



Infrastructure's potential to benefit global food security

Chase McWhorter, Institutional Real Estate, Inc.'s managing director, real estate and infrastructure, recently spoke with **Darren Rabenou**, head of Food & Agriculture for UBS Asset Management's Real Estate & Private Markets (REPM) business. Following is an excerpt of that conversation.

With the war in Ukraine, COVID-19 and rising commodity prices, are the threats to food security multiplying?

The consequences of COVID-19 triggered global concern around food security. Even developed countries such as the United Kingdom worried about food shortages during the global lockdown because borders were basically closed. In some regions, such as the Middle East, there were concerns about the potential political unrest due to shortages and rising food prices. While the pandemic is a distant memory for some, the Ukraine war has brought food security front and center again. Many have forgotten that Ukraine is a large, low-cost food producer and considered the breadbasket of Europe. The United States, on the other hand, has less to worry about given the size and the scope of its food market. That is not the case for people in a lot of countries that depend more on importing food, including G7 countries. The war in Ukraine has once again created a worry in places such as the Middle East and Africa. A good example is Egypt. Egypt is a primary importer of Ukrainian grain, so that is not only a worry for the local Egyptian government, but for the region, as well. Ukraine's export markets include China, Europe and Africa.

What role can the private sector play in alleviating food-security challenges from farm to table?

In my view, the private sector is a key catalyst to supporting food security. Growth capital has a role in investing and promoting new food ideas. For example, protein-based food alternatives such as Beyond Meat – a plant-based, vegan meat – are typically initially funded by the “venture community.” The venture community also invests in food technology, such as agriculture technology, drones and robotics on the farm, or water technology. Infrastructure capital, however, is really the most important capital source here, and I think that is not reported as much because growth equity capital typically invests in “cooler” ideas. Growth equity and venture capital are investing in very innovative type ideas, but for many cases, innovations don't work well. Infrastructure capital is what brings size and scope, has long-term impact and brings down costs. Long term, it is this type of infrastructure capital – not growth equity – that will bring down the cost of food in scale. Food investing only works when there is an endgame that supports scale and lower costs. Investing in a new apple variety or a citrus variety only works if there is enough demand for it that it brings down its unit costs. Consequently, the cost goes down and can be competitive from a production perspective.

This is where I think the venture community miscalculated around some exciting areas like vertical farming. The challenges faced today by vertical farming have more to do with the sector's lack of ability to produce food at a low cost and the lack of the ability to attract cheaper cost of capital to fund that. Infrastructure capital is cheaper than growth equity capital, and that is what is going to be the driver. If vertical farming 1.0 or 2.0 is going to work, it has to bring in more stable capital long term because they are competing with how farmers fund themselves. Vertical farming needs a growth plan that incorporates a light at the end of the tunnel where you can basically finance a facility as competitively as a farm.

This is the main reason we pursued cold storage versus vertical farming as a business. Like vertical farming, cold storage is capital intensive, but here is the difference: With cold storage, I can find a long-term tenant with long-term contracts, which makes this investment more readily able to be financed and have better risk-return dynamics. These investment types address sustainability in a different way and both use a lot of energy, but we think cold storage has a bigger impact using that energy by reducing the cost of food production and indirectly reducing food waste. We are one of the largest managers of institutional farmland in the United States, managing approximately 300,000 acres, so cold storage was a natural business to evolve out of that work, leveraging off our expertise in food and our expertise in real estate.

How are food systems influencing and being affected by climate change?

This is a challenging question because many people might say efforts such as organic farming are the answer to reducing climate change, but there are unintended consequences of just converting to organic farming versus conventional. For one, food prices would explode because organic farming is almost always more expensive and less productive than traditional farming methods. In terms of sustainability, organic farming might check the box on the environmental side, but the social impact on lower-income people would be devastating.

What we can do is encourage traditional farmers to use more sustainable farming practices in their businesses that have less impact on the environment. We believe you can align farmers with the needs of the environment. Our tenant farmers, for example, are very good stewards of the land because it is good for their business. If farmers are utilizing good sustainable practices, it is a benefit for the environment, but it is also good for their pocketbook. That becomes a balancing act we as stewards of capital need to think about when putting money to work with our farmers.

What can policymakers, scientists and citizens do to transform food systems?

Unique collaboration from all three is required to transform the food system. You need well-thought-out government policy first. Here is an example: California is critical to U.S. food security because it produces around 40 percent of perishable fruits and vegetables for U.S. consumption, not to mention nuts. California has drought issues, but in 2023, it has seen record precipitation. One would think record snow and record rainfall would be a quick fix to the state's water needs. Instead, around 80 percent of California's recent precipitation will be deposited in the ocean, and the reason for that is the state hasn't built a major reservoir in more than 50 years to support both their growing population and their farmers. There are policy decisions that can be implemented to address California's water-security issue, and governments can address this by supporting the financing, which is where the private sector comes in to play.

Science and technology also have a huge role. U.S. farmers can be viewed, in general, as among the most productive farmers in the world because they have adopted new technologies. They have also been able to afford new technologies. It is critical technology being implemented in places like the United States and then transported to developing countries. Think about the impact drones could have on farms in Africa, measuring crop health as they do in the United States. This technology transfer will make these developing countries more efficient and cost competitive.

On the consumer side, the average citizen has a large role here, too. Think about what the impact on food waste would be if consumers changed some of their behaviors. Much of food waste, especially fruit, results from consumer demand to purchase only perfectly shaped fruit, and U.S. consumers are an example of this. Supermarkets will only buy 12-inch pineapples, for example. Most pineapples are not 10 to 12 inches, but if you go to a U.S. store, you will see only perfectly measured pineapples. The same thing applies to avocados. While some of the rejected fruit can be processed, much gets wasted. But both the consumer and the retailer have a responsibility to change perceptions. An organization called Imperfect Foods is trying to promote buying the crooked carrots and misshapen onions, but you need the big retailers to adopt these types of practices before you can have impact.

Do you think plant-based products will play an increasing role in food security?

Yes, but it is still early. Plant-based food version 1.0 has had mixed results. Producers need to go back to the drawing board and think about product taste and have a clearer vision of how they are going to bring down costs. Growth equity plays a role in the innovation side of this, but there also needs to be a vision of how we bring those costs of production down. The success of almond milk is a good example. Innovators were able to create something that became an alternative to traditional milk, and they have produced it in scale and, in general, brought its cost of

production down so it is literally an alternative. They need to do that in other areas.

What challenges are food companies facing in terms of sourcing and supplying?

One of the main challenges food companies face regarding sourcing and supplying is ensuring sustainability through the supply chain, which includes sourcing raw materials in a way that incorporates more sustainability standards. As managers and owners of farmland, we encourage our farmers to adopt more sustainable standards. We are a founding member of a newly developed sustainability standard for farmland portfolios called Leading Harvest, designed to optimize sustainable farmland management as part of a comprehensive assurance program. Leading Harvest promotes farmers to use better farming practices that are, first, good for their crops, but also have sustainable characteristics. This is an independent organization that is good for the farmer and good for the companies that are buying resources. We think it is good for us as investors too, because this type of collaboration will ultimately create more value in the land that we own.

Companies are very focused on creating a sustainable food chain, and as they are sourcing those resources, they are going to be willing to pay for making sure those food sources are sustainable. But if you are Kellogg's or Nestlé, you need to source in scale, so they need to create a balancing act of sustainability with cost. By encouraging farmers to be more sustainable and through systems like Leading Harvest, we are aligned with the farmers and aligned with companies creating incentives for farmers to enhance sustainability practices.



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UBS ASSET MANAGEMENT

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