



At Terra Alpha, we believe that a portfolio of the world's most fundamentally strong, attractively valued, and environmentally productive companies will provide our investors with better long-term risk-adjusted returns. We believe that asset owners also want their investments to reflect their shared interest in a better environment for all. We believe that our investment process and our advocacy work will drive the global economy to be more aligned with the world's finite natural systems to help create a better world.

Terra Alpha Investments Newsletter 1Q 2017

Dear Investors and Friends,

In our year-end newsletter, we shared our thoughts about the implications of the change in administration in the US. We continue to see little negative impact on our portfolio companies from anticipated US Federal policy changes, though we expect some actions that could alter company strategies or policies. We will be watching how European and Asian leaders respond to US actions on environmental policies. To date, we have seen no reactions that give us concern regarding our investment approach. Encouragingly, we have seen an increase in interest in our firm and our unique advocacy investing mission. And, the fund's financial and environmental returns continue to be very strong thus far in 2017.

In this newsletter we share insights about:

- our global travels in the first quarter
- our recently released Ideal Disclosure framework for corporate reporting on environmental data and information
- where we have presented/advocated for Environmental Productivity this quarter
- the expansion of our team and a spotlight on our co-founder Andrew Geller

Travel Reflections

World Economic Forum, Davos 2017 - thoughts from our CIO

Tim Dunn, CIO, who attended the World Economic Forum in Davos in January as an accompanying guest of one of our Advisory Board members, Ellen Stofan.

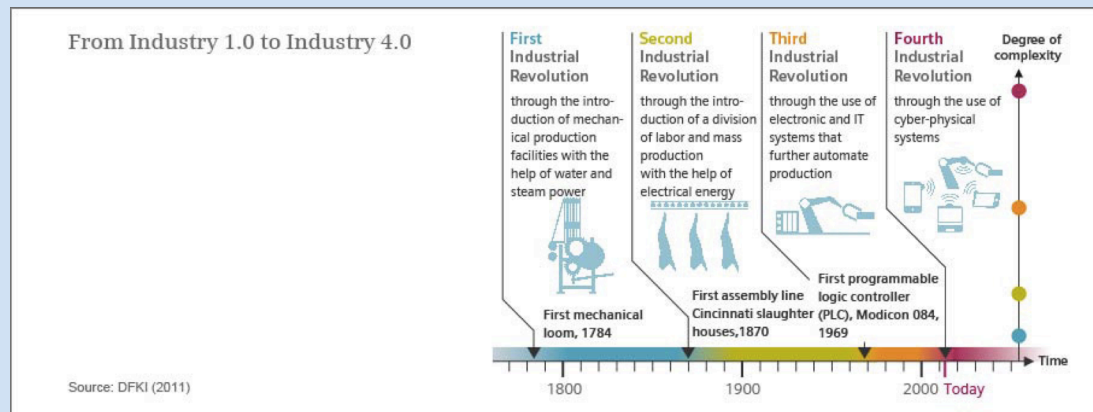
Some of his brief takeaways that are relevant to Terra Alpha Investments' work follow:

Climate Change and Energy Markets – There were many encouraging sessions about policy, academic, and corporate progress on efforts to stop or mitigate climate change, but the challenges remain immense. The Trump administration cannot stop global momentum, though it is likely to significantly slow US efforts, and recent actions underline this point.

- A sobering session on Global Energy markets reminded me of the continued influence/importance of the fossil fuel industry, despite our decarbonizing economy.
- China will spend \$360B on renewable energy investments in the next 10 years and Saudi Arabia will spend \$50B by 2030 on renewables, but globally \$460B will be spent on oil and gas capacity in 2017.

The Saudi Arabian Oil Minister iterated that they expect to be selling their oil globally for “generations” and anticipate selling “every molecule” of oil in their reserves.

- International Energy Agency continues to project growing oil and gas demand in 2017 and beyond.
- Carbon pricing (or as the Canadian Environmental Minister suggests we call it, “Carbon Pollution Pricing”): There is real progress with more companies using internal pricing of \$20-50/ton. Canada is phasing in a price of \$10/ton rising to \$50. Notably, economists Lord Stern and Joe Stiglitz are working on a report due in April on a recommended price for policymakers around the world.



Fourth Industrial Revolution (4IR) – This refers to the combination of technologies that are likely to significantly alter our economic system in the years ahead: Robotics, Artificial Intelligence (AI), 4D printing, Virtual Reality (VR), Internet of Things (IoT), Quantum Computing, Genomics, etc. There was a raging debate on whether this 4IR is good or bad.

- Generally tech oriented folks say yes, economists and academics are very mixed, politicians and policy-makers are more concerned than excited.
- I left much more intrigued by the implications of Blockchain on a variety of sectors due to its ability to assure data integrity (think medical records) and make transfer of all sorts of things more secure (currency, data, etc).
- I am also very interested in the ability of handheld devices and AI to improve the access to more accurate medical diagnosis globally.
- There is no doubt that the impacts of the workforce are very large and no one has a solution to the dislocations that are likely to follow. (Note: already there are currently 200 million unemployed people globally today.)

Water/Oceans – There has been major progress on building a global infrastructure to protect oceans, in part thanks to the UN Sustainability Development Goal (SDG) #14 with a focus on illegal fishing, pollution (plastics and fertilizer run-off), acidification, and governance. Seafood exports are \$148 billion globally and 50% of all seafood sold is from aquaculture vs. from catch. Certification (MSC) is growing and getting more robust thanks to technology. Aquaculture seems to be moving into a better place with little negative commentary from NGOs.

Traditionally, too much water has been used in production processes because it was always the cheapest way to move, clean, and cool down things. With technology improvements (cheaper smart sensors, improved data delivery, and quantum computing analysis of production processes) there is more ability to efficiently manage this finite resource. Increasing disclosure of water use is leading to more awareness of risks and opportunities.

Health care - Globally we spend almost all of healthcare funds once people are sick rather than to enhance healthy lives. Government funding is too focused on Communicable Disease (e.g., HIV, Ebola) eradication and not enough on the major Non-Communicable Diseases (e.g. Heart Disease, Diabetes, Malaria) The global population has gone from a pyramid based on income, to a diamond. The proliferation of healthcare apps for developing countries by start-ups and NGOs is overwhelming for local providers.

Humanitarian Challenges - Today there are 65 million forcibly displaced people globally – the highest ever. 51% are children. We need growing attention to providing education to this group to avoid a “lost generation” (Highlighted was the [Clooney Foundation](#) effort in Lebanon) Short-termism in Corporate Decision-Making - according to a McKinsey & Co study, it has cost the world five million jobs, \$1.3T in asset values, and 1% of GDP.

Ho Chi Min City, Vietnam – Research Advisor reflections

Research Advisor Jill Baker attended the Spring Forum of the Asia Business Council in Ho Chi Min City, Vietnam

Vietnam is an amazing place. It is remarkable to think of it in terms of its history of long struggle of wars over the centuries with the Chinese, the French, the Americans and of course, their own civil war. Ho Chi Min City (HCMC) is rated the second most dynamic city in the world by the JLL City Momentum index, with impressive human capital and big infrastructure projects. In late February, I attended a gathering of CEOs in HCMC, during which we met with high government officials both at the city and country level.



Despite serious pollution issues, its leaders are choosing to emphasize coal-fired power over cleaner alternatives. The vitally important agricultural productivity of the Mekong Delta is at risk from rising sea level, as well, as I have written for [Forbes.com](#). In looking at business “disruptors”, a panel featured some of the hot young CEOs that are changing Vietnam’s

business landscape. They discussed their businesses, including the largest co-working space in Vietnam; a highly successful electronic marketplace for digital mobile devices that is benefiting from fast growth in fintech; a 13-year-old venture capital firm whose founder shared insights into the evolving trends in access to capital for startups, and the equivalent of Vietnam's Amazon or Alibaba. Each spoke of the challenges they face, including external competition, regulation and the challenge of maintaining customer loyalty while in a steep growth trajectory.

There was a panel on Decarbonization in ASEAN with representatives of two utilities with contrasting stories, and a banker. One of the utilities was an old-line carbon-fired utility, highly dependent on coal, struggling to fuel switch to natural gas. While the Paris Climate Accord and country-level pledges have provided its regulators much-needed policy clarity, making a switch is challenging. The other utility hailed from a country that is ravaged by typhoons on a regular basis. The CEO's powerpoint included about fifty slides in rapid succession showing the country's devastation. His country, he said, does not have the luxury of time. His utility vowed not to invest in coal energy and relied solely on natural gas, geothermal, solar and wind.

A former CEO of a lender whose loan book is skewed toward coal and carbon-intensive industry characterized discussions of lending to carbon-intensive industries as being "emotionally driven", citing pressure from outside forces like social media forcing executives to think differently. He was well versed in the growing dialog around the need to be aware of climate risk in bank asset portfolios.

"Ideal Disclosure" of Environmental Productivity Metrics by Companies

This quarter we developed and released our Ideal Disclosure framework to **aid our work advocating to companies and investment professionals about EP data and information disclosure**. This table lays out what we would expect from our portfolio companies regarding disclosure data for their GHG emissions, Water, and Waste. We believe that the investment community, as a whole, will be increasingly demanding environmental data information; this document serves as a template for disclosure of environmental data going forward. You will see that it progresses through an **evolution of disclosure stages until it is what we would consider "Best-in-Class," or, "Ideal"**.

While many companies are progressing in their disclosure, no current portfolio company meets our Best-in-Class criteria. We hope that by providing an ideal guideline, it will show companies what type of data we believe is material to the investment process.

<u>TAI's Expectations for Corporate Disclosure of Environmental Data for an Investor</u>	<u>Current Minimum Base Requirement</u>	<u>Preferred Base Requirement</u>	<u>Expected Disclosure</u>	<u>Best-in- Class Future Expectation</u>
Publicly disclose the data	x	x	x	x
% of operations included in disclosure			x	x
All operations/locations are included in the data numbers				x
Sustainability reporting			x	
Integrated reporting				x
Emissions: GHG Scopes 1/2 (tonnes CO2e)	x	x	x	x
Scope 3, explained				x
Targets for reduction			x	x
Disclose progress toward targets			x	x
Targets are all science-based (GHG)				x
Water extracted and purchased (cubic meters)		x	x	x
Water audit/assessment			x	x
Targets for reduction			x	x
Disclose progress toward targets			x	x
Waste generated -recycled, non/hazardous (tonnes)		x	x	x
Targets for reduction			x	x
Disclose progress toward targets			x	x
Identify risks from climate change scenarios (per Financial Standards Board Task Force on Climate-related Financial Disclosures)				x
Environmental data assured			x	
Environmental data audited				x

Advocacy Update

In our advocacy for widespread Environmental Productivity (EP) practices, we encourage shifts in our current capital markets that give EP a better opportunity to gain traction. With that in mind, Terra Alpha is supportive of efforts to increase “patient capital,” i.e., the perspective of **investing for long-term returns**, as a principle for both businesses and for investors.

Environmentally Productive technologies and processes often require longer term pay back, for one. A conference we participated in was focused on just this shift - moving away from “short-termism” toward a long-term return horizon. It was the invitation-only inaugural CEO Force for Good, CECF CEO Investor Forum. 58 corporate CEOs were present including PG&E, Eileen Fisher, Welltower, Becton Dickinson & Co., Humana, Blackrock, Vanguard, Citi, IBM, Nielsen, TD Ameritrade, and others, amidst investment firms and investment advisors. The theme was to shine light on how investing in Environmental, Social, and Governance (ESG) projects reap long-term benefits and enhance the business. There was no consensus on where the change needed to occur in the capital markets - a bit of “hot potato” ensued when the topic turned to determining where the change of focus needed to come from - corporate CEOs were quick to identify investment managers’ focus on short-term return, quarterly guidance by

companies was cited as culpable, annual bonus structures for Analysts, as well. As mentioned earlier in Tim's notes from Davos, McKinsey recently published a report on the lost economic growth as a result of a short-term perspective in our capital markets, and the topic is gaining attention.

We are increasingly asked to speak about our investment approach to business leaders and investors. This quarter we presented at the **Climate Leadership Conference** in Chicago about climate risk disclosure; we moderated a panel at the **Ethical Corporation Responsible Business Summit** NY conference with Farooq Kathwari, Chairman of Ethan Allen Global and Joyce Haboucha of Rockefeller & Co about **how investors can work with companies on long-term thinking**; and we had an engaging conference call with a group of graduate students at **UCSB's Environmental Science program** who wanted to understand our investment process.

We always take advantage of opportunities to learn from and share ideas with experts in related fields. Of note, we were participants at **Duke University's Fuqua School of Business Sustainable Business and Social Impact** conference, **World Resources Institute's Global Forest Watch** workshop, as well as the **CommonFund Forum**, the **Innovation Forum's Sustainable Agriculture**, and **Forestry conferences**, and **Columbia University's Energy Forum**.

Terra Alpha Team News

In some ways, it is hard to believe that a number of Terra Alpha team members will celebrate their two-year anniversaries in the coming months. As we continue to grow our investor base and look ahead to further growth, we have decided to add a new member of the team to help manage this aspect of the business. Nikki Carenza joined TAI in February as an intern who will be primarily focused on investor development and communications. She is a recent graduate of Southern Methodist University where she received a BBA in Finance and a BA in Environmental Studies.

Team Member Focus - Andrew Geller



Andrew is a founding partner at Terra Alpha Investments LLC, and has been a central part of Terra Alpha Fund's investment team since its inception. Andrew provides direction and guidance for our investment process, and is the compliance lead for the fund, as well. After graduating from The Pennsylvania State University, Andrew began his 30+ year investment career as an equity analyst. Andrew and Tim met when they were both analysts at PNC in Philadelphia many years ago. He spent more than a decade as an analyst covering a wide variety of industries, yet the bulk of his career was working on the sell-side, as part of institutional equity sales at Oppenheimer & Co. He shared his market insights with large mutual funds, banks and other money managers. His experience in equity analysis has proved immensely valuable to the fundamental analysis of our portfolio companies.

Andrew currently lives and works in Los Angeles with his wife, Kate, a singer, teacher and music therapist. Andrew is a passionate cook and has had stints in the kitchens of some of the most exceptional restaurants throughout the world. His chocolate cake is famous throughout our office. Andrew's guidance is crucial to the fund and has been an integral part of Terra Alpha Investments LLC's growth.

In our increasingly natural resource-constrained world, TAI will continue advocating for broader adoption of our process, increased corporate attention to resource-use intensity, and demonstrate it through better investment returns in the most environmentally productive companies globally.

Thank you for your interest in and support of our work.

Best regards,

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