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A Perspective on Ag 2.0 Silicon Valley

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BY JASON BRADFORD | 2010 MARCH 27

I attended the Agriculture 2.0 Silicon Valley conference co-hosted by New Seed Advisors, U.S. Venture Partners and Spin Farming. This is the second such conference, the first being in New York City, where Farmland LP was one of eight presenters. This time we were a sponsor. The agenda was much larger and diverse than in New York, and given the level of interest I expect more events are being planned. The following are some notes and thoughts that reflect the highlights of the day for me. There were parallel sessions going on for most of the day, including a lot about Aquaculture, but I stuck with the terrestrial sessions and stayed in the Ballroom the whole time.

The event organizers did a nice job explaining the purpose of the conference. They all believe that sustainable agriculture needs to move from being dependent upon committed activists and grants to become the new normal via business development and solid financial backing.

The New Normal

The opening session drove this point home with the title “Sustainable Agriculture: The New Normal.” I really appreciated the perspective of the panel members. Michael Dimock of Roots of Change explained that farms would become sustainable only by mimicking natural structures and working with ecological processes.

Scott Exo of Food Alliance demonstrated how the public was sensitive to greenwashing and therefore why farms needed third party certification of their practices. He gave great examples of farmers making better income by using fewer chemicals and improving their soils because their products were “uncommodified” and could command a premium.

Jeff Dlott of Sure Harvest spoke of the technologies that make farming far more resource efficient. He also made a fantastic point: Investment needs to happen at the farm-level more than elsewhere in the food chain, such as up at the retail end. The farm is where the impacts on land, water, air and soil resources are happening and we need to reward good practices there. He chided investors for traditionally ignoring farmers and not understanding how innovative and hardworking they can be. I think he had another great point: As conventional farmers adopt more and more techniques from the organic and sustainably-minded farmers there will be many grey areas and difficulty classifying farms into categories. This connected back to Scott Exo’s talk (and was repeated at the end of the day by Dr. Linkenhoker) regarding certification. Perhaps farm certification can become more like LEED certification where different criteria are measured and reported on, such as pesticide and fertilizer pollution, energy use and greenhouse gas emissions, worker fairness, biodiversity protection, etc. Most of the farm technologies discussed during the day permit more efficient use of resources, which are interesting and potentially very useful but not the whole story (after all, you can efficiently dig yourself a grave, and see Jevons Paradox). When I questioned the panel it was clear they understood that sustainability is not just efficiency. Jeff and Michael revealed an appreciation of agroecology and even mentioned the work of The Land Institute as an example of what would truly be sustainable. Perhaps being in Silicon Valley there was a tendency to speak to the audience about the kind of business opportunities that are patentable. But rather than glorify technology I would have liked more discussion of the wisdom of diversified land-use rotation, and in this vein an audience member suggested attending the Eco Farm conference.

Investors in the audience asked whether sustainable practices were profitable and were met with example after example of higher profits by unconventional farmers, such as Polyface Farms. For anybody who cares to look at the actual data it is obvious that farms are more profitable when they don’t by GMO seeds, sell organic, or differentiate to avoid commodity markets. Those who believe otherwise have swallowed the marketing line from big agribusiness.

The Big Picture

Tom Tomich of UC Davis’ Sustainable Agriculture program gave a very thorough overview of global agriculture and how technologies (and energy exploitation) have evolved to where one U.S. farmer can feed 144 people.

He got across the point that food production has a greater impact on the planet than any other activity when measured by landscape domination, water use and contamination, energy use and greenhouse gas emissions. I was disappointed that he repeated the notion that we need to double food production by 2050 to feed the 9 billion people on the planet by then (he wasn't the only one to do so). Somebody in the audience explained that we already produce enough food to feed 9 billion people, however this production is unevenly distributed (see the [FAO database](#) and [Stuffed and Starved](#)). In the U.S., most grain production goes to animal feed, plus a third of the corn crop to ethanol. The trouble is certainly not supply, but growing fuel and meat demand that can price the poor out of the market for necessities.

He ended by listing a number of wild cards that threaten future growth in production, especially water scarcity, fossil fuel costs and climate change. We have an enormous range of policy choices that make it impossible to predict whether we will pass through these bottle necks intact. He emphasized this as good news: We have the potential to choose wisely.

Investor Perspectives

Next up was a panel of folks who have actually invested in sustainably-minded food and agriculture businesses. A couple of the represented funds, Mindful Investors and RSF Social Finance, were mission oriented and said that the typical venture mindset where you get 10x returns in five years doesn't necessarily work in this investment class, and perhaps not in this economic environment.

Jim Schultz of Open Prairie Ventures was a great addition to the panel as he resides in the Midwest and some of his best friends are in conventional agribusiness. He did indicate that they were open to change and sensitive to the environment (as their families live among the pesticide and fertilizer pollution) but driven by profit (I wish he would have mentioned how much the Farm Bill subsidizes the status quo). He thought CAFOs would move out of the country as the U.S. cracked down on pollution, and I presume doesn't think transportation costs would ever increase enough to make that uneconomical.

All I remember from Amol Deshpande of Kleiner Perkins was his notion that we might be better off making *in vitro* meat. Perhaps, but I also see the ecosystem benefits of pasture. And a pastured livestock model emphasizing dairy and eggs that gets meat as a byproduct is a far cry from the horrors of grain-fed CAFOs. Of course the highlight of this session was when Don Shaffer of RSF Social Finance discussed Farmland LP when asked about the best investment opportunities he was seeing.

As I expected, the lunch was fantastic and I lingered a couple of hours over food and meeting very passionate, smart and thought-provoking people.

Making a Pitch

Afternoon sessions were opportunities for businesses to make a pitch to investors, either for start-up capital or expansion. A couple stuck out for me.

I was impressed by [Soil & Topography Information](#), which is a service that generates farm base maps allowing more precise adjustments for inputs such as water and lime. This is a next generation precision ag product that gives statistically significant information (not simple grid sampling) and profiles the soil to six feet as opposed to just the top six inches. The target market for this service are intensively managed farms with per acre inputs in the range of \$2000, such as vegetable, vineyard, orchard and nursery operations. These farms are more likely to view the ca. \$130 per acre cost as potentially generating significant savings within a season.

[Marrone Bio Innovations](#) makes biopesticides that are used similarly to artificial chemical agents but with complete biodegradability and high target specificity. Their cost and time to market gives them a huge advantage over artificial chemical pesticides. Although their products are all approved for organic use, most of their sales are to non-organic farmers because (as the CEO told me at lunch) the organic farmers tend to find ways other than spraying to control pests and weeds.

The Big Boys

A "Big Business on Sustainable Agriculture" panel included representatives from Dow, Lamb Weston, JR Simplot and Toro. These folks generally confused efficiency with sustainability and described how they used less water, energy, land and fertilizer to produce higher yields compared to the past. They were also clear that

progress was incremental in their companies; they were not big risk takers but would adopt clearly beneficial practices and technologies as they mature.

It was a bit amusing to have the Dow representative equate current GMO technologies with sustainable agriculture, apparently totally unaware that conventional farmers using GMO crops also use more pesticides (on average) and have lower profit margins than those conventional farmers avoiding GMOs.

The Next Decade

The final talk of the day was also my favorite. Brie Ann Linkenhoker of the Global Business Network looked at current trends and ten years forward to ask what agriculture would be like in 2020. Her framework was "STEEP" for Social, Technological, Economic, Environmental and Political factors and I felt she was generally on the mark in her assessments.

She gave amazing statistics about what a small change in meat consumption in India and China does to grain demand, and I really had some doubts about whether those could be met, especially if we look ahead 20 years. After all, human demands are ultimately subservient to natural resource availability.

I am hoping to get a copy of her talk for the statistics of public interest in various forms of certified food products. Even during the current big recession organic foods have staying power and she believes this is not a fad but a significant change in public sentiment.

I was thrilled to hear her view on genetics. Like her, I agree the current crop of GMOs are interesting and innovative, but come with too much baggage and will ultimately be overshadowed by newer and less controversial methods. Genomics and marker assisted breeding is likely the wave of the future and she listed a great number of major crops that will soon benefit from these techniques.

Also notable was her mention of the European Union's rules regarding the use of pesticides. Proof of safety will be on the manufacturer, not the regulator. She says this promises to make it much more costly and difficult for conventional pesticides to sell in Europe with spill over effects globally. This will make organic and integrated pest management even more competitive.

The Next Generation

Lastly, I want to comment on a theme that arose a few times, independently, in conversation. I heard stories of inter-generational transfer of farm ownership or management, and each one resulted in the adoption of more environmentally sound practices and higher profits. The 30 and 40 somethings slowing replacing their parent's generation were raised in a new paradigm. They grew up after *Silent Spring* and have watched relatives die of cancer or have children with birth defects. They are more socially gregarious, less suspicious of the new, and interested in a form of progress not defined by "more and bigger" but by "healthy and balanced."

This is another reason why I am very proud of Farmland LP. We give those ready to take charge and make necessary changes the opportunity to do so. I can think of no other area where investment is more important and timely, and want to thank the organizers of Ag 2.0 for a great conference.