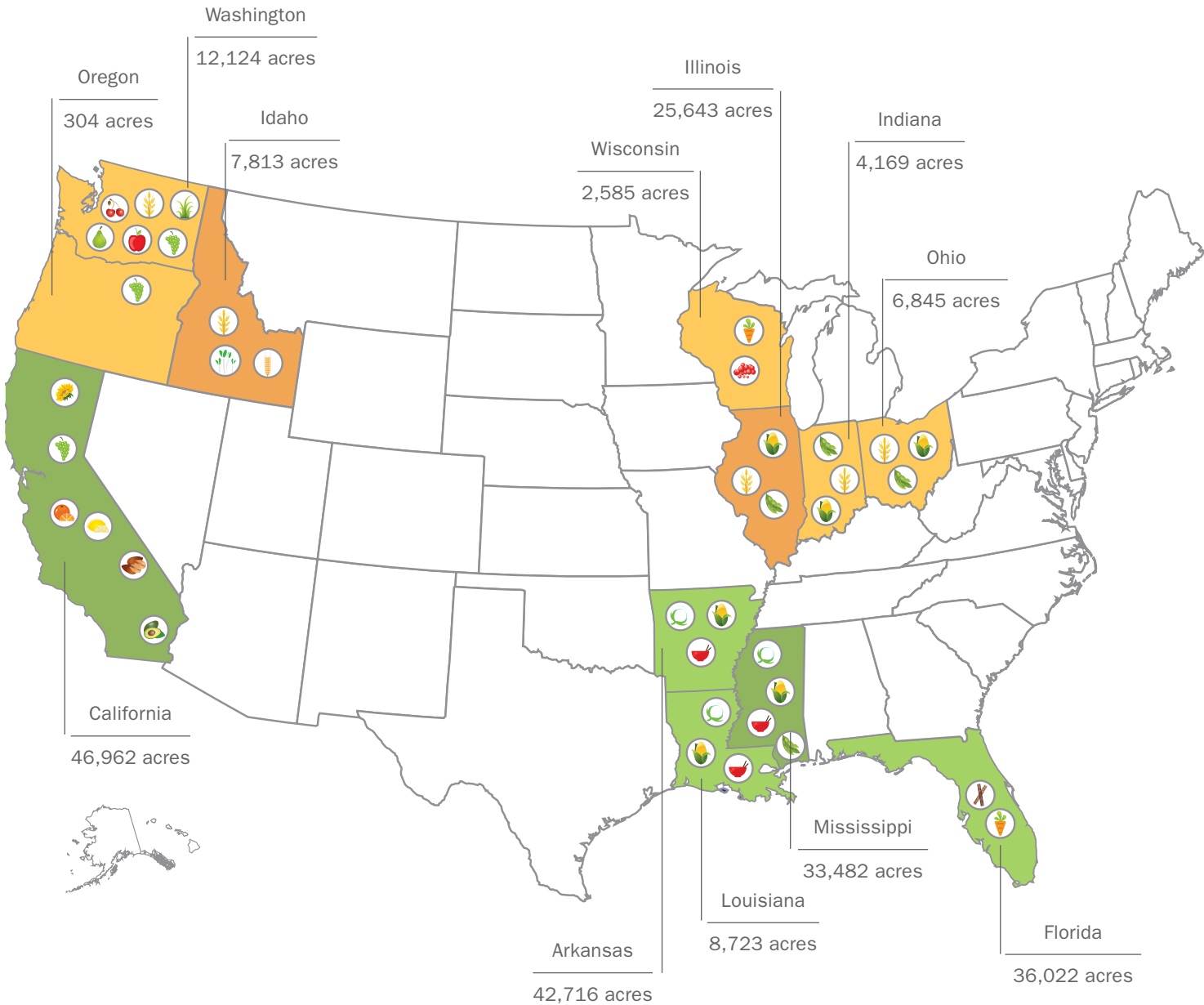
Agriculture acreage by crop type



*Grains and oilseeds includes crops such as barley, wheat, corn, soybeans and pulses.

**Other permanent crops includes tree nuts such as almonds.

TIAA-CREF Farmland Holdings – United States

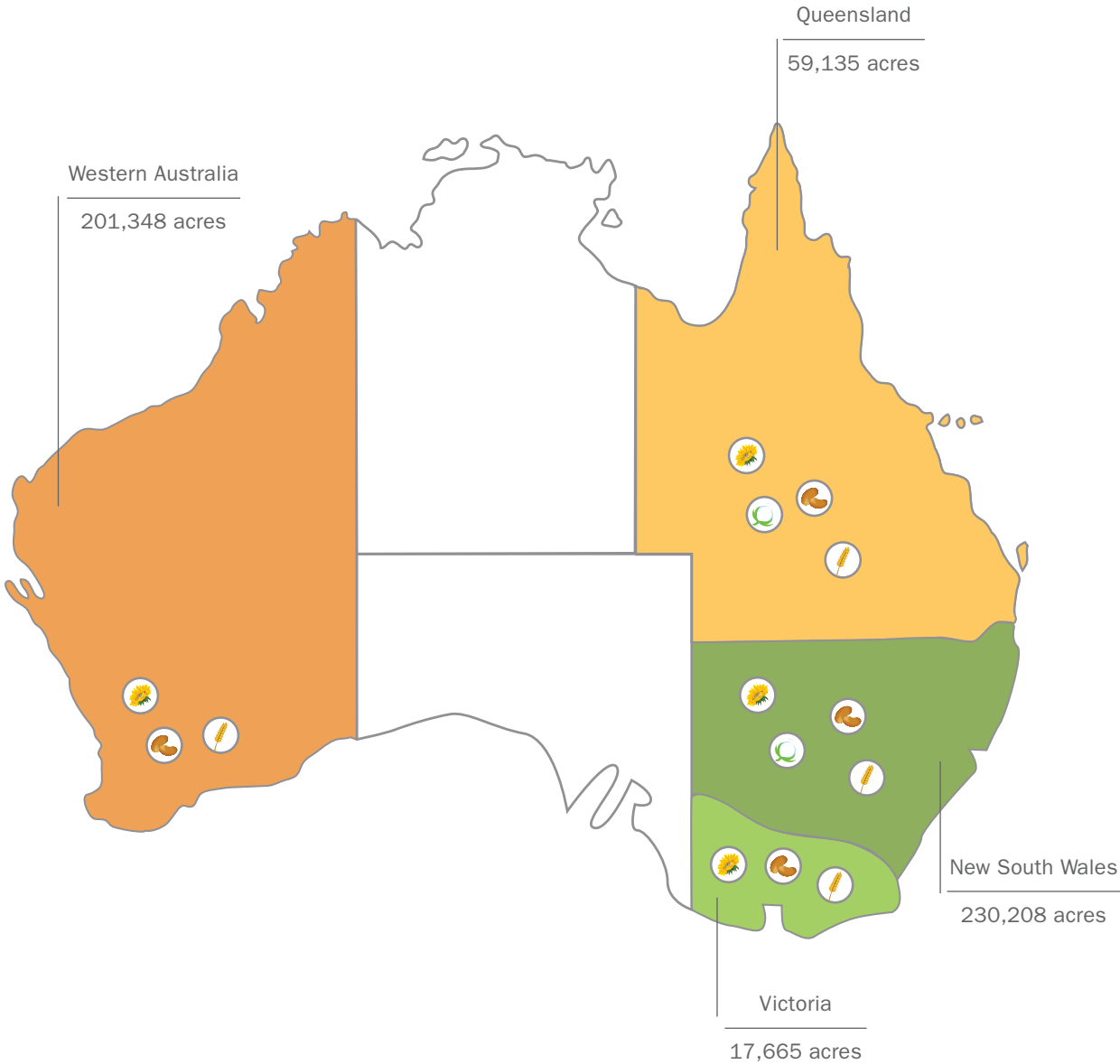


Total acreage as of 12/31/14: 227,389

Map Legend





Alfalfa	Apples	Avocado	Barley	Cherries	Citrus/oranges	Corn	Cotton	Cranberries	Grass	Lemons
Oilseeds	Pears	Pulses	Rice	Soybeans	Sugarcane	Tree Nuts	Vegetable	Wheat	Wine Grapes	

TIAA-CREF Farmland Holdings – Australia

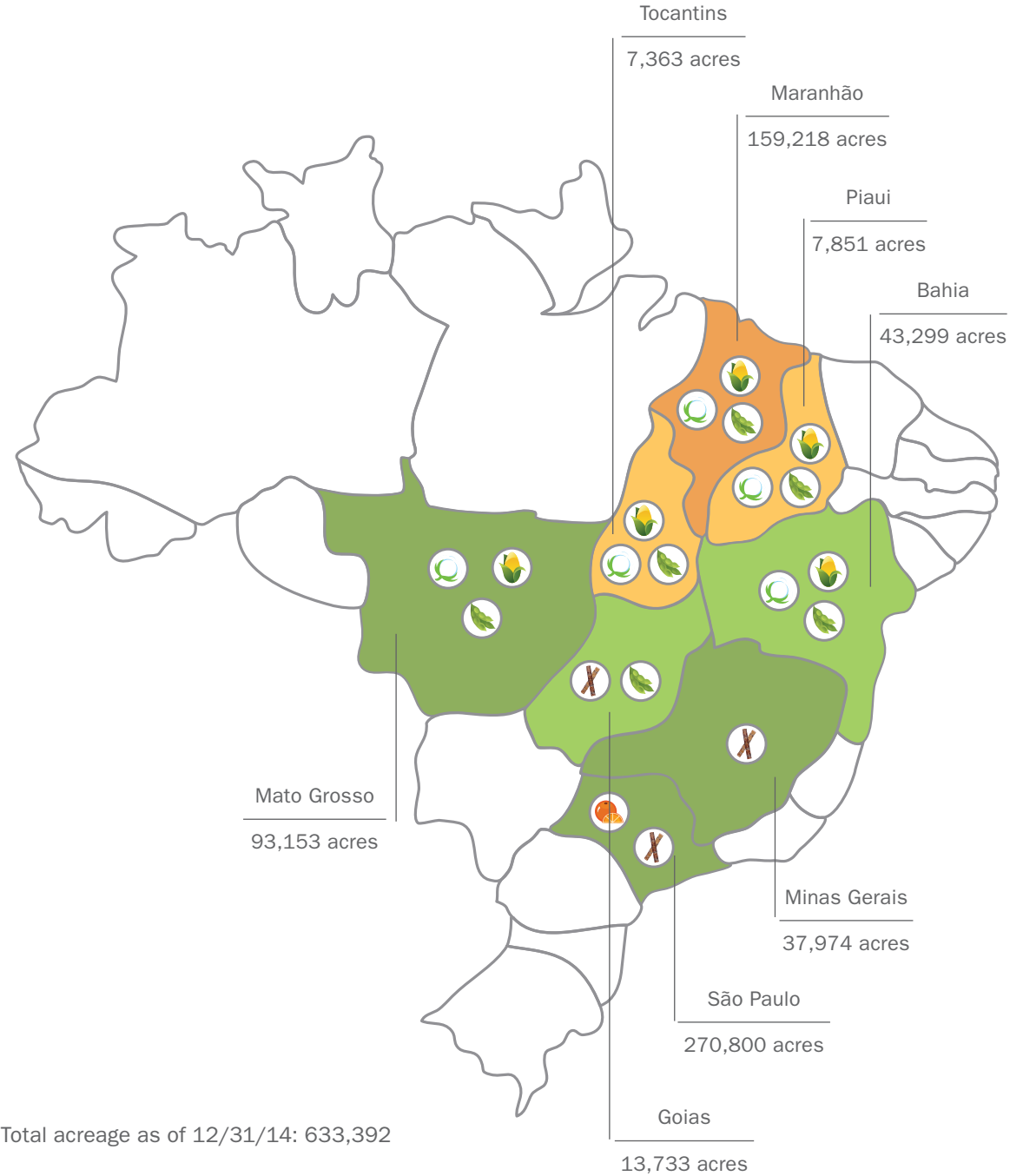


Total acreage as of 12/31/14: 508,355






Map Legend

			
Cereal	Cotton	Oilseeds	Pulses

TIAA-CREF Farmland Holdings – Brazil



Map Legend

				
Citrus	Corn	Cotton	Soybeans	Sugarcane

Tracking Progress on the Guidelines (KPI Results)

In adherence with Guideline Five, TIAA-CREF has committed to report publicly on our activities related to implementation of the Farmland Guidelines. This section provides greater detail on how we put each Guideline into practice and gives examples of our activities.

Methodology Update: Improving our KPIs to Meet Evolving Needs

In 2013, we introduced our initial set of key performance indicators (KPIs), and we are in our third year of using them to monitor our performance against the Farmland Guidelines. We created the KPIs to enable us to effectively measure our progress in and provide metrics to evaluate how we are meeting evolving challenges around water, land rights, and soil nutrients. Our aim from the beginning was to continue to revisit, improve and evolve these KPIs over time to ensure they were relevant and consistent with our strategy and operations. Moreover, evolving the KPIs also allows TIAA and our asset managers to take advantage of emerging opportunities in data tracking availability at the farm level.

In preparation for this report, we looked for opportunities to improve the KPIs, working closely with asset managers Westchester and Radar, as well as the think tank and advisory firm SustainAbility. We evaluated each KPI to ensure it was timely, specific, measurable, attainable, and relevant given the changing conditions in farming and farmland investing. This analysis included a review of various stakeholders and their interests by SustainAbility in order to ensure our reporting not only meets the criteria of the Farmland Guidelines but also sets a higher bar for measuring progress. We also wanted to ensure that we were as transparent as possible regarding the conditions on our farms while also recognizing that not all KPIs can be consistently measured. Based on this analysis we made a number of revisions to the KPIs, which are broadly outlined below and detailed in the Appendix on **Page 26**.

Key KPI Revisions and Improvements

Based on our analysis we made the following key KPI changes:

- Revised some KPIs to be more targeted in order to promote better practices
- Split broader KPIs into more specific indicators to provide greater clarity
- Tied KPIs to existing certification standards or third party programs as a proxy for quality management: see the Third Party Certifications call out box on **Page 17** for further details on this process
- Set a higher standard on some KPIs to account for the nature of growing challenges such as nutrient application

We may never achieve a 100% rating on all of the KPIs that we use to measure our performance against the Guidelines. As we continue to set higher standards we will likely start out with room for improvement, and that is the purpose of our strategy— to constantly set higher goals, recognize where we fall behind and set strategies towards achieving the standards we set for our properties. We would rather be transparent about where we fall behind and hold ourselves to a higher standard than simply ensure that we are achieving 100% on everything we measure. We expect these KPIs to evolve as we continue to work closely with Westchester and Radar to be mindful of the planet's resources and our impact on the lives of those with whom we work.

2015 KPI Progress

Across our portfolio we are performing well on a number of KPIs, but following some of the KPI revisions made this year, there are a few areas where we expect improvement. For example, there is room for growth across our metric for chemical and production inputs for row crops (KPI 1.3), but especially for permanent crops (KPI 1.4). Worker health and safety (KPI 2.2) also has significant room for improvement, and current performance relates to what is being measured with this revised KPI. While our current performance against these KPIs was not ideal, part of the reason for revising the KPIs was to be able to clearly identify where we need to focus our efforts moving forward, and in that sense we believe these ratings offer valuable information. We provide further detail on our KPI performance by Guideline in the following sections.

Table 1: Tracking KPI Progress

Topic	KPI	Current Rating Based on 2014 Data
Guideline 1: Promoting Environmental Sustainability		
1.1 Pre-acquisition environmental integrity	Percentage of farms acquired during reporting period that had appropriate environmental assessment conducted by an independent third party prior to acquisition	100%
1.2 Post-acquisition assessment	Percentage of farms owned longer than one year with annual property inspection completed by the asset manager	100%
1.3 Chemical and production inputs: row crops	Percentage of row crop farms that use Variable Rate or equivalent farming practices to efficiently apply fertilizer and/or pesticides	88.5%
1.4 Chemical and production inputs: permanent crops	Percentage of farms that grow a permanent crop, vegetable, or berries certified under a third party that verifies the farm is maintaining good management of fertilizer/pesticides	28.3%
1.5 Soil health	Percentage of farms in portfolio with ongoing testing (at least every 4 years) to monitor soil health and assess pH and nutrient levels	98.9%
1.6 Water management and conservation: accounting	Percentage of farms using irrigation in portfolio with detailed records of annual water usage maintained	86.9%
1.7 Water management and conservation: technologies and Innovation	Percentage of farms using irrigation that have practices in place for water conservation (e.g., water-conserving technology)	100%
Guideline 2: Respecting Labor and Human Rights		
2.1 Labor compliance	Percentage of on-site managers and tenants/operators agreeing to comply with state and federal labor laws	100%
2.2 Worker health and safety	Percentage of farms that grow a permanent crop, vegetable, or berries certified under a third party good practices verification program that verifies worker health and safety issues	27.9%
Guideline 3: Respecting Existing Land and Resource Rights		
3.1 Ownership and local land rights	Percentage of investments in portfolio with formal title search and review completed to verify chain of title/ownership	100%
3.2 Ownership and local land rights	Percentage of farms that are compliant with Federal Reclamation Law (Western U.S.) or assessed against applicable aboriginal heritage registers (Australia) or other indigenous rights depending on region	100%
Guideline 4: Upholding High Business and Ethical Standards		
4.1 Staff training on business and ethics	Percentage of company staff completing one annual business ethics course or industry best practices course	85.7%

* Please refer to Appendix A for further discussion on the changes to existing and previous KPIs

Progress against the KPIs is rated based on the following scale:

- Green = 95+% (satisfactory)
- Yellow = 80-94% (opportunities for improvement exist)
- Red = <80% (improvements needed)

1 Promoting environmental sustainability

As long-term investors, we believe that responsible stewardship of the environment is essential to the long-term performance of our farmland investments. Therefore, many of the KPIs we track under this Guideline are ones that we have adhered to for quite some time, including soil health and water management. This past year we have eliminated a few KPIs where we were achieving 100% in favor of more specific KPIs that provide greater detail. (See Appendix for further detail)

Within Guideline 1, we performed well across pre- and post-acquisition assessments, soil health and the use of water management technologies, but expect to improve on chemical and production inputs across both row and permanent crops and on water management accounting. We have set a higher bar with this KPI change as each crop

type handles chemical and production inputs differently; therefore, by being more specific, we hold ourselves to a higher standard. We separated the previous chemical and production input KPI into row and permanent crops, and as a result, it appears that we are falling considerably short on permanent crops. However, we believe this is more of a timing issue as a number of our vineyard properties are obtaining the Certified California Sustainable Winegrowing (CCSW) certification over the next year. Thus, we expect this KPI 1.4 for chemical and production inputs on permanent crops to improve in the next report.

The rationale behind many of our Guideline 1 KPI changes and our current impacts are outlined in the following topic specific boxes.

Third Party Certifications

We are exploring how to utilize third party sustainable farming certifications as we improve and continually strengthen our KPIs and metrics. Currently, certifications vary across crop type and geography, and there are multiple kinds of reporting frameworks. We have not yet found a single certification that satisfies all KPI needs across the many crop types and geographies within our portfolio. For example, there are certain widely accepted row crop specific certifications like Bonsucro, the Better Cotton Initiative and the Round Table on Responsible Soy that apply to a number of our sugar, cotton and soybean-producing tenants, respectively, in Brazil. However, there are fewer certifications across grain products, which make up a large percentage of our portfolio, and we are working to find ways to fill the gap. We are pleased though that many of our tenants who grow sugarcane in Brazil have already achieved or are pursuing the Bonsucro certification. For example, Radar's largest tenant is undergoing a project to certify 100% of its sugarcane outputs; in 2014, 26% of the sugarcane was certified by Bonsucro. We will continue to monitor and evaluate regulatory changes, industry standard practices and the evolution of these row crop certifications to inform our KPIs.

For permanent crops, there are a variety of certifications but not yet a one-size-fits-all approach to evaluating our properties. Within wine grape growing alone, there are now several certifications available, including Certified California Sustainable Winegrowing (CCSW), Napa Green, Lodi Rules, Sustainability in Practice (SIP) and others. Across fruits and vegetables, the USDA Good Agriculture Practices (GAP) certification ensures proper food handling procedures, but not environmental or labor conditions. We are working to better understand and evaluate how to use and support these certifications.

In the past year we gathered data on how many of our properties maintain some kind of certification and in the case of certain KPIs, we have drawn from these certifications to inform our performance on some of the Farmland Guidelines. For example, in KPI 1.4 we have elected to use the existence of a certification (which checks for practices that efficiently apply fertilizer and pesticide) on our permanent crop properties as a measure of whether that property is using good fertilizer/pesticide practices. There are many regulatory changes and moves towards certification consolidation, particularly in the U.S., which we will continue to monitor and use to re-evaluate our KPIs and policies. As certification procedures and guidelines improve, we believe our ultimate goal will be to identify all applicable third party certifications for farmland and eventually aim for third party verifications of any applicable TIAA-CREF assets.

Ensuring Effective Water Management

Global water crises and shortages are demanding new solutions and better metrics to track performance and ensure responsible management. These extreme conditions can fallow acreage, depress crop yields, reduce annual returns, and endanger the long-term productivity of farm assets. This past year, southeast Brazil has experienced the worst drought in eight decades. Severe droughts in California and Australia have also impacted crop yields, and we are seeing increasing regional water management regulations and programs in both California and the Mississippi Delta. The following portfolio snapshots provide updates on examples in Brazil, California, the Mississippi Delta, and Australia with details on TIAA-CREF's efforts to deploy sustainable water management and conservation programs for our investments.

TIAA-CREF's Efforts: Water Conservation Technologies

On all its properties, TIAA-CREF works to minimize soil erosion and rainfall runoff by building properly designed roads, berms, culverts and terraces. Across its permanent crop lands (tree fruits, nuts, citruses, grapes), TIAA-CREF implements efficient drip-line and micro-sprinkler irrigation systems. On farmlands using flood or furrow irrigation, TIAA-CREF aims to use recyclable polyethylene piping. When combined with other water-management techniques, these pipes can improve water-use efficiency by 25%.

On TIAA-CREF properties in the southern United States and Australia, techniques like precision land leveling are being introduced to improve drainage, control erosion and reduce overall water use. Where appropriate, TIAA-CREF also implements low-pressure, center pivot irrigation systems with drip nozzles, perimeter pads and flashboard-riser culverts as well as cutting-edge technologies like moisture probes that monitor soil moisture levels and inform the farmer to apply water only when necessary. All of these techniques are designed to improve sustainability and efficiency. When used, they can cut overall water usage dramatically.

Brazil—Drought Management Practices

In 2014, Brazil's southeastern states dealt with unusually low rainfall. For sugarcane, one of our main crops in Brazil, droughts can affect the plant's sugar levels and force farmers to plant more sugarcane to produce the same amount of sugar. Producers that lack infrastructure and do not employ leading sustainable agriculture practices are more vulnerable to drought. Our largest Brazilian tenant however, was well prepared and registered one of the lowest levels of production decrease. Their production in the São Paulo state only dropped by an average of 5% (compared to an average 12.1% drop throughout the rest of the state) due to good farming practices and planning. Such resiliency

reiterates the importance of employing water conservation and efficiency tools that promote the sustainability of TIAA's investments.

Following the 2014 drought, our largest Brazilian tenant has also enhanced its water protection and efficiency strategies at its mills. The company seeks to reduce the ratio between the volume of water used and the volume of sugarcane processed, and in 2013/2014 reused 47.8% of its wastewater (approximately 12.2 million m³ or 3.2 billion gallons) in the fields. The tenant is also piloting a subsurface drip irrigation system across 222 acres that applies water directly to the sugarcane plant's roots.

California - Sustainable Groundwater Management Act and Napa Valley Irrigation Pipeline

Understanding groundwater conditions and appropriately managing groundwater use is critical to ensuring future water supplies. In 2014, California legislature passed the Sustainable Groundwater Management Act (SGMA) to improve the state's groundwater sustainability. The SGMA responsibilities include developing regulations to identify basins in critical condition, evaluating and implementing Groundwater Sustainability Plans (GSPs), and publishing best management practices for sustainable groundwater management. The new regulation affects all of TIAA-CREF's assets in California and we will continue to monitor and abide by any directives from the SGMA.

In light of historical droughts impacting California, our vineyard management team in Napa identified a way to help reduce groundwater withdrawal. Westchester's vineyard management team, Silverado Investment Management Company, worked with the Napa Sanitation District to develop a two-foot wide pipeline to route treated water from a local wastewater-treatment facility to vineyards and other users in the area. To initiate the project, TIAA-CREF invested \$2 million in capital and granted property easements to allow the pipeline to run through its properties. TIAA-CREF expects to be paid

back the \$2 million investment over the next 20 years through a combination of lower water costs and return of capital from the Los Carneros Water District. The pipeline benefits our vineyards as well as 30 to 40 other landowners in the Los Carneros Water District by reducing the amount of groundwater needed for crop irrigation and reusing treated wastewater that would have been flushed into local streams and rivers. The pipeline also gives us the ability to add a real estate development project to one of our properties, increasing the overall value of the asset and TIAA-CREF's investment.

The pipeline is expected to be complete by the end of 2015, and TIAA-CREF's Stanly Ranch Vineyard, comprised of 250 acres of Chardonnay and Pinot Noir vines, will reduce its water cost by approximately \$100,000 annually. The Silverado team's sustainable, long-term approach to water conservation has benefitted the entire community beyond just TIAA-CREF. Because the recycled water has lower costs than the existing resources, overall water costs may be reduced by as much as 65%. As a result, local farms would be expected to generate a similar net benefit to their bottom line from these costs savings. Furthermore, water consumption from ground and surface water sources in the region is anticipated to decline by 75%.

Mississippi Delta Water Conservation

In the MS Delta region new irrigation tools, such as PHAUCET (Pipe Hole and Universal Crown Elevation Tool) and Pipe Planner, are improving irrigation efficiency across the entire region, including farms in Mississippi, Louisiana and Arkansas. These online evaluation tools were developed to provide farmers, grading contractors and planners a tool for designing efficient furrow irrigation systems. These tools can determine a number of factors such as irrigation pipe and hole size combinations to deliver more consistent water infiltration and reduce pump times. The key benefit of the tools are that water is applied more efficiently resulting in water and fuel use (for pumping) reductions and less chemical and nutrient loss due to leaching and surface runoff.

The Yazoo Mississippi Delta Joint Water Management District was formed by 17 Mississippi counties in 1989 for the purpose of establishing a water supply system, conserving water resources, and developing additional water resources. TIAA-CREF currently has 292 irrigation wells in Mississippi, all of which are permitted through the Yazoo Mississippi Delta Irrigation District (YMD). The YMD provides oversight of this replenishing, but widely used aquifer, in coordination with the Mississippi

Department of Environmental Quality. YMD has implemented a voluntary program designed to encourage landowners to install flow meters on irrigation wells in order to monitor annual irrigation water use and its impact on the aquifer. YMD aims to have 10% of all its wells metered by 12/31/2015. TIAA-CREF will meet this target by installing meters on 10% of all Mississippi wells by the end of 2015. The water usage reported by all users will encourage efficient water conservation practices throughout the region.

Australia—Row Crop Irrigation Practices

In Australia water is generally the most limiting factor for crop performance, and thus Westchester and our tenants are both constantly looking for ways to drive water conservation and efficiency. The recent 2013-2015 drought in northern Australia was especially tough on row crop operations in our Northern and Eastern management regions. MacIntyre Downs, currently a custom operation asset, was one of the most adversely impacted properties in the portfolio, but has implemented a number of water efficiency and conservation measures to deal with the current and future drought. On MacIntyre Downs the small amount of available irrigation water has been concentrated on the highest producing areas of the farm that are close to water access points, thus minimizing transmission losses and evaporation. Well-maintained tail water (leftover water from irrigation or rainfall not absorbed by the soil or crops) systems have also been used to ensure any runoff can be collected and reused in the system with the highest efficiency. In addition, the farm's moisture monitoring technology has been used more intensively to best match irrigation timing with plant demands. The farm has also invested in property upgrades, including repair and enhancement works on water storage, irrigation gates, channels and pumps stations, so the property is ideally positioned to operate at top efficiency at all times.

Many of our other properties in Australia also utilize tailwater recovery systems to collect, store and transport tailwater for reuse in the farm's irrigation system. This practice can result in 10-20% water savings. Although this water conservation technique is common to Australia, Westchester works to ensure that the properties we purchase already have tailwater recovery systems in place and also invests in improving these systems over time to make them as efficient as possible. Westchester is also currently participating in a state government initiative to install water meters on farm water reservoirs so the volume of tail water that is collected can be accurately quantified and used for future irrigation scheduling.

Managing Nutrient Runoff Effects

Nutrient runoff is an increasing concern in many of the areas where TIAA-CREF owns properties. Below we provide a brief outline of the issue, the growing regulatory attempts to limit impacts and how we are working to address the problem.

The Issue

Nutrient runoff is an unfortunate side effect of rain that washes critical fertilizer nutrients (mainly nitrogen and phosphorous) into surrounding bodies of water. Excessive amounts of nitrogen can cause algae growth, which depletes oxygen levels and adversely affects water quality. Consumption of nitrogen heavy water can lead to health issues and can even be toxic at certain levels. When water is affected by nutrient loading, municipal water suppliers must invest in costly remediation to remove, filter and clean the water in order to bring it back to federally regulated standards.

Many large coastal areas and waterways globally have become hypoxic, or oxygen-depleted, because of nutrient runoff, and this results in “dead zones” absent of plant and animal life. In the U.S., the Gulf of Mexico has been particularly impacted as nutrient runoff from the grain belt collects along the Mississippi River system and is then discharged into the Gulf. In 2014, the EPA estimated the Gulf of Mexico Hypoxic zone to be approximately 5,000 square miles¹, roughly the size of the state of Connecticut.

Increasing Regulation and Programs to Limit Runoff

Nutrient runoff is particularly relevant for TIAA-CREF's U.S. portfolio of properties in the Mississippi river watershed and in California, regions with increased regulation and state action to limit runoff. In California, the Irrigated Lands Regulatory Program (ILRP) regulates discharges from all irrigated agricultural lands and requires corrective actions when impairments are found. In the Mississippi river watershed, states continue to develop nutrient reduction strategies for reducing nutrient runoff in their state. Some states have already completed their strategies, while others continue to work on completing draft and final documents. TIAA-CREF properties are in compliance with all regulations, and many of our tenants are engaged in nutrient management programs.

TIAA-CREF's Efforts: Assessing Our Properties

In an effort to better understand the impact and ways to reduce nutrient runoff, we revised our Chemical and Production inputs KPIs (1.3 and 1.4) to account for how our tenants are applying fertilizer and pesticides efficiently. We set a higher standard than in previous years and made two separate KPIs, allowing us to account for the varying practices across row and permanent crops.

For row crops such as corn, cotton, sugarcane and soy, farmers commonly use Variable Rate Technology (VRT), or equivalent practices (for example, split rate nitrogen application) to efficiently apply fertilizers. In the VRT technique, the property is first mapped into a grid using GPS, and soil samples are taken across the property to determine how much nutrient is needed in each area. Fertilizer is then precisely applied to the soil based on those calculations. This differs from techniques such as blanket application where fertilizer is applied consistently across an entire area. When VRT is deployed, ideally, the right amounts of nutrient inputs are applied in the right place and at the right time. Thus, we have revised KPI 1.3 to check for how many row crop properties in our portfolio are using VRT or other applicable farming practices and are pleased with how extensively these practices are used across the portfolio. Westchester and Radar work with tenants to discuss industry best practices as they evolve and with this KPI, we will track their progress in implementing them.

In the case of permanent crops, VRT is not as commonly used so we decided to use certifications, when available, as a proxy for good chemical and production input, given that certifications often cross check that the amount of fertilizer being applied on a farm falls within the recommended amounts. Thus, KPI 1.4 tells us how many properties in our portfolio have attained some certification that checks for techniques that efficiently apply fertilizer and/or pesticide. With the higher standard of using certification as the KPI, not all of our managers had completed this process by the end of 2014. Based on their efforts toward achieving certification in 2015, we expect significantly higher performance against this KPI in next year's report.

¹ <http://water.epa.gov/type/watersheds/named/msbasin/zone.cfm>

2 Respecting labor and human rights

We believe that respecting labor and human rights — those of farmers, farm workers, and citizens of farm communities — is an essential element of a successful farm operation. By employing a variety of practices across our farmland portfolio at a minimum, we strive to ensure that our tenants and operators maintain a standard of practice around labor and human rights:

- Our standard lease agreement for farm operators requires compliance with national and international health and safety standards such as USDA, OSHA and EPA requirements.
- Lease and crop management agreements also specify adherence to applicable state and federal labor laws and require tenants/operators to maintain proper permits and licenses.
- All farm operators provide safety training to their employees and ensure all relevant custom farm operators are certified as required and trained for potentially hazardous activities, such as applying chemicals or operating machinery.
- Annual property inspections are completed to confirm that management of the property is meeting expectations with regard to safety, appropriate signage, and the safe handling of chemicals and pesticides.

We achieved strong performance against KPI 2.1 this year, but we also recognize that Labor and Human Rights are an ongoing concern for many stakeholders and are looking for new ways to evaluate our tenants' performance beyond the minimum standards we set. We have taken steps towards developing a stronger evaluation process over the past year. We revised KPI 2.2 to utilize third party certifications as a standard for how our permanent crop properties are performing. We decided to develop a more specific KPI for those properties because some permanent crops require hand labor to pick and harvest the final product, whereas all commodity row crop harvesting can be done by machinery. While our performance against this new KPI shows significant room for improvement, we believe this is primarily due to limited third party certifications across those crops, which should be substantially improved by next year. Regardless, by setting a higher standard and arming ourselves with more precise data, we can continue to improve.

We are also in the process of completing third party audits on a number of properties in Brazil, which includes an evaluation of labor and human rights standards. This work is expected to be complete by the end of the year, and we look forward to providing an update in our next report.

Fruits of Employment Training

As part of the Fruits of Employment hiring initiative, TIAA provides training to new custom farm managers on how to hire, train, and support persons with disabilities. As part of the training and with the support of our disability consultants, we provide an overview of the initiative and describe how existing custom farm managers that have hired individuals through this initiative have seen a benefit to their farms. We provide a historical perspective of persons with disabilities in the workforce and insight on statistics regarding workers with disabilities. The managers also receive training on sourcing, communications and support strategies. After the training, most ranch managers realize that they already employ a person with a disability on their farm(s). Ongoing dialogue among all of the participating managers in the initiative contributes to best practice sharing and continuous training in managing a diverse workforce.



3 Respecting existing land and resource rights

Respect for existing land and resource rights is critical to our responsible investment strategy and will be of increasing importance in the coming decades as competition for scarce resources such as arable land and water intensifies due to increasing global population and food consumption patterns.

For communities, land rights underpin social and economic stability and security. Yet, in some places, land rights may be a source of conflict due to ambiguous laws, lack of clear documentation, or historical disputes. We do our best to avoid investing in areas with ambiguous land rights laws. However, in regions where this may be the case, we ensure that proper land title searches and ownership are confirmed prior to purchase. Our KPIs are meant to reflect the due diligence procedures and processes that are performed to ensure we are evaluating the integrity of our land investments and conducting appropriate screening for relevant local factors. We are pleased to have achieved a 100% performance rating on both KPIs related to Guideline 3.

Ongoing Activities Related to Guideline 3

Within any specific region or sub-region there may be no land rights regulations or the issues addressed by the regulations may differ. For example, in the Western U.S., Federal Reclamation Law places limits on the acreage that can receive Bureau of Reclamation water. TIAA has limited exposure to this law and is in compliance across all properties to which it applies.

In Australia, where aboriginal heritage is an important consideration, the freehold land that TIAA currently invests in has all native title rights extinguished, as a matter of law. However, we do still ensure that all properties are assessed against applicable aboriginal heritage registers and that any remaining aboriginal heritage sites listed on these public registers are identified and protected under our stewardship.

In Brazil, the Brazilian Federal Constitution governs the land rights of indigenous populations and quilombolas (descendants of slaves whose ancestors escaped from its farms to and founded villages called quilombos, during the slavery period). Indigenous land is recognized as the portion of a sovereign territory that is inhabited by one or more indigenous ethnic groups who utilize the land for the development of productive activities and physical or cultural reproduction, regarding customs and traditions. The rights over these lands are registered in Brazil's constitution. Today there are 462 indigenous lands registered, which accounts for approximately 13% of the national territory. Most of them are within the Amazon biome in the northern region of Brazil, whereas most of our properties lie in the

southeast. Radar's legal team conducts due diligence to ensure properties with potential indigenous or quilombolas claims are not purchased. The team has an in-depth process to analyze property titles going back 20 years or more and reviews both the oldest and most recent titles to ensure there are no competing claims. We currently do not own any properties with indigenous populations or quilombolas claims and will continue our due diligence to ensure we do not purchase any moving forward.

Supporting Local Heritage

TIAA-CREF's Brazilian property manager Radar has also worked proactively to maintain local heritage sites connected with our properties. In 2013, Radar learned of a historically important chapel located in the middle of a 37-house colony on one of TIAA's properties in the Piracicaba region of São Paulo state. When the chapel and buildings were designated a heritage site, Radar decided to fund the reconstruction of the chapel. In December 2014, when the renovations were complete, Radar donated both the chapel and surrounding buildings to the municipality.

At another site in São Bernardo, a 30-building colony and surrounding ruins were also designated as a cultural heritage site. The colony was also the birthplace of a famous modernist artist from Brasil, Ms. Tarsila do Amaral, and Radar donated the property to a local NGO dedicated to cultural preservation. Abaçai intends to develop a cultural center to share local traditions with visitors, thus helping to maintain the area.

Land Protection

In Brazil, TIAA strictly follows the Brazilian Forest Code (the "Code"). This legislation was passed in 1965 and governs protection of forests on private properties, which contain over half of Brazil's remaining forests and savannahs. Revisions to the Code were passed in 2012 and one of the most important requirements focuses on speeding up the restoration of legal reserves for native vegetation. Leaving these protected areas intact preserves biodiversity, maintains water quality, and stabilizes soils. In addition, an online land registry system, the institution of Rural Environmental Record ("CAR") was created for landowners to register their property boundaries and environmental information.

All landowners are required to provide this information by the end of 2015, and this requirement will be met for all Brazilian properties managed by TIAA. It is TIAA's general practice to maintain the forests on the land it acquires in Brazil.

4 Upholding high business ethics

Upholding high business and ethical standards is a key component of TIAA-CREF's corporate values. We have incorporated a number of business practices into our standard investment operating model that demonstrates our commitment to upholding and implementing this principle. As a signatory to the UN Principles for Responsible Investment ("PRI"), TIAA-CREF also reports publicly on the full scope of its responsible investing activities, available on our website at www.tiaa-cref.org/public/about-us/investing/responsibleinvesting-ri.

For the 2015 report, we modified KPI 4.1 slightly to encompass our asset managers' entire staff as well as the type of training that staff may receive. Our asset managers instill an organizational culture of high business and ethical standards that goes beyond the investment staff. We also believe that there may be many types of training appropriate to a given employee's role and encourage our asset managers to make that determination.

With this change in the KPI being measured, our rating is similar to our overall performance from 2014. While our asset managers have targeted 100% on this KPI, most of the employees who did not complete the training were hired at the end of 2014 and will receive the appropriate training in 2015. We expect to see this reflected in next year's performance.

University of Illinois Partnership

The TIAA-CREF Center for Farmland Research at the University of Illinois was launched in 2013 as a collaboration between the two organizations to engage in research that will inform agricultural policy and drive long-term and sustainable investment practices by institutional investors, businesses, and farmers. During its second year, the Center directed an undergraduate research experience program at the University of Illinois, utilizing farmland returns data and evaluating the impact of agricultural investments on institutional portfolios. One undergraduate developed a model that confirmed that farmland as an investment class offers benefits in scale due to its negative correlation with returns for traditional equities and its positive correlation to inflation. Center faculty and colleagues participated in numerous outreach activities including formal presentations to audiences interested in agricultural investments and returns. As part of a longer-term strategy for developing both presence in and capacity to participate in agricultural policy formation and evaluation for programs that impact agricultural land, the Center participated in a Regional Conservation Program proposal (RCP RFP) to evaluate the impacts of the adoption of conservation and stewardship programs on the value of agricultural land.

Going forward, the proposal will be used to continue to promote research funding that supports best practices for conservation and stewardship, with an emphasis on the positive aspects for sustainability and value improvement.



5 Reporting on activities and progress towards implementing and promoting the guidelines

The Guidelines for Responsible Investment in Farmland form a cornerstone for how TIAA-CREF builds and manages its global farmland portfolio. Our 2015 report demonstrates TIAA-CREF's commitment to improving and refining the reporting on our progress towards implementing and promoting the Guidelines. Since our first report was released in 2012, we have continued to strive for improved transparency and both broader and deeper engagement with our stakeholders.

In the current report, we have tailored the KPIs to address the significant differences between row and permanent crops and provide more transparency on our activities pre- and post-acquisition. We also identified voluntary third-party certification as a way for our stakeholders to ensure that defined and appropriate industry best practices are being followed. The call-out boxes included above address current topics in our portfolio as well as issues we believe are of interest to our stakeholders. We will continue to evolve the KPIs to account for shifting challenges as we operate under the guidelines.

Beyond reporting, TIAA-CREF continues to sponsor research on environmental, social, and governance practices, and sponsor conferences. We also work with regulators, legislators, self-regulatory organizations and other

institutional investors to educate the business community about governance, shareholder rights and responsible investing. We regularly submit written comments on regulatory proposals and testify before various governmental bodies, administrative agencies and self-regulatory organizations. We participate in public and industry debates—as well as related conferences and symposia—dealing with governance issues in domestic and international markets. In addition, the TIAA-CREF Center for Farmland Research makes information on farmland returns and their impact on an investment portfolio available to all interested parties. The Center's longer-term strategy to participate in agricultural policy formation—particularly related to conservation and stewardship related to agricultural land—targets an audience of farmers, investors and policy makers.

Over the last few years, investment in farmland has gained more attention globally, and many investors now understand the benefits of including this asset class in a broad portfolio. However, we strongly believe that following the Farmland Guidelines is key to preserving the productivity of the farmland and simultaneously producing investment returns that can be sustained over decades.



Appendix

KPI improvements

As stated earlier in the report, we revised some KPIs to set a higher standard for ourselves, and to ensure we are seeking the best performance possible against the UN PRI guidelines as farmland challenges evolve and we learn more about what is effective across our properties.

We made certain KPIs more targeted in order to promote better practices and split others into two more specific indicators to provide greater clarity. Certain KPIs were also tied to existing certification standards or third party programs as a proxy for quality management. As a result of these efforts to raise the bar we also removed three KPIs: Land Protection, Sustainable Agriculture Practices and Resource, Energy and Fuel Conservation. Land Protection and Resource, Energy and Fuel Conservation have become standard practice across our portfolio, while Sustainable Agriculture Practices are covered by the below stricter Environmental Sustainability KPIs.

Guideline	2015 Status	Improvements since 2014 report
Guideline 1: Promoting Environmental Sustainability		
1.1 Pre-acquisition environmental integrity	Percentage of farms acquired during reporting period that had appropriate environmental assessment conducted by an independent third party prior to acquisition	The wording has changed slightly for this KPI, but still confirms that we have conducted a third party environmental assessment prior to purchase.
1.2 Post-acquisition assessment	Percentage of farms owned longer than one year with annual property inspection completed by the asset manager	Added this KPI to build upon 1.2 and confirm farms are inspected throughout the life of the property.
1.3 Chemical and production inputs: row crops	Percentage of row crop farms that use Variable Rate or equivalent farming practices to efficiently apply fertilizer and/or pesticides.	Split KPI into two to reflect the differences in how fertilizer is applied across the different crop types. Added further specification to this KPI in order to capture a measure of efficient application for row crops.
1.4 Chemical and production inputs: permanent crops	Percentage of farms that grow a permanent crop certified under a third party that verifies the farm is maintaining good management of fertilizer/pesticides	Split KPI into two to reflect the differences in how fertilizer is applied across the different crop types. Added further specification to this KPI to ensure good management practices for permanent crops are maintained through third party certification/verification.
1.5 Soil health	Percentage of farms in portfolio with ongoing testing (at least every 4 years) to monitor soil health and assess pH and nutrient levels	This KPI now specifies that appropriate ongoing soil testing should occur at least every 4 years. (The original KPI checked that the “appropriate ongoing testing” occurred, we have made this more specific to ensure testing occurs every 4 years).
1.6 Water management and conservation: accounting	Percentage of farms using irrigation in portfolio with detailed records of annual water usage maintained	This KPI has not changed.
1.7 Water management and conservation: technologies and Innovation	Percentage of irrigated acreage on farms that use water conservation technologies or land development practices to minimize water use	This KPI now includes further specification, including a Minimum Threshold Standard where at least 80% of an irrigated property must be using at least one water conservation technology or practice (e.g., low volume irrigation, efficient sprinkler methods, precision land leveling, ditch or canal lining with impervious material, tail water recovery systems, and/or moisture sensing/sensors).

Guideline	2015 Status	Improvements since 2014 report
Guideline 2: Respecting Labor and Human Rights		
2.1 Labor compliance	Percentage of on-site managers and tenants/operators agreeing to comply with state and federal labor laws	This KPI has not changed.
2.2 Worker health and safety	Percentage of farms that grow a permanent crop certified under a third party good practices verification program that verifies worker health and safety issues	This KPI has been changed to reflect the increased health and safety concern for laborers working on permanent crop farms that require labor intensive harvesting vs. the mostly mechanized harvesting for commodity row crops. This KPI now entails third party certification/verification to measure safe and healthy working conditions.
Guideline 3: Respecting Existing Land and Resource Rights		
3.1 Ownership and local land rights	Percentage of farms in portfolio with formal title search and review completed to verify chain of title/ownership	This KPI has not changed.
3.2 Ownership and local land rights	Percentage of farms that are compliant with any applicable lands rights laws across the U.S., Brazil and Australia	This KPI was rephrased in order to use more encompassing language to pertain to all of TIAA-CREF's regions of land asset ownership.
Guideline 4: Upholding High Business and Ethical Standards		
4.1 Investment ethics	Percentage of company staff completing one annual business ethics course or industry best practices course	This KPI was revised slightly to encompass our asset manager's entire staff as well as include different types of training that may apply to investment ethics.



Looking Ahead

We are pleased with our 2014-2015 performance against the new KPIs and believe that the improved transparency benefits all stakeholders. We expect that there will be continuity in overall content of the KPIs but also an evolution as the industry changes over time.

Looking ahead, we believe that appropriate third party certifications will be a useful method of verifying that best practices are being followed and will continue to investigate the best ways to use these certifications. A key challenge for the industry currently is to clearly define a specific and accepted set of sustainability standards for a diverse set of crops and geographies. Another key challenge for the industry will be having a deep pool of experienced individuals to carry out these certifications in an efficient manner. We will be closely watching the evolution of these certifications across the agriculture industry and expect to incorporate changes into our KPIs over time.

As TIAA-CREF grows and evolves as a farmland investor, we will maintain our dedication to being responsible stewards of the land we own. We look forward to improving our performance over time and sharing our progress with you in the years to come.

Overview of TIAA-CREF

TIAA-CREF is a Fortune 100 financial services company with a history of investing spanning more than 90 years. We are a leading financial services organization with \$851 billion in assets under management (as of 12/31/14). The firm is a leader in helping those in the academic, medical, cultural, governmental and research fields plan for retirement, and life's other goals. Over 5 million individuals trust us to help support their financial well-being.

TIAA-CREF has a long history of socially responsible investment, including becoming a signatory of the UN PRI in 2009. We regularly publish information on our overall approach and performance on socially responsible investing, which can be accessed by visiting www.tiaa-cref.org/ri2014.

Contact Us

For more information, please visit tiaa-cref.org.

Additional information on the Principles for Responsible Investment in Farmland can be found at www.unpri.org.

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