

House Agriculture Committee

Full Committee Hearing

Hearing Title: 21st Century Food Systems: Controlled Environment Agriculture's Role in Protecting Domestic Food Supply Chains and Infrastructure

Witness: Edward Verbakel, CEO, VB Greenhouses & Co-Founder Atrium Agri Group

Good morning to you all, and thank you for having me. My name is Edward Verbakel and I am CEO of VB Greenhouse Projects out of The Netherlands, and I am also one of the founders of the Atrium Agri Group, which is a multi-scope Infrastructure as a Service (IaaS) provider, of Controlled Environment Agriculture (CEA) developments. The group is comprised of some of the leading companies in the CEA services space. Regrettably I cannot attend in-person today, but thanks to technology, I can still participate in this historic moment. I refer to this convening as historic, because with almost 30 years of experience designing and building CEA facilities in countries all around the world, this is the first time I have witnessed government and private sectors coming together in a proactive manner to coordinate efforts to develop this type of infrastructure. My father was one of the very first from our country to realize Dutch greenhouse technology right here in the USA, since 1971 on Long Island NY. For me it is an honor to provide you with relevant information. For this I commend you all. What is more common, is state-driven projects in countries much like my own where necessity demanded a solution, and in other instances where farmers looking to innovate, became early adopters because of the contrasting benefits to their conventional practices. In either scenario, what is constant is the role my firm and those like us have, and continue to play in providing the development and construction expertise for all types of projects in all climatic conditions. We can provide the best climate for growth.

I have had the good fortune to see first hand the impact of this type of modern agriculture on countries and their economies. As we now find ourselves, a planet acutely focused on resource management and climate adaptation, I am certain that what I will share with you today will resonate and that the initiative taken thus far to advance this very important conversation, will culminate in your collective understanding and impetus to act to enable all participants in the fresh produce supply chain to work cooperatively to deliver a 21st Century Food System capable of meeting the demands of today, and tomorrow. I would be remiss not to speak to the skeptics towards the CEA segment, and say that the facts speak for themselves in all areas of consideration, namely Viability, Productivity and Sustainability.

1. Viability - the idea that CEA is a nascent industry segment is inaccurate. Producers all over the world have for many years (dating back to the 1970's) utilized varying levels of greenhouse structures to protect and deliver high-risk crops and delicate horticultural products. As with all industries, technology has enabled innovation and growth in all areas of greenhouse production. Additionally, the true benefit has come from the collective growth in widely varying geographies that have allowed for deeper understanding of the environment(s) and how to adapt structures and even products to optimize across all processes.

2. Productivity - when compared with other forms of conventional agriculture, what you will see is clear outperformance in all areas by CEA. These areas include, energy saving, water consumption, crop loss and yield per meter (or Square Foot, which is your unit of measure). And this is before taking into account the removal of seasonality which limits traditional production cycles annually.

3. Sustainability - in this area, I like to start with the least acknowledged fact about greenhouses, which is that they are in fact reusable structures, and thus allow for transferability, and an elongated useful life. Very few industries can claim circularity of raw materials at such scale. If we then look at resource utilization, the highlight for many reasons is water use, which on average can be upwards of 50 - 60 percent less than conventional agriculture practices. Another key consideration is the use of renewable energy which then allows for even greater carbon offsets in relation to the use of artificial light.

I would like focus your attention to what I believe to be a key component of this conversation, which is the fact that CEA as a sector largely exists, and has grown exponentially over the past two decades in response to adversity related to agricultural production, and the necessity to develop new ways of meeting the demands of food systems supporting a global population that is already twice what it was at the dawn of the industrial revolution, and growing, fast.

We have entered into a new era of food production driven by developments in technology. This is particularly true in CEA. Whether be the engineering and introduction of new materials or the advances in climate management, crop monitoring or energy production, each have played a key role in making CEA production more accessible to supply chains and ultimately the consumers who they serve.

Levels of automation of operating processes have also risen greatly in some production types such as lettuce, where in many instances there is little to no human interaction with the actual product, ensuring even greater levels of food safety than ever before. This is of particular relevance to the broader fresh produce supply chain that is most susceptible to risks than other areas.

More so, it has become clear that the countries with the largest economies have or are fully embracing CEA as a core delivery mechanism to support their food systems.

Those of us that have been around long enough, like to think of this industry as currently coming of age. Seeing new entrants to the market on multiple fronts, is exciting and at the same time sobering, because it is clear that there is still a long way to go, and in reality, which you will hear or have heard from my colleagues, there is a lot that is still missing, which inevitably limits the true potential of this type of infrastructure. One such area is that of capital. There is no escaping the significant capital expenditure necessary to develop CEA facilities, but this is in fact true of all infrastructure. As stated earlier, the value of CEA is realized at scale and subsequently where projects have experienced the greatest success is where the capital has been made

available to not only build facilities, but build them with the focus on integrity and sustainability. No industry is devoid of a spectrum of costs, and what is germane to all is that the long (or intermediate) term benefits often outweigh the short term costs when properly evaluated. These costs are not merely hard costs for the physical infrastructure, but both hard and soft costs of the supporting infrastructure, be it digital or human.

In closing, I would offer to this committee one last attestation, which is that the factors driving the growth of Controlled Environment Agriculture have been consistent and the global outlook for future development is higher than it has ever been. Thank you again for the opportunity today.