

An Investor Perspective on RAS^{Tech} 2024

JUNE 5-6, 2024



June's **RAS^{Tech} 2024** in Charlotte, NC was well-attended and reflective of increased interest in alternative aquaculture production. This annual event showcases Recirculating Aquaculture Systems (RAS), a growing segment of the aquaculture sector centered on sustainable, controlled environment production of seafood on land. The conference and trade fair attracts a diverse set of attendees, including RAS producers, hatchery professionals, engineers, contractors, consultants, researchers, and investors.



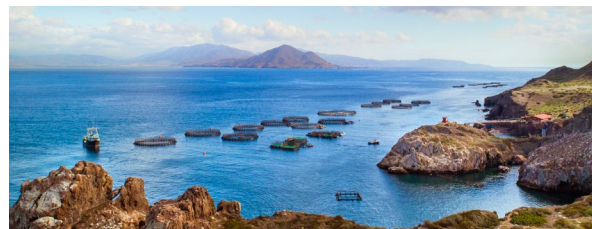
Overarching themes of this year's conference included the need for standardization in what have historically been bespoke systems, and the corresponding drive to viable unit economics. RAS production comes at a high cost, and all players in controlled environment agriculture (CEA) and aquaculture – including greenhouses and vertical farms - are all too familiar with the challenges associated with premium pricing assumptions for commodity products.

In another striking similarity with CEA trends, the RAS industry has seen a significant pivot from plans for large scale projects projecting production in the tens of thousands of metric tonnes to asking the question, "what's the smallest you can build and still be profitable?" This coincides with a 180-degree turn in investor sentiment, from pushing for too-rapid growth at all costs, to a laser focus on profitability, which remains elusive in both the RAS and CEA sectors.

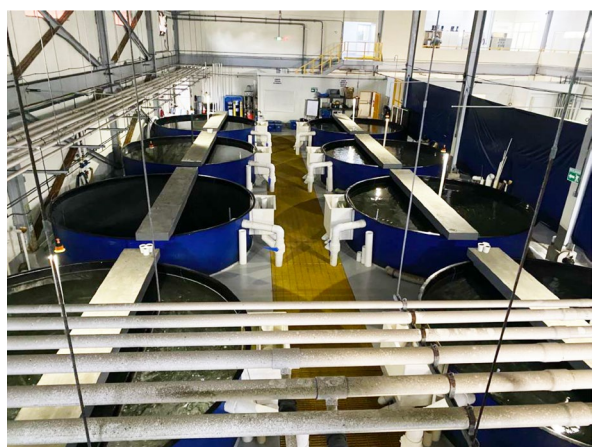


Fully land-based systems are still a relatively immature segment; the majority of operational projects are producing less than two thousand metric tonnes annually. The leap to multiple times this figure has been fraught with challenges, the well-documented struggles of Atlantic Sapphire being a highly publicized example. Historically, the most viable projects have avoided mega-scale commodity production in favor of regional, replicable facilities farming more diverse, high value species, and hybrid smolt production.

The latter is where RAS is seeing the most rapid growth and is also where the technology is most established. Growing out fish for longer periods on land before transferring them to pens lowers mortality and feed conversion ratios (FCRs) and carries less risk than keeping them in fully land-based RAS through harvest. This is the model that large scale seafood companies are increasingly using for Atlantic salmon and there is a compelling case to apply it to other species, including warm water finfish. In one such example, Pacifico Aquaculture is constructing a striped bass nursery in Ensenada, Mexico; this will allow scaled production to address underserved markets in both the US and Mexico, while reducing pressure on wild stock.



As important as de-risking the systems is the viability of producers' sales and marketing plans. This was one topic addressed in the "Defining the Market" session, featuring Megan Sorby of Pine Island Redfish and Steve Sutton from TransparentSea. Both emphasized the importance of, and demand for, quality but acknowledged the importance of price parity or, in the case of a premium product like TransparentSea's shrimp, understanding the addressable market. Again, we see parallels with CEA, a sector which also saw attractive consumer demand trends but set unrealistic expectations around achievable pricing.



Kimberley Player, investment advisor and former Director of Research for Equilibrium, participated in the Investors' Panel, which drew the largest audience of any session at the RASTech event. In a conversation with Peritus Capital's Howard Tang, she highlighted learnings with respect to RAS, and the admittedly stringent investment criteria that institutional capital applies to deal selection. This includes:

- Skilled expertise and track records
- Achievable cost curves and revenues
- Proven pilot and ability to scale
- Feasible sales and marketing plans
- Regulatory approvals and stakeholder buy-in

Other panel participants included Matt Craze of Spheric Research, who outlined macro RAS trends, and Max Holtzman, who discussed Ocean 14 Capital's recent success in raising more than €200 for blue economy investment.

As summarized in RASTech Magazine's "[Optimism returns to industry during Charlotte, NC conference](#)", there is excitement about the growth of the RAS sector and belief that the necessary tailwinds are firmly in place. Aquaculture is the world's fastest growing food production system (per the FAO) and its carbon footprint vs. that of other animal proteins is relatively low. Severely depleted wild stocks cannot feed a growing global population and conventional net pen fish farming is increasingly constrained. RAS designers are shifting to standardization and modularity to distribute risk, scale efficiently, and reduce costs, all of which will increase investor confidence. The emergence of more success stories will have a similar impact, and this finally includes a couple of large-scale operations like Hima Seafood and Nordic Aqua Partners. Overall, Spheric Research's prediction of a "breakthrough" year for RAS reflected that sense of optimism and the industry is hopefully that much-needed capital will continue to unlock growth opportunities.

