



Labor, Robotics and Innovating for Resilience

January 2022 Round Table Meeting



Michael Marsh

MODERATOR/SPEAKER

**PRESIDENT AND CEO
NATIONAL COUNCIL OF
AGRICULTURAL EMPLOYERS**



Joseph McGee

HARVEST CROO ROBOTICS

Mike Lyons

SABANTO



Michael Marsh

**PRESIDENT AND CEO
NATIONAL COUNCIL OF
AGRICULTURAL EMPLOYERS**



Labor, Robotics and the Role of Artificial Intelligence in Innovating for Resilience - Labor

January 14, 2022

Michael Marsh, President and CEO

National Council of Agricultural Employers



National Council of Agricultural Employers

- NCAE is the national trade association focused exclusively on the policy concerns of Agricultural Employers. (TIP OF THE SPEAR!)
- NCAE Members are labor-intensive farmers, growers, associations, and others whose business is dependent on domestic labor-intensive agriculture. We work ONLY on ag employer & workforce management, federal legislative, regulatory and legal issues.

“

The farmer has to be an optimist, or he wouldn't still be a farmer

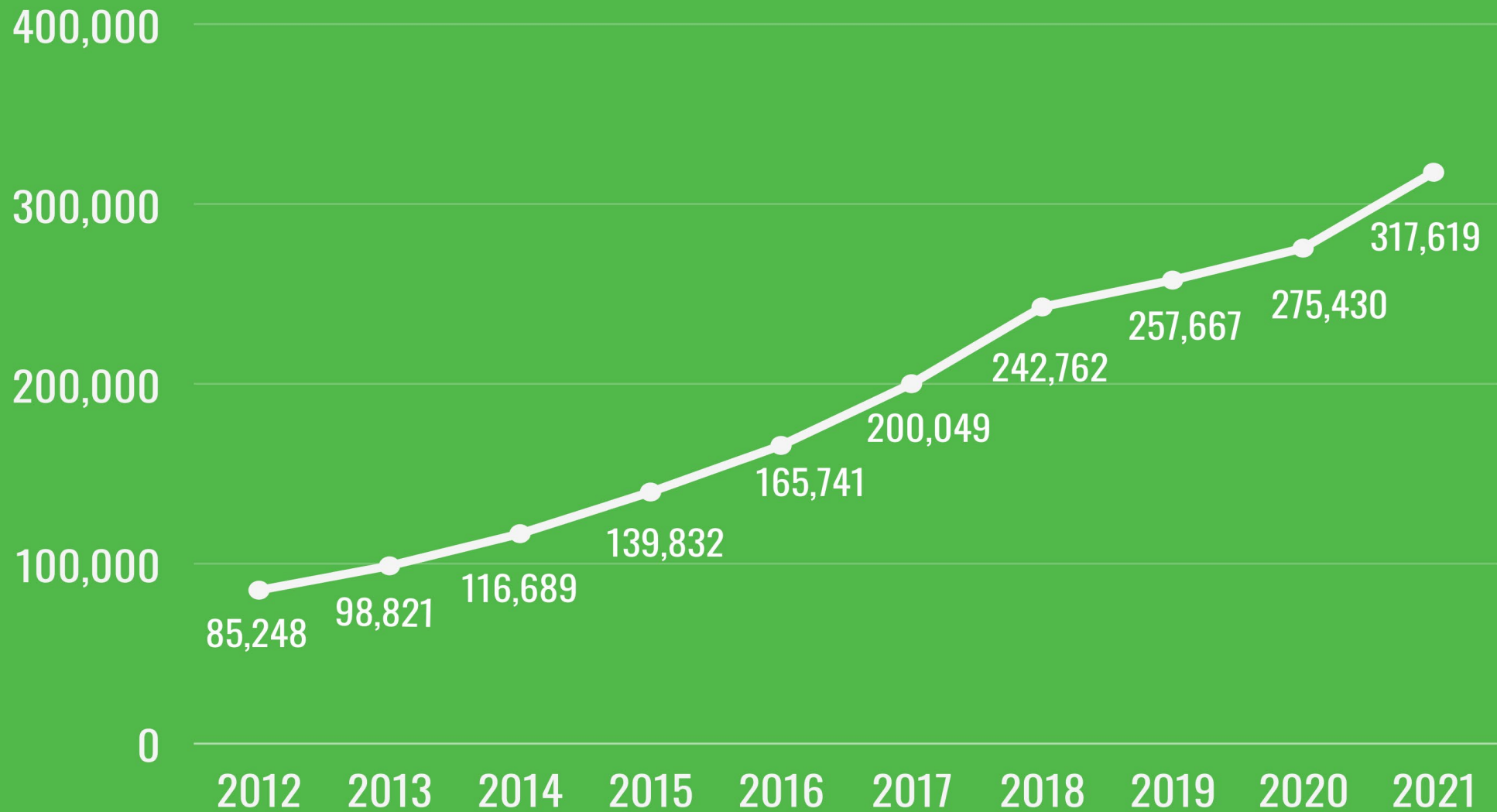
”

Will Rogers

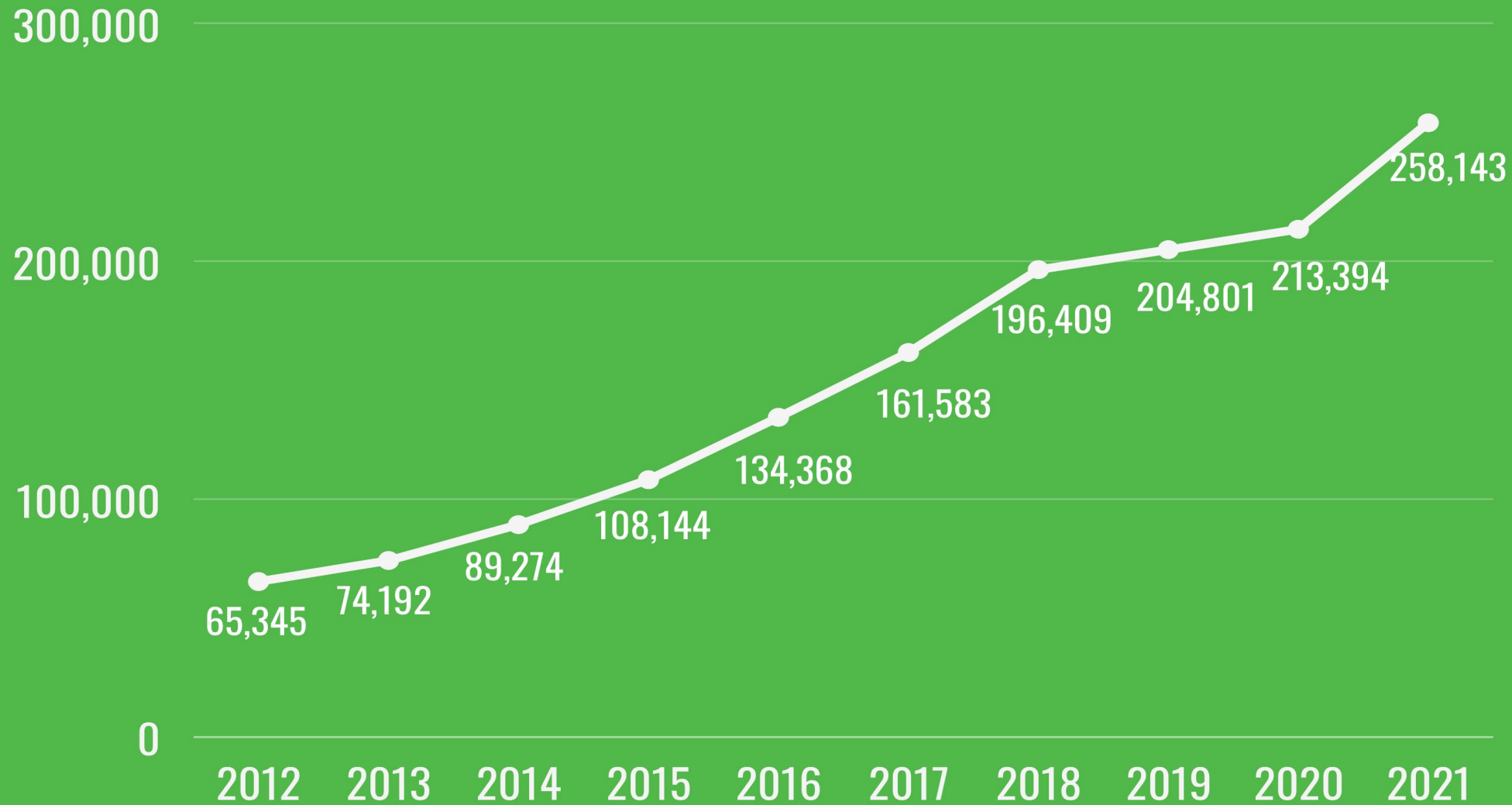
A look at the numbers

- 2.4 million hired ag
- About 200,000 H-2As
 - Future flow-critical
- Approximately 50% of domestic ag workers are unauthorized

TOTAL H-2A POSITIONS CERTIFIED BY FISCAL YEAR



TOTAL H-2A VISAS ISSUED BY FISCAL YEAR



A look at the numbers

- 2.4 million hired ag
- About 200,000 H-2As
- 2.2 million domestic
- ~ 1.1 million are unauthorized
- US ag is short of labor

Numbers Critical for Policy

- 115th Congress
 - H-2C Visa
 - 410,000 Visas for 2 years (820,000)
 - Mandatory E-Verify



Numbers Critical for Policy



- What's the problem?
 - 2.4 million workers
 - 200,000 H-2A
 - 2.2 million domestic workers
 - ~1.1 million unauthorized
- Legislated labor shortage
- Only 800,000 ag workers?



Agriculture's 25-year Journey Toward Sustainable Workforce Options (A Brief Summary)

The Long and Winding Road...

- 1986 – Immigration Reform and Control Act (IRCA), SAW Program
 - Democratic House, Republican Senate, Reagan White House
 - House passed legalization; Senate passed a worker program bill; IRCA resulted from a “lame duck” conference committee
 - For Ag, 1.2 million farm workers legalized but no future work requirement
 - Ag “replenishment” program never implemented because DOL found “no labor shortage”
 - Employer sanctions proved vulnerable to false documents
 - Worker attrition of legalized SAW workers; replacement workers were mostly young, single, unauthorized
 - By 1994, roughly one-third of workforce was unauthorized. By end of decade, >50%

Long and Winding Road...

- 1996 – pro-grower H-2A reform failed
 - “Labor Left” joined with emerging anti-immigrant wing of Republican party to defeat Ag fix
 - Republicans Lamar Smith, Bob Goodlatte figured prominently in the defeat of Ag’s provisions
- 1998 – Some Ag reforms passed Senate as approps amendment, but Clinton threatened veto
- 2000 – Ag “earned legalization/H-2A reform” added to spending omnibus in mid-December
 - Retiring Sen. Phil Gramm (R-TX) threatened filibuster, and Ag provisions were jettisoned at last moment

Long and Winding Road...

- 2003–2010 – AgJOBS
 - Bipartisan; paired earned legalization, H-2A reform
 - 63 Senate cosponsors (!) as of May 2004 but Bush White House discouraged effort to move bill that year due to election concerns
 - AgJOBS received Senate vote in 2005, but up against a “Republican alternative” offered by Saxby Chambliss. AgJOBS got roughly 55 votes; Chambliss, 21. But neither bill got to 60 so the last best opportunity to move AgJOBS as freestanding bill was lost
 - Passed Senate in 2006 as part of comprehensive bill; GOP-controlled House had passed enforcement bill late in 2005, and could have gone to conference, refused to do so
 - Included in Bush-backed reform bill in 2007, but bill failed procedural vote

Long and Winding Road...

- 2013 – S.744 featured renegotiated Ag package.
 - Minimal changes to earned legalization, more extensive H-2A reforms
 - Passed Senate, but GOP-controlled House failed to act
- 2016-2018 – H-2A reform (Goodlatte); failed in GOP-controlled House
 - Would have created a Congressionally mandated Ag Labor Shortage
- 2019 – Farm Workforce Modernization Act
 - Again paired (tougher) earned legalization, H-2A reform
 - Expanded year-round visa worker, legal immigration options
 - Passed D-controlled House on bipartisan basis in December (first time House has passed significant legislation addressing ag labor since 1986)



Long and Winding Road...

- 2021 – Farm Workforce Modernization Act
 - Passed on bipartisan basis in March
 - Senate negotiation initiated but paused as D's pursued immigration provisions via budget reconciliation process on a partisan basis
- Window for meaningful action in 2022?
 - Only realistic path would be bipartisan Senate agreement (like "infrastructure")
 - Potential for small package addressing Dreamers, Border, Ag
- Minority Leader McCarthy's comment per Axios

H-2A Update



- Adverse Effect Wage Rate
 - Based on FLS
 - Flawed use of survey
 - Disconnected from market for ag labor

Under the H-2A Temporary Ag Labor Program

- Employers must pay the higher of:
 - State or Federal minimum wage,
 - Collectively bargained rate,
 - Prevailing wage,
 - Or the Adverse Effect Wage Rate (AEWR)



Why an AEWR?

- ▶ The requirement to pay the higher of wage rate is to avoid any adverse effect on the domestic workforce due to the employment of H-2A workers



337

MSN | Outlook, Office | DHS Releases Worksi... | Online-Games | Mail - Michael Marsh - | white-house-debt-lim... | NCAE - Calendar - 2 d | untitled | Washington can't find... | Washington can't find...

capitalpress.com/ag_sectors/orchards_nuts_vines/washington-cant-find-any-u-s-workers-for-h-2a-farm-jobs/article_caf3a9da-2149-11ec-ae0d-7f4be7842960.html

Capital Press

StateNation & WorldAg SectorsOpinionSpecial Sectionse-EditionClassifiedsMobile AppCalendars

Get NewslettersSubscribe Now

Log In48°

Washington can't find any U.S. workers for H-2A farm jobs

By DON JENKINS Capital Press Sep 29, 2021



A foreign farmworker picks apples in Orondo, Wash. The Washington Employment Security Department couldn't place any U.S. workers to fill requests for foreign farmworkers.

Capital Press File

Listen to this article now
~ 3 min Powered by Trinity Audio

Washington state's Employment Security Department found no U.S. workers to take the place of foreign farmworkers this year, despite a concerted effort to make sure foreign labor wasn't displacing American jobseekers.

The ESD received 112 resumes for farm jobs, but most came from people from other countries, while others did not meet job requirements, according to Dan Zeitlin,

Container shipping rates inch downward after record-setting climb

Lee Mielke: Milk production estimates lowered again

Republicans sue over new Oregon U.S. House maps

ADM Named to Fortune's 2021 Change the World List

Wind-driven wildfires sweep across California

Early winter storm brings snow to Rocky Mountains

Learn more

PPI Speaker -Octob...icsPPI Speaker -Octob...ics2021-10-5 H-2A...docxMichael Marsh Bi...docxMichael Marsh Ph...jpg

Type here to search

69°F Cloudy 3:03 PM 10/12/2021



Sustainability and Resilience

- AEWR crashes into sustainability
- AEWR damages agriculture's resilience
- If the farmer or the rancher can't make a dollar every now and again, the enterprise cannot be sustainable

What's the problem?

- NASS does a great job
- When DOL uses it as a wage
 - Disconnected from actual wages
 - H-2A included to some extent
 - Piece rates, OT, bonuses
 - Averaging

NCAE Files Inquiry With USDA August 31

- AEWRs generated by FLS disconnected from ag labor markets
- Federal minimum wage \$7.25/hr
- Average 2021 AEWR \$14.62/hr
- Average FY 2022 AEWR \$15.56/hr (CA \$17.51)
 - > 2 x Federal Minimum



H-2A Update

- Biden DOL Wage Rule
- Went to OIRA as Final Rule (1/2022 Eff. Date)
- EO 12866 Meeting
 - FWJ
- Final Rule converted to NPRM
 - Published 12/1/2021 w/a 60-day Comment Period



H-2A Update



- Disaggregation
 - Truck driving
 - Supervisor, etc.
- NCAE Comments
- Strategizing with Counsel
- Economists
- Legal Challenge – APA?
- 11MM jobs 3.9% Rate

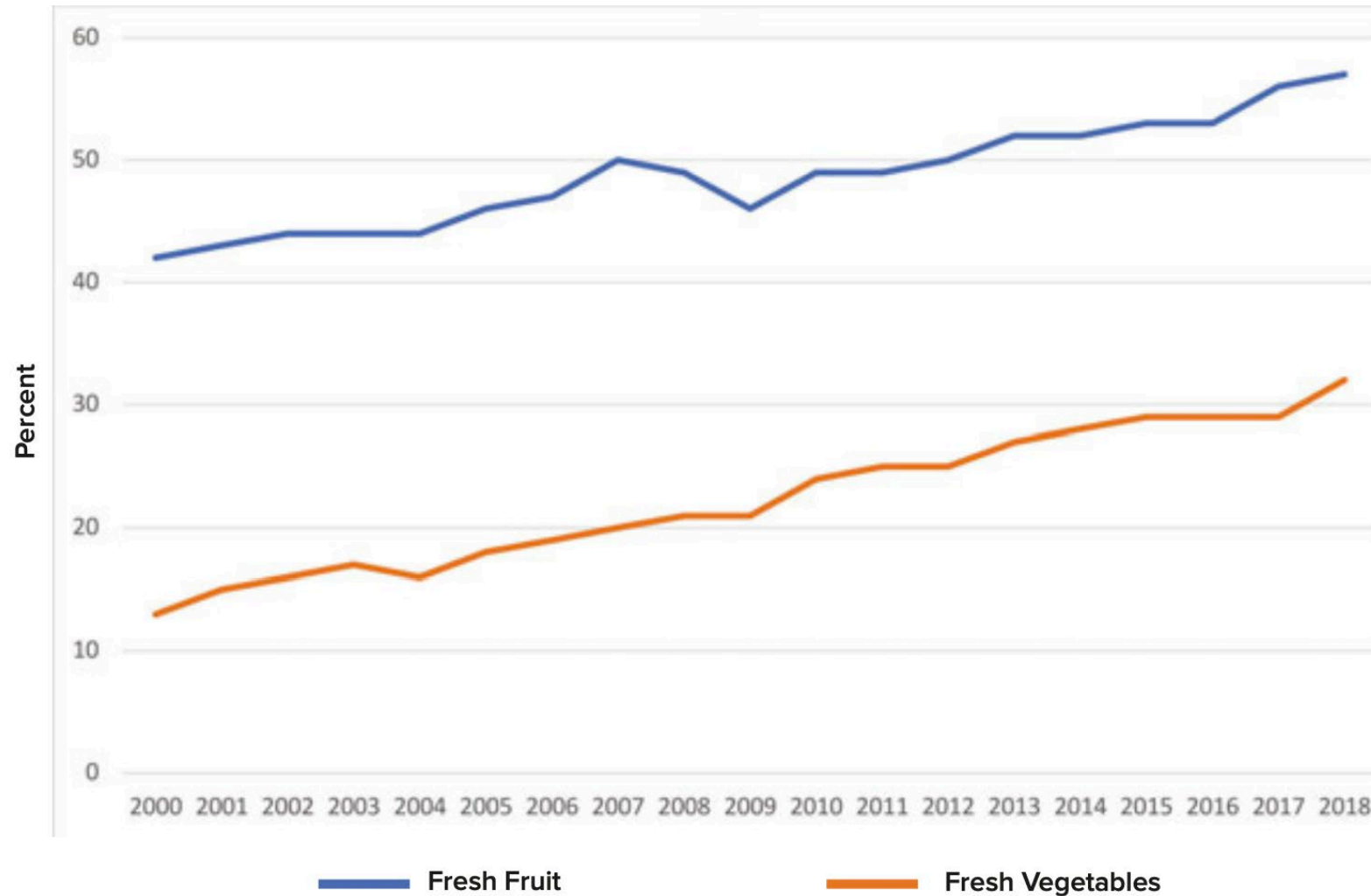
U. S. Food Production is Forfeit Overseas

- ▶ According to USDA, today over half of the fresh fruit (63%) and over one-third of the fresh vegetables (35%) consumed in the United States are produced outside our borders
- ▶ That overseas share is growing as primary variable costs for US producers spiral further away from the market
 - ▶ Mexican agricultural wages average about \$1.50 per hour. US hourly avg AEWR for 2022 is \$15.56
 - ▶ Canadian provincial minimum wages (which must be paid for foreign workers, absent the transportation and housing costs US employers must also bear) converted to US dollars as of January 11, 2022 (\$0.80)
 - ▶ Ontario \$11.41 Michigan \$15.37
 - ▶ Saskatchewan \$9.16 North Dakota \$16.47
 - ▶ British Columbia \$12.16 Washington \$17.41
- ▶ Agricultural businesses recognize the variable cost advantage and are moving production
- ▶ Crushing US farm and ranch families – driven to some extent by a disconnected AEWR

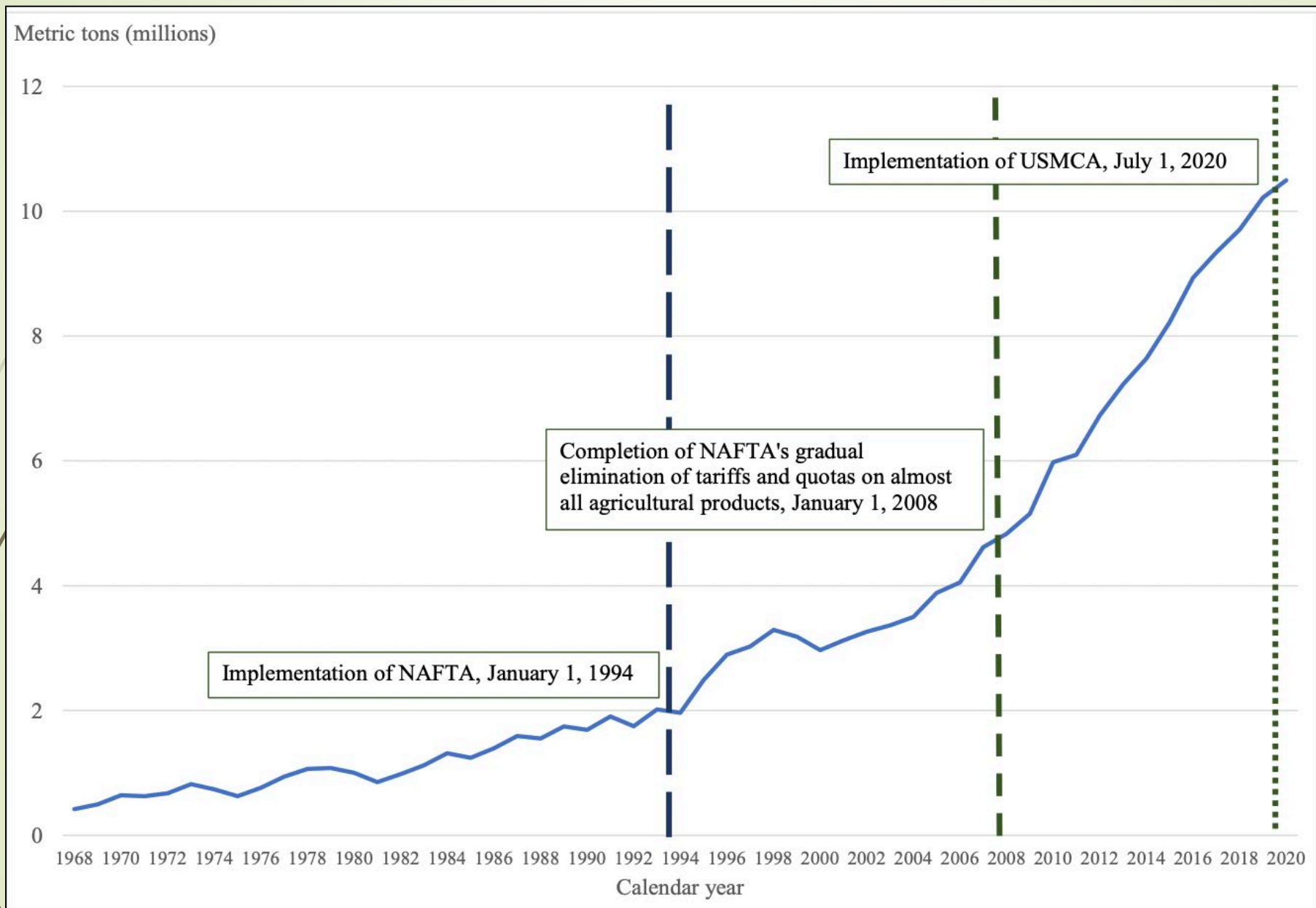
60% of US fresh fruit & 35% of fresh vegs = imported

Mexico: $\frac{1}{2}$ fruit imports, $\frac{3}{4}$ vegetable imports

Percent of U.S. Fresh Fruits and Vegetables that are Imported, 2000-2018



Mexican F&V exports to the US: from 2 million metric tons in 1994 to 5 million in 2008 to 12 million in 2020 (\$16 bil 2020)



Biden Wage NPRM



- NPRM open
- Comments due end of the month
- Kept bad parts of Trump Rule, jettisoned the good

Disaggregated Wages

	Occupation		Michigan	
<u>Year</u>	<u>Code</u>	<u>Occupation</u>	<u>AEWR</u>	<u>OES Wage</u>
2018	53-3032	Heavy and Tractor-Trailer Truck Drivers	\$13.06	\$20.89
2019	53-3032	Heavy and Tractor-Trailer Truck Drivers	\$13.54	\$20.74
2020	53-3032	Heavy and Tractor-Trailer Truck Drivers	\$14.40	\$22.14

H-2A Update



- Trump Rule 2019
 - 489 pgs = 722 pgs
 - Withdrawn 1/20/2021
- Biden Rule Coming
- Vax and test



Thank you!

Michael@ncaeonline.org

202-629-9320





Joseph McGee

EXECUTIVE CHAIRMAN AND CEO

HARVEST CROO ROBOTICS

Labor, Robotics and the Role of AI in
Innovating for Resilience



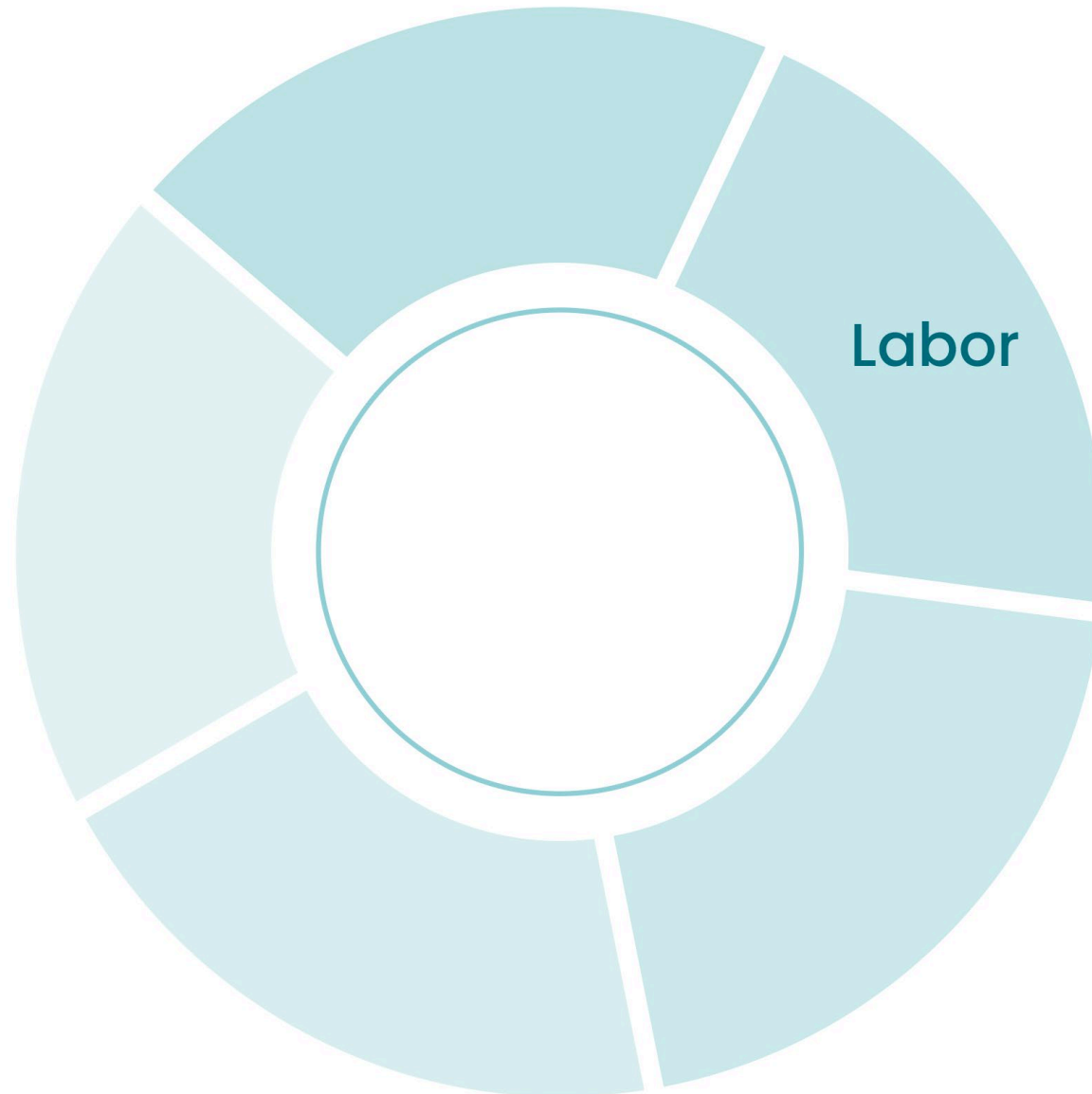
HARVEST CROO

DECEMBER 2021



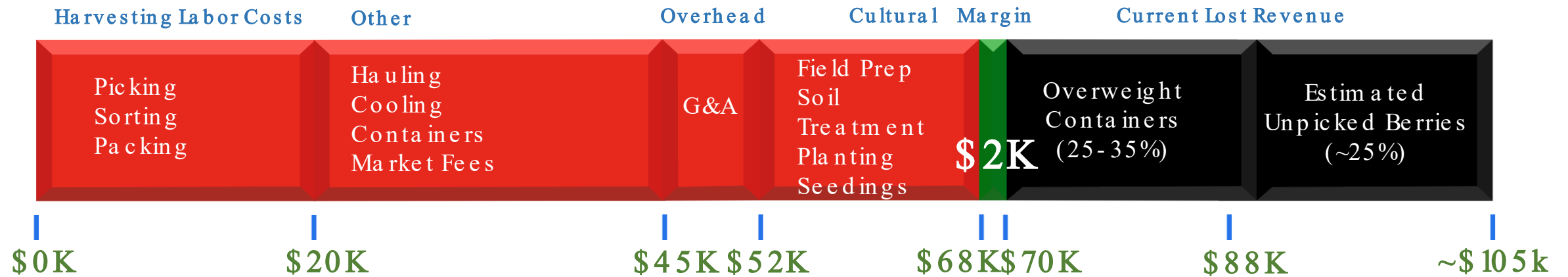
The Challenge of Food Supply

HARVEST CROO



Harvesting Costs Per Acre

HARVEST CROO



Reference report:
[UC DAVIS REPORT](#)

*Margin highly dependent on Yields, trays per acre and price per tray - which varies substantially over the year - see table 4 of UV Davis Report for details. Based on 7K trays per acre and \$10 per tray

Created by Growers

Funded by Growers

Built with Grower input

Driven by Growers

Financed by Farm Credit

\$ 24 B

2019 Global Strawberry
Market

\$ 4 B

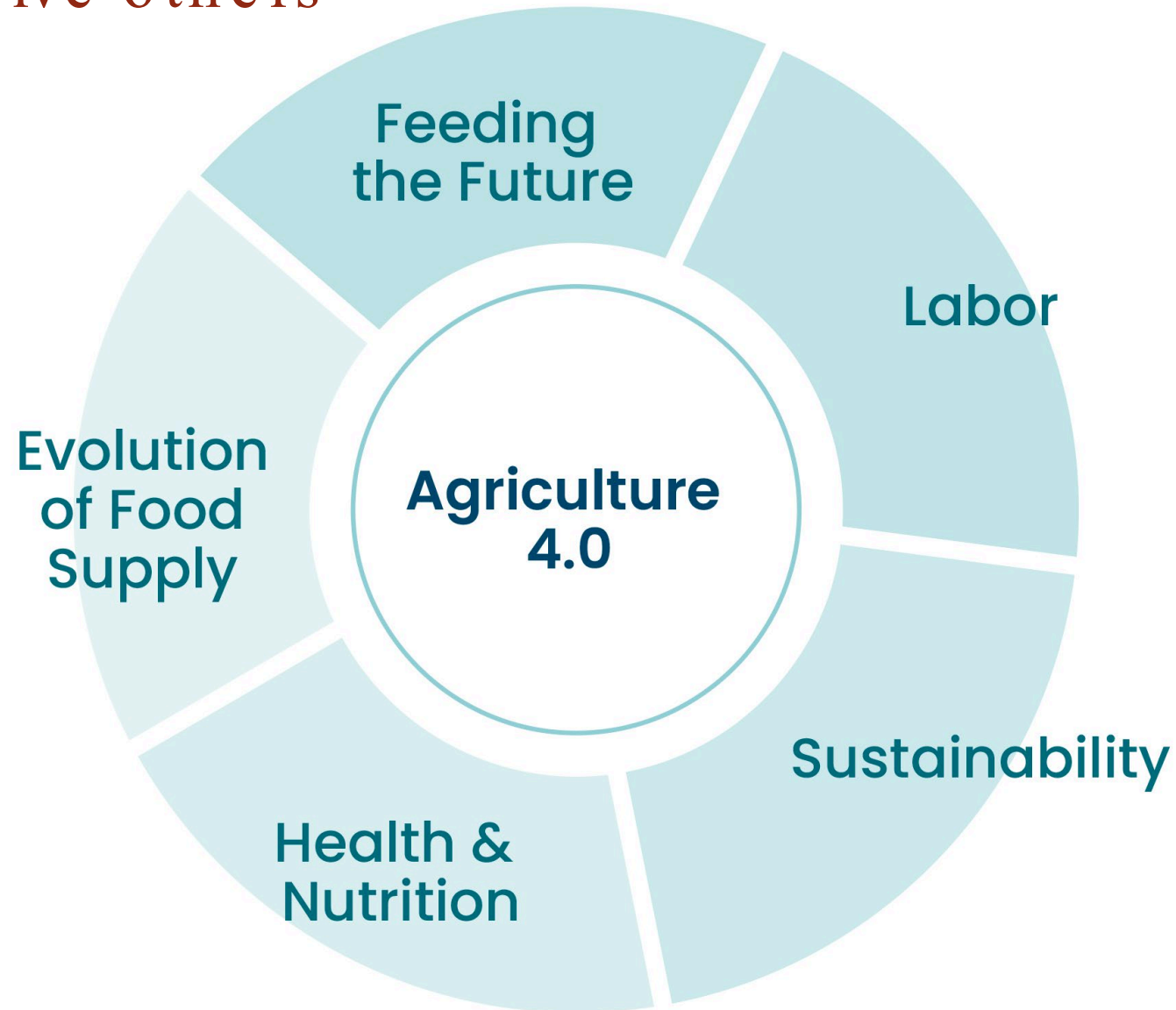
2019 US Strawberry Market

A Chronic worldwide AG labor shortage

- ~40-42% of grower revenues - on labor costs in the US
- Labor costs increasing >40% in the US, over 3.5 years to (\$1.9B)
- Strawberries going unpicked – up to 25% in the US

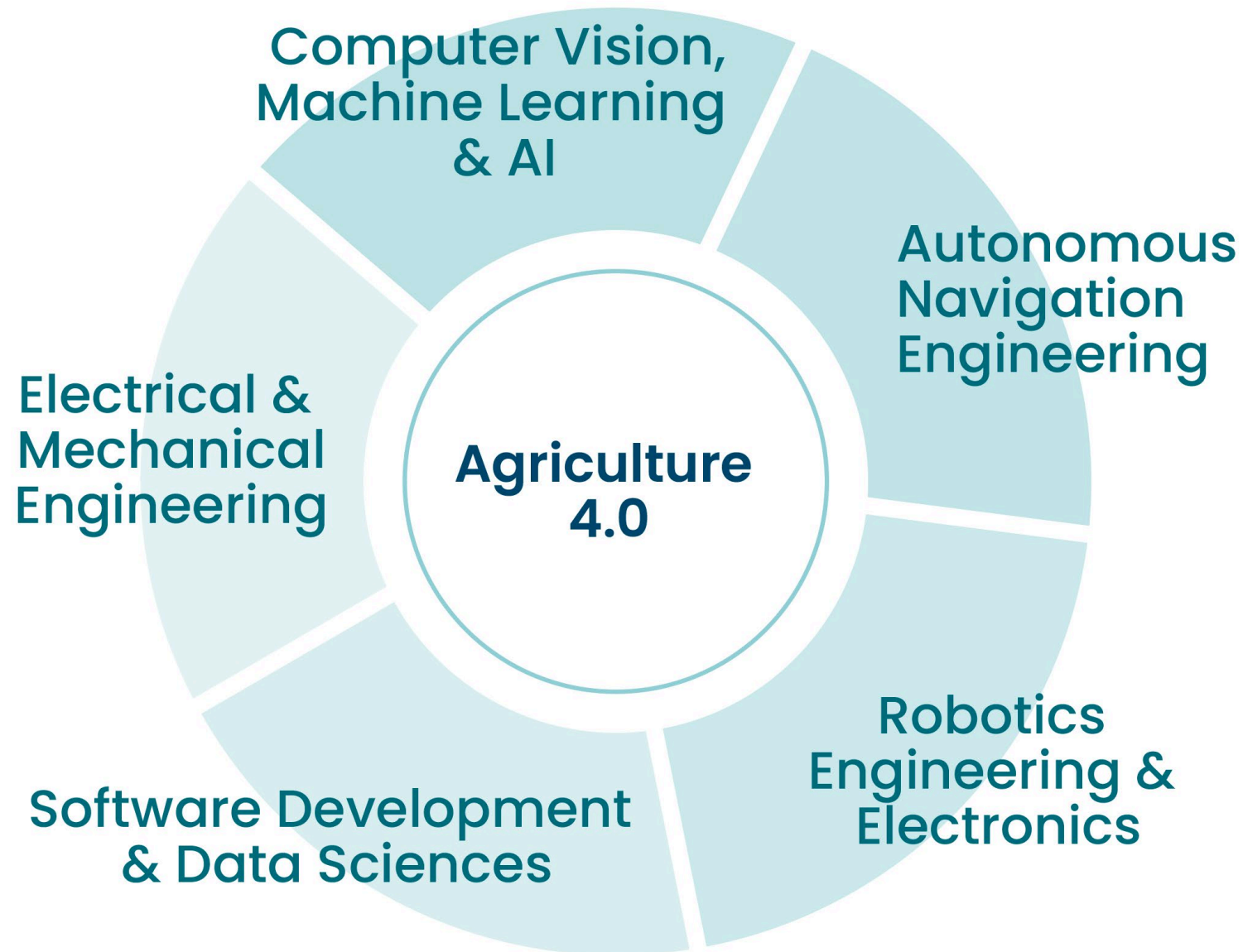
To Solve one Problem ,you inadvertently have the potential to solve others

HARVEST CROO



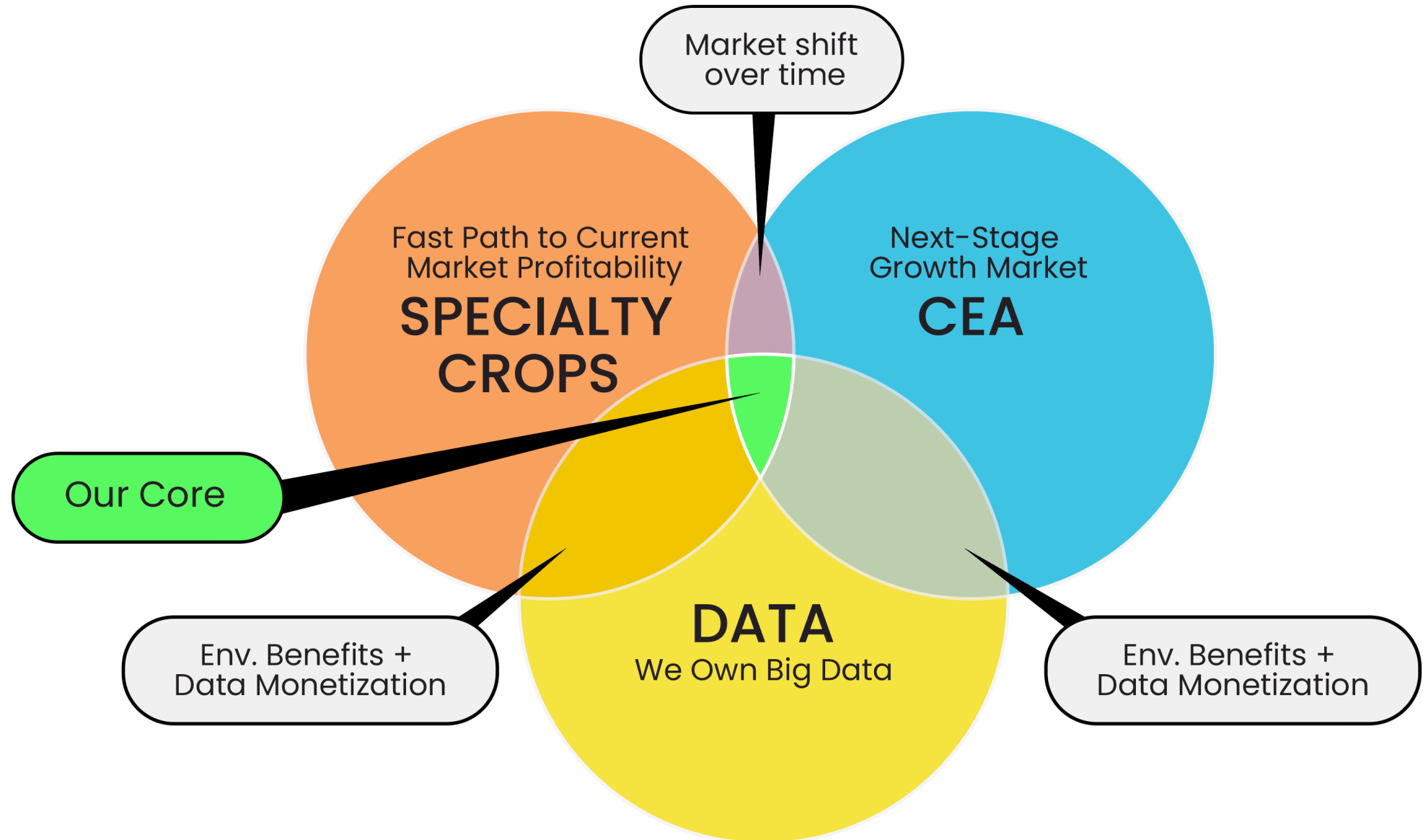
What is Ag 4.0, Engineering Disciplines,
there are

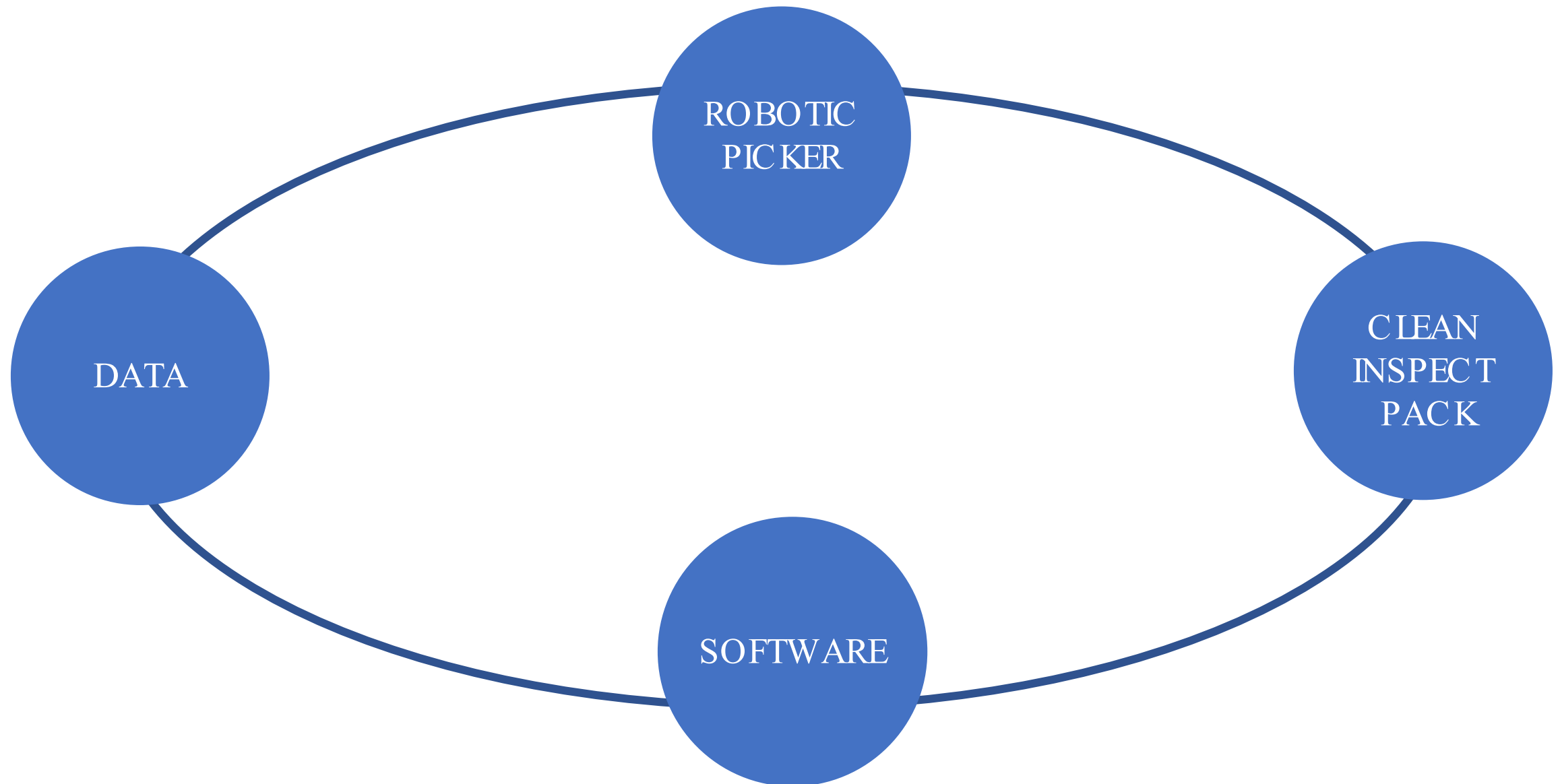
HARVEST CROO



The Market & Our Core Technology Solution

HARVEST CROO





The Harvest CROO Core

Looking at Old Problems Through New Eyes

HARVEST CROO

ROBOTIC PICKER

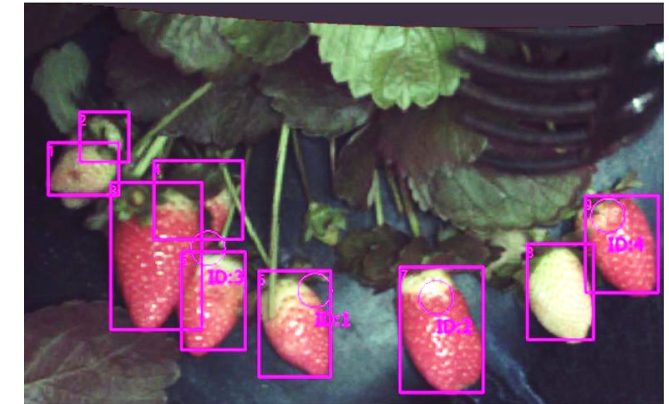
Adaptive controls



- Precision optics
- Machine vision
- Neural networks



- Targeting solution executed
- Stem separation with no damage
- Deformable structure mechanics



- Leaf aggregation to expose fruit
- Calculates targeting solution
- Multi-object tracking

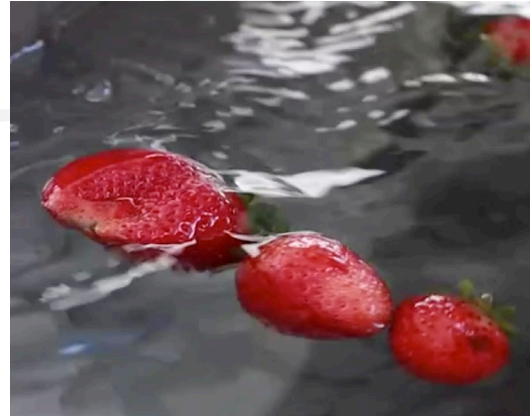
The Harvest CROO Core

Looking at Old Problems Through New Eyes

HARVEST CROO

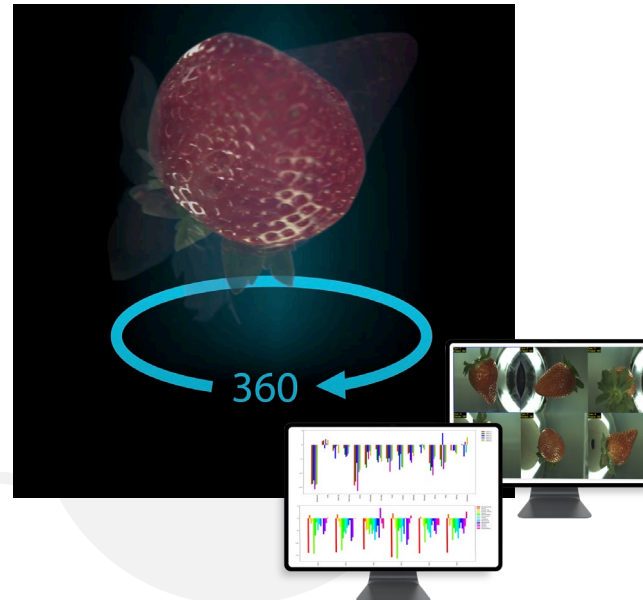


- Automated packing
- Precise weight control



- Effective sanitizer
- Organic compatible
- Hydrocooling

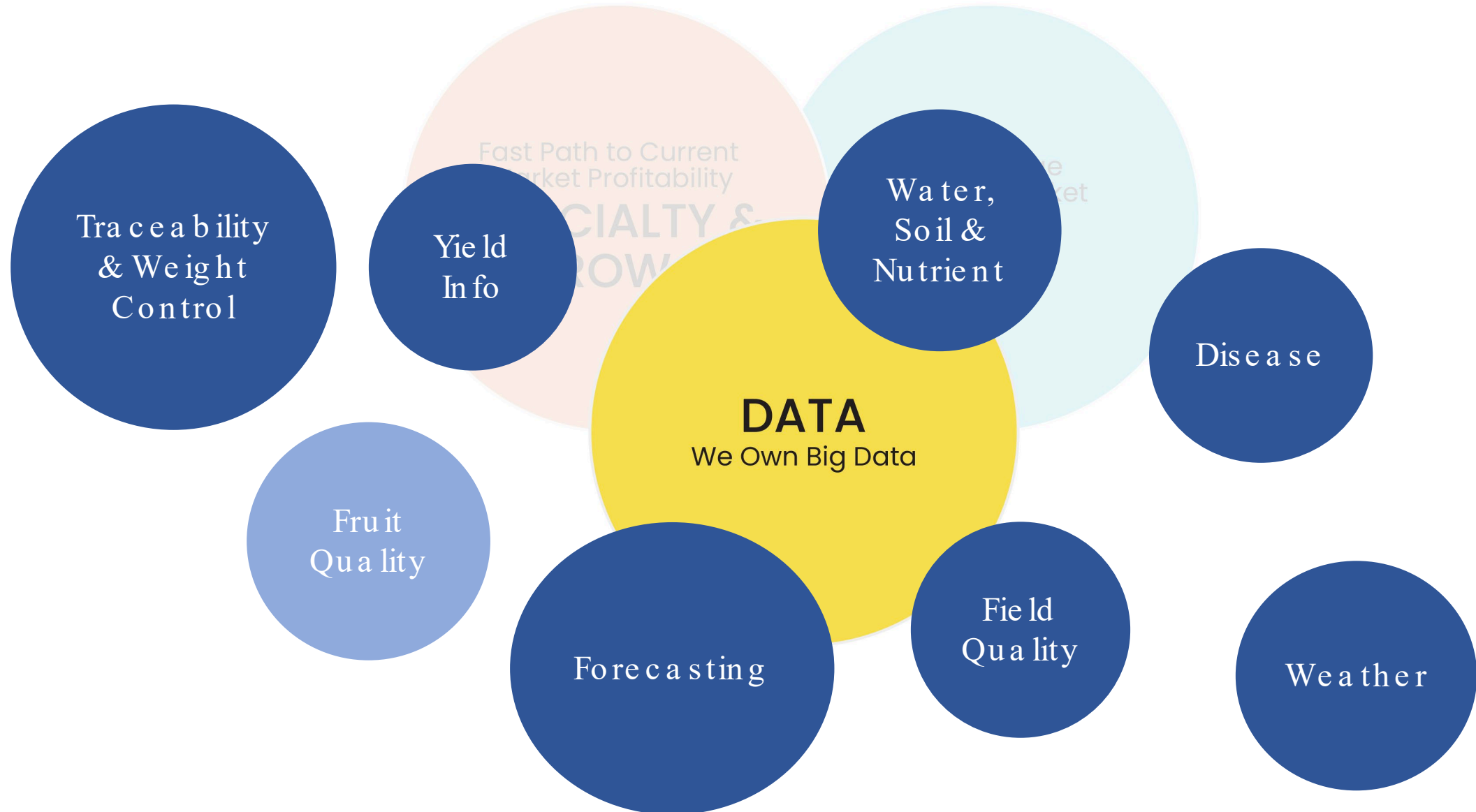
CLEAN
INSPECT
PACK



- 100% inspection
- AI/ML powered
- Consistent quality

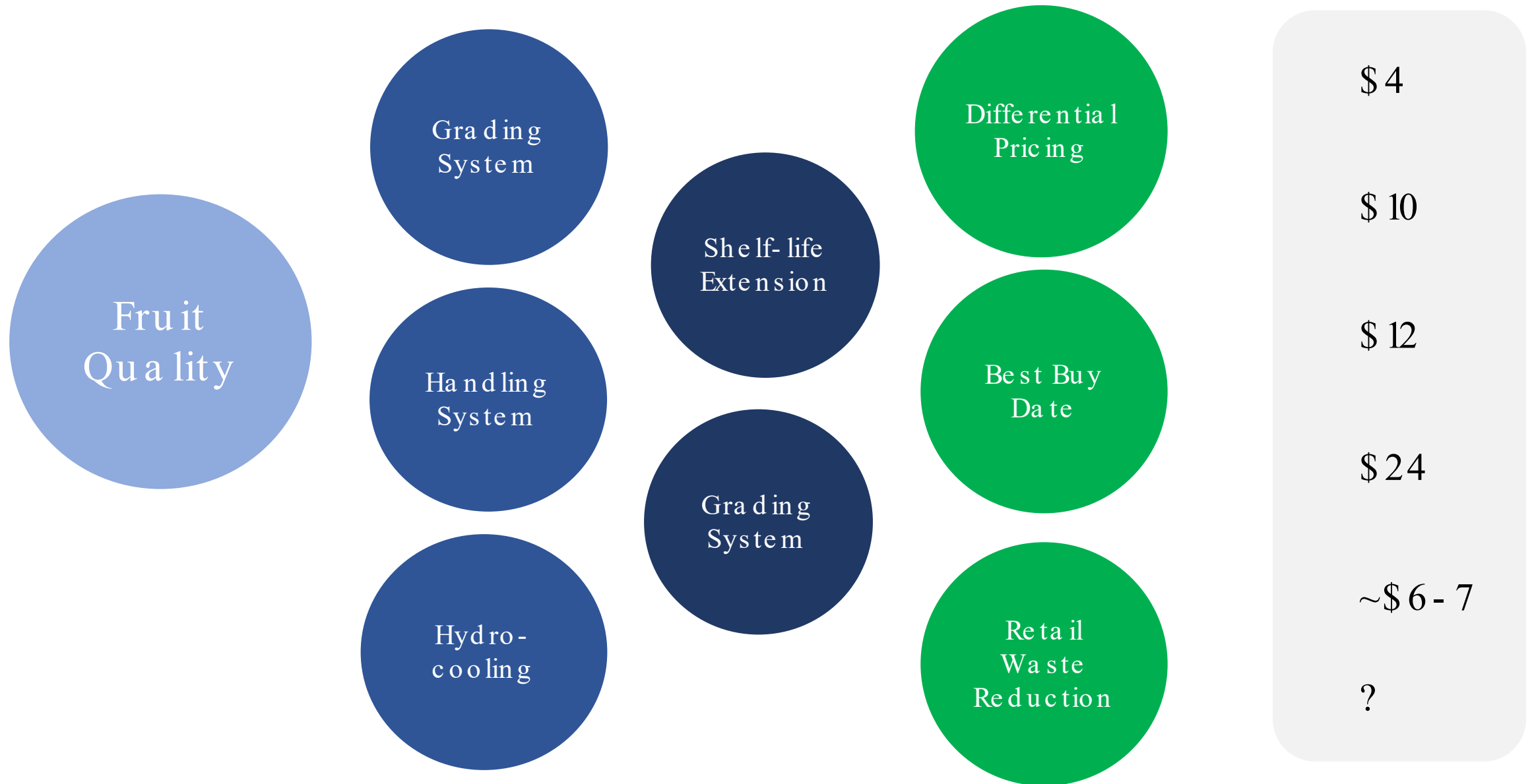
Data Value Propositions

HARVEST CROO

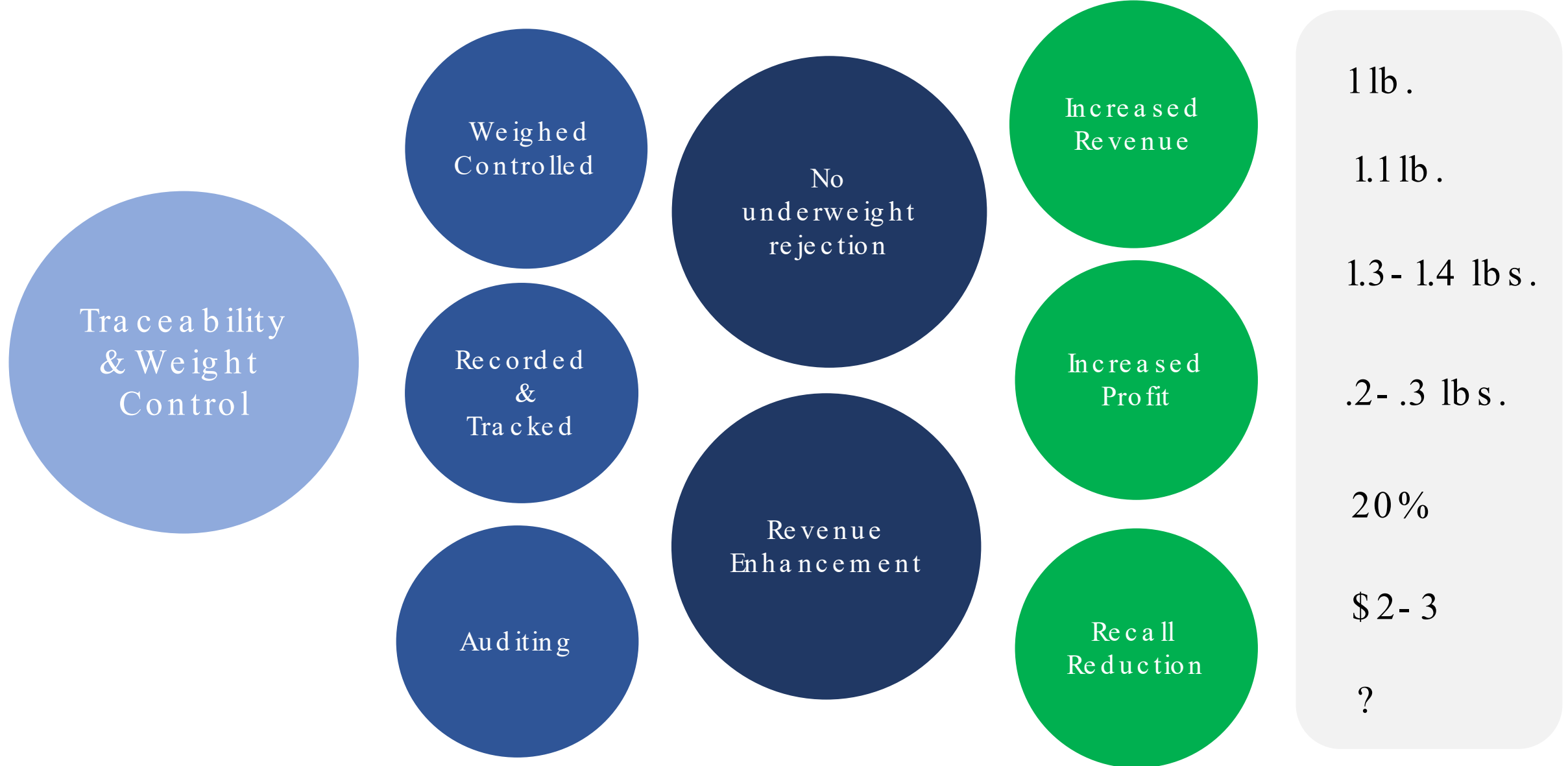


Value Proposition: Retail

HARVEST CROO

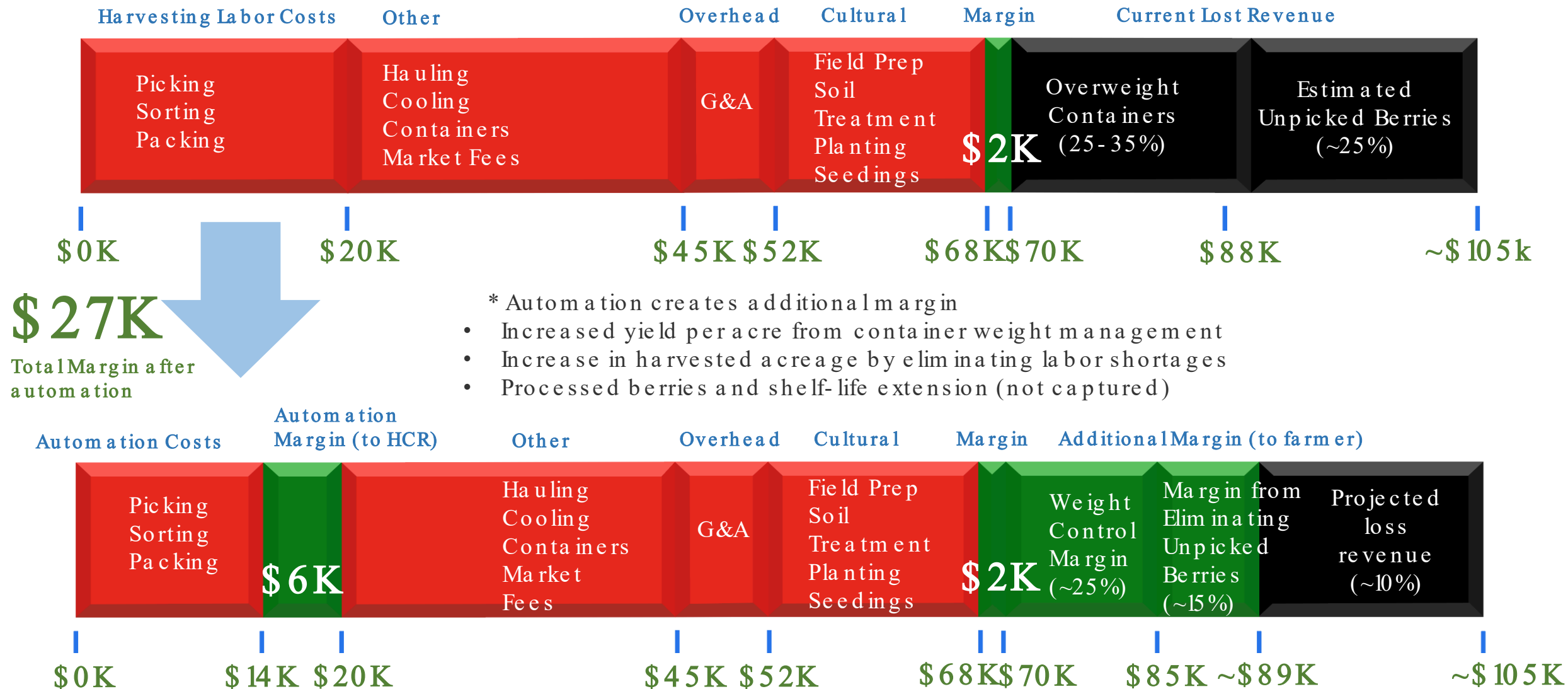


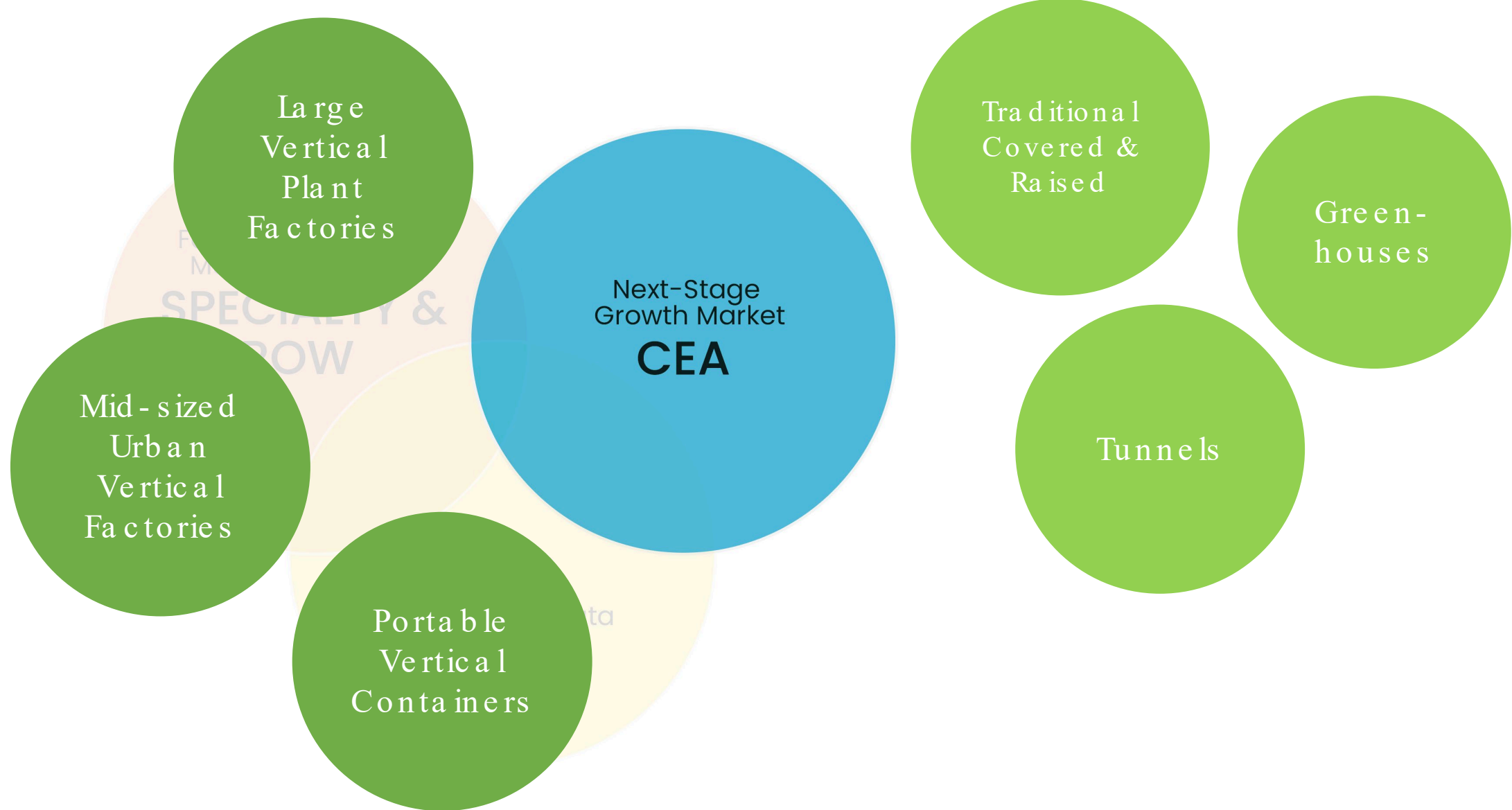
Value Proposition: Grower



Automation Value Proposition: 13x Margin Expansion

HARVEST CROO





	IN-GROUND SPECIALTY & ROW	CONTROLLED ENVIRONMENT AG (CEA)
Robotic Picking	✓	✓
Vision & VisionAI	✓	✓
Transport System	✓	⊖
Cleaning Process	✓	✓
Secondary Inspection	✓	✓
Packing System	✓	⊖
Grading Algorithms	✓	✓
Autonomous Nav	✓	Solution Specific (if needed)
Harvester Chasis	✓	Solution Specific (if needed)

Software Systems,
Data Capture
& Analysis

KEY

- ✓ Yes
- ✓ Yes
- ⊖ Potential

Go-to-Market Business Model for Strawberry Growers **HARVEST CROO**

- Harvesters will pick, inspect, clean and pack berries for growers
- HCR operates the harvesters
- HCR maintains operation center for farm management, remote monitoring of fleet, data collection, analytics and predictive insights from data.
- HCR handles field, depot maintenance and logistics
- HCR manages Food Safety compliance for the Harvesters
- Farmers pay HCR for the service



The Challenge of Food Supply

HARVEST CROO







Mike Lyons

DIRECTOR OF DATA SCIENCE

SABANTO





Question and Answer Session

How to Pose a Question:

- **Approach a mic stand**
- **If you prefer to remain seated, raise your hand and a staff member will bring a mic to you**
- **Or use the “Ask a Question” function on the Round Table app**



Joseph McGee

HARVEST CROO ROBOTICS

Mike Lyons

SABANTO

