



Hello New Harvest friends,

As the year comes to a close, I am sure your inboxes and socials are being bombarded with lists of all kinds.

Well, below is another list, but this time looking just a bit further than the highlights and the headlines.

Here are my takeaways for cell ag from 2020:

1. The risk of animal ag is higher than ever. To me, the biggest linkage between COVID and cell ag is that the farmed animal supply chain is incredible precarious. Meat plants became "a new front line in the COVID-19 pandemic" in countries all over the world, threatening our food supply and the health and safety of workers. Folks used to ask me, when will cell ag put animal ag out of business? My answer has always been: cell ag won't put animal ag out of business. *Animal ag* will put animal ag out of business. And we have to make sure cell ag is there and ready for the transition. Cell ag work is urgent and important, now more than ever. (And I didn't even mention African Swine Fever!)

2. Vaccine development *could* help advance cell ag. We were happy to see our researchers *relatively* unencumbered by the pandemic, with lab work continuing as planned, for the most part. The biggest issue was a lack of research supplies such as growth media and pipette tips because they were deferred to pandemic efforts. The silver lining that I see, is that virology and vaccine development have quite a bit of overlap with cell ag—large scale mammalian cell culture, large scale protein production—and I hope this means cell ag can advance riding on the coattails of vaccine work over the next couple of years. My worry? Funding for this research dries up as soon as the pandemic risk begins to fade.

3. The field is maturing. I had the privilege of reaching out to all 83 (!) cultured meat companies this year for one of our initiatives, and I was thrilled to see the whole cell ag supply chain filling out. The first wave of companies (founded in 2015-2017, I'd say) were very focused on consumer products, this next wave (founded in 2018-now) are, to quote Matt from Future Fields, the "picks and shovels" companies, figuring out specific pieces of the manufacturing process, such as media development, surface adhesion, and scaffold design. Founders are also coming straight out of academia. It's an indicator that the field is getting more buy in from "the establishment" and growing more resilient. [Oh, and cell ag food companies \(meat, milk, eggs, etc.\) have now raised over \\$1B in VC investment \(paywalled, but a great report!\).](#)

4. Cell ag is finding its footing in academia. This year we saw some big milestones for cell ag in academia. Of course, we saw federal government grants awarded to two PIs in our research network, [Dr. David Block at UC Davis](#), and [Dr. Laura Domigan at University of Auckland](#). We also saw the [Technical University of Munich put up the first tenure track faculty position of a Professor in Cellular Agriculture](#) (excited to see who fills this seat!).

4. Singapore is driving cell ag research, globally. If you combed the fine print in the New Zealand grant above, you may have noticed that Singapore's R&D agency, A*STAR, is putting up some of the funding. Behind the scenes, they are doing that for a few more projects, as of yet unannounced. That's on the R&D front. You probably have heard that [Singapore's food agency also approved the world's first sale of cultured meat, by EatJUST](#). To me, the message behind the approval (which was somewhat vague and open ended, as it allowed FBS use and an undefined proportion of cell mass) is Singapore welcoming cell ag companies to build pilot plants within their borders. This would help them achieve [their 30/30 vision, to create 30% of their food locally by 2030](#).

5. Here come the pilot plants! With the field around five years old, we're seeing companies grow out of their "small, scrappy team" phases into setting up R&D facilities and pilot plants. This is by no means an exhaustive list, but to give a sense: [Perfect Day is setting up shop in Singapore, where Shiok Meats is also building a pilot plant](#), [Memphis Meats](#) and [VOW Foods](#) are also setting up facilities in the US and Australia, respectively. And you can eat cultured meat at [SuperMeat's pilot plant in Israel!](#)

6. Israel continues to drive thought leadership in alternative proteins. There has been such innovative thinking applied to advancing alternative proteins in Israel, from [Aleph Farms putting together a Gen Z board](#), to SuperMeat's restaurant, [The Chicken](#), to Israel's PM stating that the country will appoint a coordinator to drive alt proteins. There's so much great news here, best to follow Nir Goldstein and the team [GFI Israel!](#) for the latest on developments here.

7. New incentives to enter the space. XPRIZE just launched a [\\$15 million prize for developments of 3D cuts of meat, made without animals](#). There are already 64 teams registered to participate, mere weeks after launch. We think we'll see Xponential growth in this space thanks to this impactful initiative! A little more exposition on why this is so cool is [here on Twitter](#). Huge shout out to our beloved former research director, Dr. Kate Krueger, for her leadership on the cell ag side of things for this prize!

8. Cell ag entering the mainstream. It's always cool to see cell ag extend beyond our bubble. We were thrilled to see cultured meat in [The Guardian's top ten scientific breakthroughs](#) as chosen by scientists, [\(it was selected by Lord Martin Rees\)](#) and [Vox's list of 2020's silver linings](#). And of course, welcoming Robert Downey Jr.'s [Footprint Coalition](#) to the cell ag movement was a HUGE highlight for us!

A couple of other cool things that didn't get a ton of airtime this year:

- This awesome open source online tool out of UC Davis for cultured meat economic projections. Code [here](#), user-friendly calculator [here](#), publication [here](#). (Thanks Natalie for this tip!)
- Michelin-star chef Shimamura Masaharu has entered the cell ag space with [Diverse Farm](#) (link in Japanese), possibly [the first instance of a restaurant/regenerative medicine joint venture](#). (Thanks Yuki for this tip!)

Well, that's a wrap for today's mailout. So incredible to see the advancements we have made as field. There are several on this mailing list who remember when growing foods from cells was a mere science fiction fantasy—when there were less than five players in the field and when we still called it "in vitro meat" most of the time.

Thank you so much for joining us on this journey!

Coming up next is an overview of the researchers we onboarded this year. Keep an eye out for that on the 28th.

Have a safe, warm, and healthy holiday season!

All the best,

Isha
Executive Director, New Harvest



Do you love what New Harvest does? Donate today.

New Harvest is a 501(c)(3) nonprofit organization.
Our work supporting groundbreaking cellular agriculture research is made possible through donations from people like you.

December 25, 2020

[View this email in your browser](#)

Copyright © 2020 New Harvest. All rights reserved.
You are receiving this email because you opted in via our website.

Our mailing address is:
New Harvest
1020 Brand Lane
Unit 1333
Stafford, TX 77477

Want to change how you receive these emails?
You can [update your preferences](#) or [unsubscribe from this list](#).

[Forward to a friend](#)

