



Public Comments
Climate Change Disclosures
Jaime Lizárraga, SEC Chair
c/o Kristina Wyatt, Sr. Special Counsel
Securities and Exchange Commission
100 F. Street, NE
Washington, DC 20549

Re: US SEC Climate Change Disclosure Questionnaire
Phenological Phases, Climate Change and Finance – 7.15.22
<https://www.sec.gov/news/public-statement/lee-climate-change-disclosures>

Dear Colleagues at the Securities and Exchange Commission (“SEC”):

Below are answered questions from the SEC’s above-referenced questionnaire list which are most relevant to both the residing industry and the technological strengths of Agtools Inc. (“Agtools”). Agtools feels very strongly that our data and analytics-focused business can greatly enhance the Commission’s disclosure data discovery and listing capabilities. Hence, we also seek visibility and partnerships with the industrial basin reliant upon the SEC for security, transparency, guidance and punishment, depending upon specific cases.

2.a. What information related to climate risks can be quantified and measured?

Agtools, Inc.

In our respective industries of Agriculture and Food Services, climate change regularly affects plant phenology, which, in turn, will affect all aspects of plant health, growth and development for essentially all farming crops. Briefly, phenology is the study of cyclic and seasonal natural phenomena, especially in relation to climate, plant and animal life. Acutely, phenology involves the study of the stages in the biological life cycle of plants and how they are influenced by habitat, as well as seasonal and interannual variations in climate. For example, pineapples retain 150 phenological stages in their life cycle.

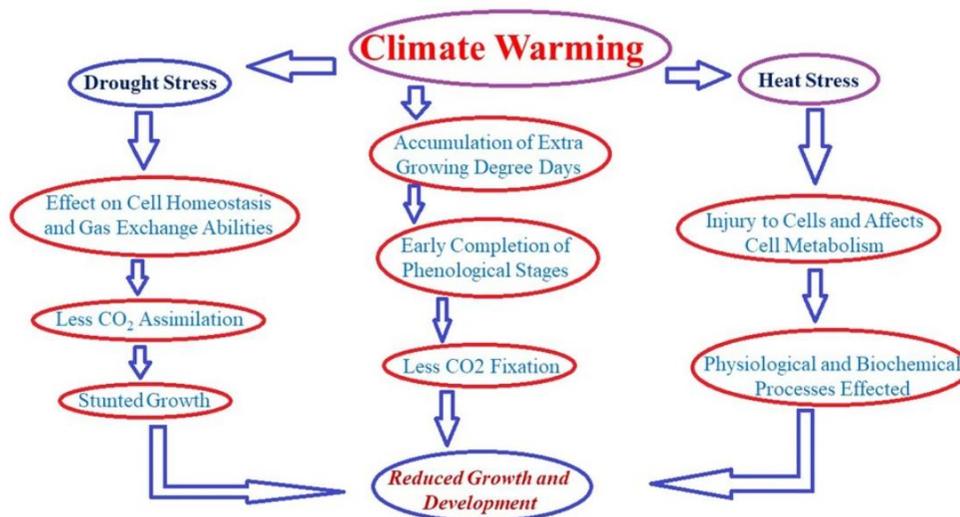
Defining and accounting for varying stages of phenological plant growth, then weighing them rigorously against the varying effects of weather and other climate-related conditions, will credibly enable the incorporation of inputs into quantifying with detail the measures of gain and loss for investors into the Agriculture sector. Such an undertaking would also benefit ongoing sector constituents and operators such as growers, food processors, distributors, retailers and financial players such as insurers and even farm lenders.

The sensitivity of varieties to climate can already be assessed: by modeling the climate sensitivity of each phenological stage during the plant life cycle, it is possible to verify the plant compatibility to present and future climate in any production area, real or hypothetical.

Each phenological stage of a particular plant has unique needs and sensitivities. Each plant's risks must be considered according to its phenological stages and their specific durations. For instance, a plant's typical vine is not impacted by winter frosts when the crop is at a resistant stage of development, until its buds are hatching, and the leaves are then developing. Such a succession of biological development stages with varying sensitivities applies essentially to all row and specialty or perishable crops, for which Agtools Inc. specializes in providing Big Data analytics to the tune of over 1 billion data points synthesizing per second.

2.b. What quantified and measured information or metrics should be disclosed because it may be material to an investment or voting decision?

As intimated above, changes in climate, particularly temperature increases and diminished rainfall, can greatly affect plant phenology. At core, then, the disclosure statements in question should thus indicate that, for investments in large Agriculture enterprises, investors should be informed of how anticipated changes in climate will affect plant phenology and crop yields in the future.



A simple presentation of climate warming effects on growth and development of crop plants.

Source: Nature.com

4. What are the advantages and disadvantages of establishing different climate change reporting standards for different industries, such as the financial sector, oil and gas, transportation, etc.? How should any such industry-focused standards be developed and implemented?

Regarding our industry of Agriculture, Agtools foresees that there cannot possibly be a single disclosure standard for industries as disparate as Oil and Gas, Transportation, Agriculture, Steel Manufacturing, Construction, Health Care, Technology and Big Data. Climate change impacts each of these industries in dramatically different ways. Therefore, standards should be developed by major industry. For the Agriculture sector, for example, the standard should be rooted in the disclosure of information about foreseeable climate changes that will have a material impact on the future of plant phenology and crop yields in geographic areas of interest to investors and promoters.

Further, and with regard to Agtools' existing industries of Agriculture and food provision, the advantages of initiating thorough yet flexible and dynamic climate change reporting standards can essentially be elevated to matters involving literally life and death. Development and implementation of said standards must, intuitively, rely upon the uninterrupted, secure, accurate and rapid sort of data access that carries the potential for expedited policy shifts as well.

The goal is to evaluate and reduce agronomic risks related to climate change, which in turn will benefit investors or other financial stakeholders in our domain. In order to do so, the sensitivity of each phenological stage to local climate can be studied together with farming practices (I.E., sowing dates, irrigation, soil protection...). Current practices can then be tested to assess their suitability and effectiveness to future climate conditions. A key factor to such risk-mitigating actions then involves the quality and quantity of the data and contextualized analytics provided equally to growers, food supply chain participants, and financial hedgers, insurers and underwriters. The anticipated advantages to establishing climate change reporting standards vis-à-vis competent capture of scientific, phenological crop data thus cannot be understated, and in turn eclipse any perceived disadvantages, even of simply an academic variety.

From fruit trees to vineyards large and small, many types of crops have a multi-decade lifecycle and will be significantly influenced by climate change factors. Industry-focused reporting standards to be developed must therefore ensure foremost that the farming strategies (I.E., production types, seed and commodity installations) and practices (pruning type, density, irrigation practices) chosen today will be compatible with future climate conditions and lifecycle of the crops in question.

6. How should any disclosure requirements be updated, improved, augmented, or otherwise changed over time? Should the Commission itself carry out these tasks, or should it adopt or identify criteria for identifying other organization(s) to do so? If the latter, what organization(s) should be responsible for doing so, and what role should the Commission play in governance or funding?

Because Agtools believes that industry disclosure standards will, in fact, need to be periodically evaluated and updated, we anticipate that the best way to do so is for the SEC to ultimately take the lead by periodically asking stakeholders (I.E., industry associations, research and development-focused universities, and all other interested parties) in each industry for input on changes and/or upgrades needed for the disclosure standard for each industry. The SEC could do so either every given fixed number of years – say, every five years - or whenever there was sufficient demand from industry stakeholders to undertake a review. Ultimately, the SEC should be responsible for maintaining and updating the disclosure standards for each industry.

In focusing again on our industry of Agriculture and food services, the challenge for the SEC would be to incorporate accurate, timely and secure data inputs on how climate change affects the phenological phases of plant growth and how changes in the patterns of plant growth would affect the nature of public offerings in the agricultural arena.

Climate risks for crops are intricately linked to their phenological stages, their respective sensitivity and their dynamics. In the context of climate change, it is essential to take these dynamics and sensitivities into account to make it a credible factor of resilience beyond the dimensions of productivity or quality. Actors on the field can choose the most suitable variety: the one whose phenological stages will avoid risk periods and / or whose sensitivity will be lower than the extreme climate events in the region.

Climate warming is threatening global food security due to consequences such as heat, drought, and salinity stresses. It has, for instance, in the past shown considerable impact on cereal production by shortening crop phenology. With climate warming, all phenological events occurred earlier and resulting phenological phases were shortened in various regions and countries across the globe, as a result of which plants got less time to assimilate CO₂, and this ultimately resulted in yield reduction. Naturally, this negatively trickles down to yield and returns expectations of investors of, say, companies such as Kellogg's, General Mills, Nestle, Frito-Lay, Ingredion and others.

Wider spectrum climate change adaptation options such as change in cropping patterns, use of early maturity and less water-consuming crop varieties, availability of stress tolerant crop varieties, modification in sowing date, crop insurance, implementation of location specific technologies (I.E. satellites, drones, sensors),

utilization of Big Data and curated analytics technology, intercropping, mixed cropping, socioeconomic and institutional interventions, crop modeling, whole farm modeling, integrated crop-livestock management and plantation of trees around the field have been researched and recommended to mitigate the impact of climate warming across Agriculture. Subsequent SEC disclosure requirements, in turn, then should ideally take all said factors into routine consideration and be compiled, augmented, improved and updated through direct private sector assistance. The criteria for identifying such outside private parties overlap with said parties' data streams, in fact. Agtools, Inc. is the leading candidate for such duties with, and on behalf of, the SEC, in consistently providing critically sanctified data which will best inform disclosure requirements for companies – public or private, for that matter – across food and Agriculture.

Below are succinct diagrams illustrating Agtools Inc.'s existing internal data and analytics accumulation, contextualization, digestion and provision I.P. protocols, as well as the sheer scope of industries and major parties who benefit from our products and services. The firm would be proud to rigorously adapt its existing – and rapidly evolving, via Machine Learning and Artificial Intelligence - capabilities to the needs and tasks of the SEC in best informing investors and other constituents regarding said disclosure criteria as they pertain to food and Agriculture.

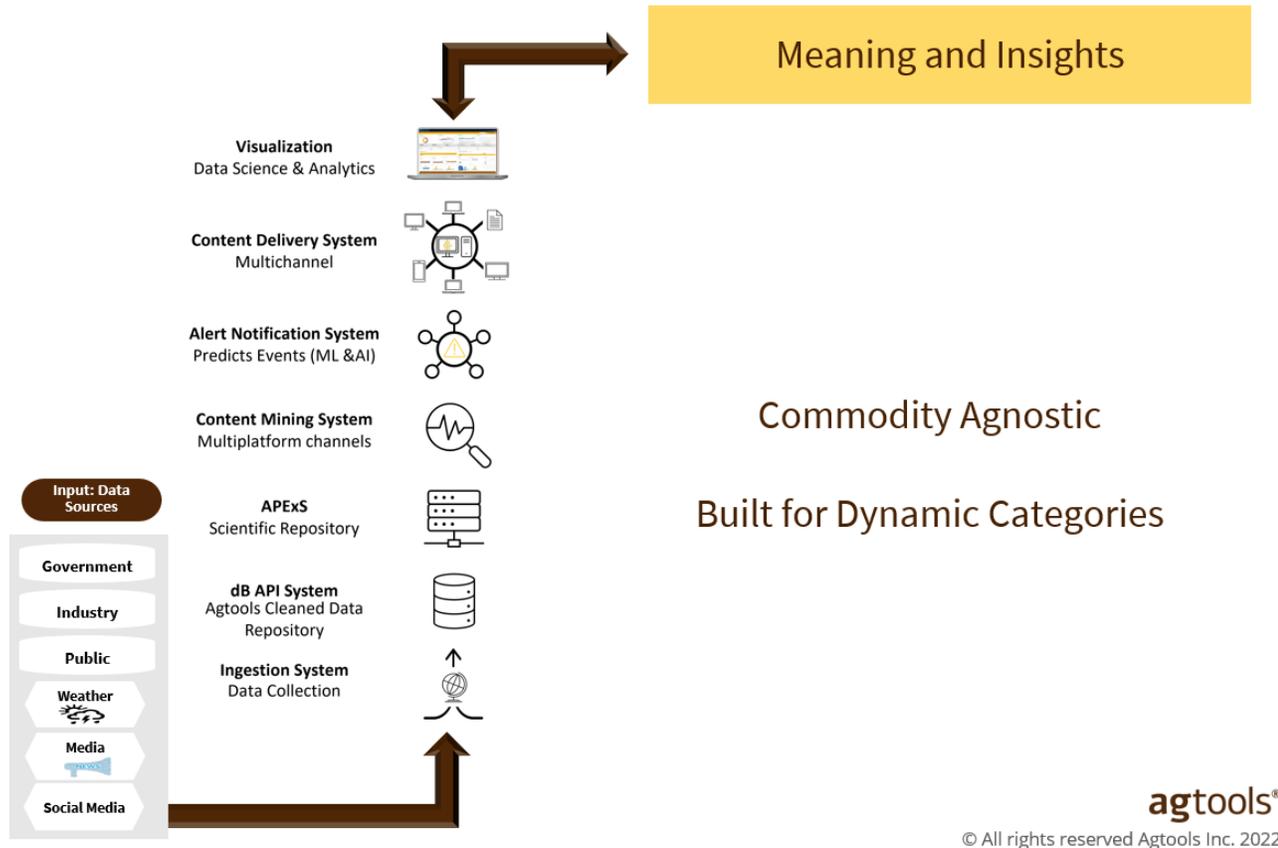


Figure 2

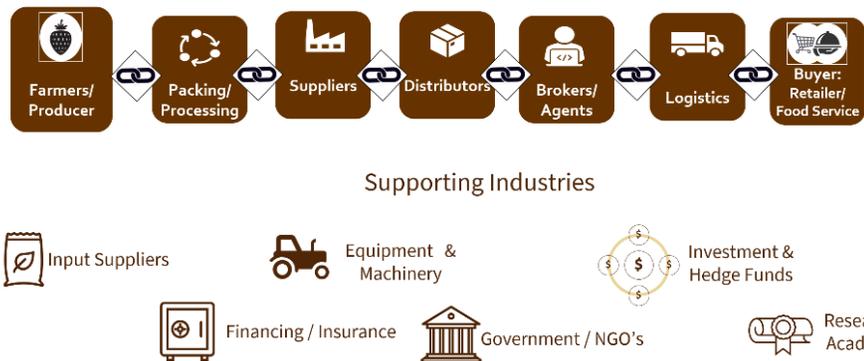


Figure 3

Additionally, and to serve as a pertinent example of our data linking climate, phenology and time factors for the sake of augmenting the best in disclosure criteria within the Agricultural space, Figure 4 below displays a typical daily deployment of our contextualized analysis. Here, we focus on the rapid shifts in recent weather patterns affecting potato crops, where the vital given context involves the optimal range of growth temperatures being between 45 and 65 Fahrenheit. I.E., this perishable, consumable crop – so important to food supply chains globally – should ideally grow no lower than 45, and no higher than 65, degrees. Yet as the sampled graphic illustrates, the ‘floor’ has risen rapidly over just the past two years alone across sampled milieus weighed across farmers, and in a pattern that strongly hints at Global Warming’s effects carrying said optimal growing temperatures eventually past limits of viably harvestable conditions.

Agtools curates such data in a manner which provides planning assistance to growers, executives, processors, distributors and retailers. Regarding SEC Climate Change Disclosure imperatives toward investors in Agricultural endeavors, said data would be customized to fit regulatory parameters while then directly benefiting, say, parties weighing investment allocations to a Kraft Heinz Co., or a PepsiCo., considering its Frito-Lay division, or even a Wendy’s Co., given that it is the only fast food chain now offering its customers baked potatoes in addition to French fries.

Agtools will then apply multivariate climate and other analytical factors *to all phenological phases* for the hundreds of specialty crops we work with. In this way, rigorous, granular, timely data points will directly assist inevitable disclosure language resulting for our industry, its listed equities and other investable assets.

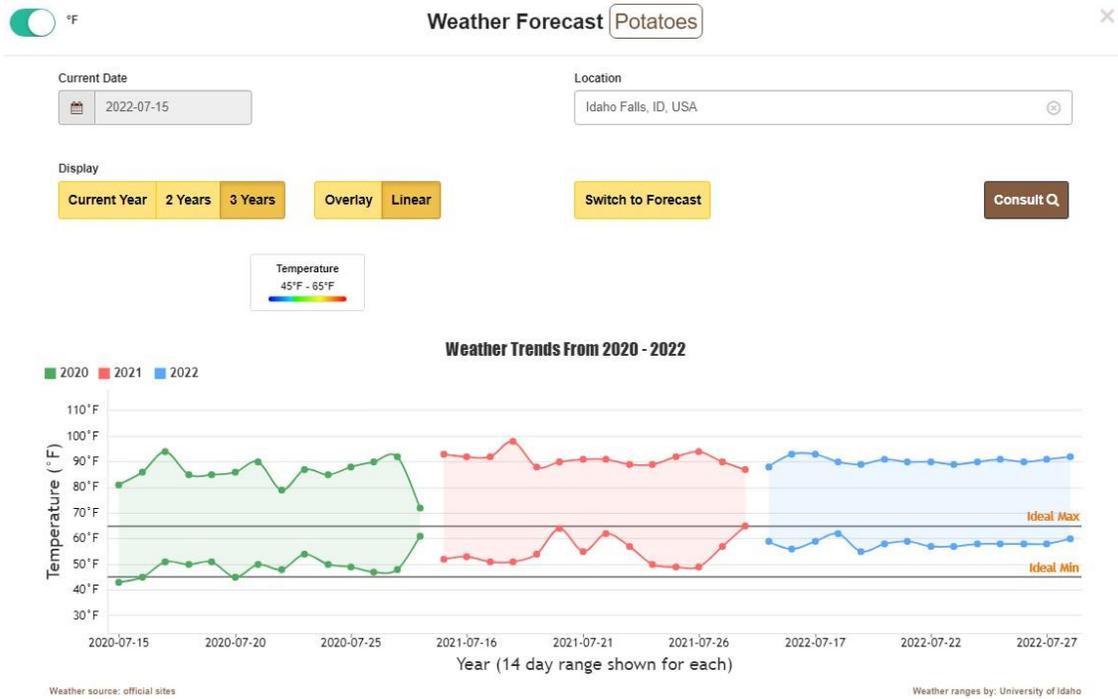


Figure 4

Confidentiality:

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