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5 Holistics Approaches to Tackling On-Farm Food Loss

No Food Left Behind

October 5–6, 2020 | Virtual Convening

Acknowledgments

World Wildlife Fund (WWF) would like to thank Crown Family Philanthropies for their generous support of the No Food Left Behind convening; Ron Clark and Richard Tracy who supported attendee recruiting efforts and convening planning; and Three Mountain Group for facilitating this wonderfully dynamic and action-oriented event.

Participants

All American Supply Chain Company • California Association of Food Banks • Cornell University, Department of Applied Economics and Management • Duda Farm Fresh Foods • Dwelley Family Farms • Harborside Refrigerated Services • IDEO • JV Smith Companies • Kroger • Lineage Logistics • Lisa K. Johnson Consulting • Leading Transport Refrigeration OEM • Measure to Improve • PCC Markets • Raley's • ReFED • Rio Farms • Santa Clara University, Center for Food Innovation and Entrepreneurship • SnoTemp Cold Storage • Solutions from the Land • Sprouts Farmers Market • Strategic Fresh LLC • University of California, Davis, Department of Food, Science and Technology • Venida Packing Company • Western Growers Association • World Resources Institute

For any questions, please reach out Leigh Prezkop at **leigh.prezkop@wwfus.org**.

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Introduction

Convening Objective and Goals

World Wildlife Fund (WWF) hosted the 2020 No Food Left Behind virtual convening on October 5th and 6th, bringing together a diverse group of produce supply chain stakeholders from across the industry to develop actionable and approachable interventions to minimize produce loss and surplus—both on-farm, as well as along the supply chain. According to the nonprofit ReFED, nearly 10 million tons of food are wasted on farms alone each year.[1] WWF's on-farm loss studies show that losses in horticultural crops can range from as low as 2% to as much as 56%.[2] The drivers of post-harvest loss are primarily market-driven (strict cosmetic specs.), walk-by fields (surplus) and challenges with shortages and cost of labor.

The ultimate objective of the convening was to work towards a set of interventions that would focus on a holistic, system-based approach, rather than on any one single supply chain segment. Participants included key produce supply chain actors (such as farmers, cold storage and logistics companies, processors, retail produce buyers, food rescue agencies), as well as experts in consumer insights, sustainability, post-harvest loss innovation and technology, and food waste economics (see **Table 1**). To facilitate the discussion, WWF developed key leverage points from participant interviews ahead of the event (see **Figure 1a** and **1b**). Small groups were then formed around these leverage points to discuss potential interventions, with an emphasis on short-term feasibility versus longer-term objectives.

By the end, attendees walked away with five new interventions that they agreed could be approached holistically to begin to reduce produce loss and surplus across the value chain. These interventions were: 1) a food loss measurement tool implementation and amplification; 2) whole crop contracts between buyers and producers; 3) maximizing the utilization of imperfect and surplus product through e-commerce; 4) the creation of a shared food loss database; and 5) mapping food loss and waste hotspots across the cold chain.

1 "A Roadmap to Reduce U.S. Food Waste by 20 Percent," ReFED, 2016.
2 "No Food Left Behind," WWF, https://www.worldwildlife.org/pages/no-food-left-behind.

Background

For the past four years, WWF's **No Food Left Behind project** has researched post-harvest loss of horticultural and commodity crops in the US from field to farmgate and through to the processing stage. A recurring theme of this research is that measurement is key to unlocking opportunity for waste reduction, financial gain, and food utilization for multiple actors along the value chain. WWF is committed to engaging these stakeholders to measure and better understand what drives loss. In doing so, we aim to ultimately lay the groundwork for new systems-level advancements that reduce loss and improve the efficiency of our produce supply chain, while also minimizing the gap between the food that's grown and those who are in need—a win-win for business, nature, and people.

At a global level, Sustainable Development Goal (SDG) 12 seeks to develop sustainable consumption and production patterns. The third target (12.3) is to cut food loss and waste (FLW) in half by 2030.[3] With less than a decade left to achieve the SDGs, Champions 12.3 launched the 10x20x30 Initiative,[4] working to enlist 10 of the world's largest food retailers to engage with at least 20 of their largest suppliers, to work towards halving FLW across their supply chains by 2030.

WWF believes that reaching SDG 12.3 and other national food loss and waste targets will require additional innovative multistakeholder systems-level approaches. Driving engagement and action through business-as-usual approaches will not fully conquer this challenge. Food production and consumption are part of interconnected and complex systems, and actors from across our value chains must be part of designing and driving solutions.

The sudden demand shift at the onset of COVID 19—from restaurants and hospitality to grocery stores or food pantries—severely disrupted the US food system. It also illustrated how the brunt of food loss and waste issues is often placed on farmers to bear, as mountains of perfectly good food were left on American farms at the beginning of the pandemic. By re-envisioning supply chains as a circular system, it is possible to not only design out loss and waste through a predictive system, but to also drive positive environmental and social impact. Through its No Food Left Behind work and this October virtual convening, WWF's aim is to bring together experts across the supply chain to build greater resilience and generate new interventions that can holistically tackle the complex issue of loss and waste.

3 Sustainable Development Goals, UN Foundation, https://unfoundation.org/what-we-do/issues/sustainable-development-goals.
4 10x20x30, Champions 12.3, https://champions123.org/10-20-30.

Table 1 Participants categorized by role and scale

FARMERS	RETAIL PRODUCE BUYERS	FOOD RESCUE AGENCIES	COLD STORAGE AND LOGISTICS COMPANIES	POST-HARVEST LOSS INNOVATION AND TECHNOLOGY	NONPROFIT INFLUENCER	SUSTAINABILITY ADVISORS	FOOD WASTE ECONOMICS	CONSUMER INSIGHTS
Duda Farm Fresh Foods ■	Kroger ■	California Association of Food Banks ■	All American Supply Chain Company ■	ReFED ■	Solutions from the Land ■	Lisa K. Johnson, Food Loss Consultant ■	Cornell University, Department of Applied Economics and Management ■	IDEO ■
Dwelley Family Farms ■	PCC Markets* ■	Feeding America* ■	Harborside Refrigerated Services ■	Santa Clara University, Center for Food Innovation and Entrepreneurship ■	World Resources Institute ■	Measure to Improve ■		
JV Smith Companies ■	Raley's ■		Leading Transport Refrigeration OEM ■	University of California, Davis, Department of Food, Science, and Technology ■	World Wildlife Fund ■			
Rio Farms ■	Sprouts Farmers Market ■		Lineage Logistics ■					
Solutions from the Land ■			SnoTemp Cold Storage ■					
Western Growers Association ■			Strategic Fresh LLC ■					
			Venida Packing Company ■					

■ National ■ Regional ■ Local

* Engaged in interview process, did not attend event

Preliminary Learnings

Key stakeholder interviews and leverage points of focus

Beginning in the spring, WWF—along with core design team members Ron Clark (former CSO of Imperfect Foods) and Richard Tracy (former VP of International Programs for Global Cold Chain Alliance) recruited key industry stakeholders to attend the convening and conducted interviews ahead of the event. In order to view loss and surplus as a challenge across the supply chain, rather than as the fault of any one individual stakeholder, WWF sought first to hear attendees' general perspectives on produce loss and waste, checking assumptions and digging deeper into their views. Participants were then asked a series of more specific questions around the strengths and weaknesses of the produce supply chain, areas for change, how it's changed over time, supplier/buyer relationships, and high priority areas. From these interviews, WWF and the events facilitator, Three Mountain Group, distilled interview responses into key leverage points, which participants then reviewed and reflected upon before being organized into focus group calls. Key leverage points are outlined in **Figure 1a**.

In **Appendix 1**, you can view more details around each of these leverage points: the current state of the leverage point, what might not be working, potential benefits once that change occurs, and a question prompt for how we might make the change.

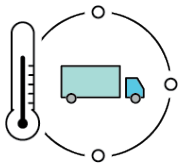
During organized focus group calls in which participants self-selected two leverage points of interest, opportunity areas and potential interventions were further distilled. Over the course of the two-day event, five groups worked together to iterate upon potential interventions, identifying factors that might support and hinder their success, and ensuring they could meet the following pressure testing criteria:

- **GAME CHANGING** Will progress on this plan sufficiently create a tipping point of positive change? Will the plan be scalable to have social, ecological, and economical impact?
- **EXCITING AND ENGAGING** Is the overall narrative compelling to others in the supply chain? Are you excited to want to engage in its implementation?
- **DOABLE** Is this doable given the resources and timing identified? Can it occur in a pre-competitive space?
- **SUFFICIENT STAKEHOLDER BUY-IN** How might you improve the interventions and action plan to enhance the chances of buy-in and support?
- **ROBUST** Are the forces that are supporting and hindering adequately addressed?
- **VIABILITY** Is it economicaly viable and would it enhance profit and/or mission?

Figure 1a Key leverage points for change identified by participant interviews

Grower/Buyer Relationships

- Adjust to flexible contract systems
- Operate collaboratively amongst supply chain actors
- Reduce buffer percentages
- Expand big data
- Increase utilization of predictive forecasting



Logistics

- Extend shelf life
- Innovate dynamic transport systems

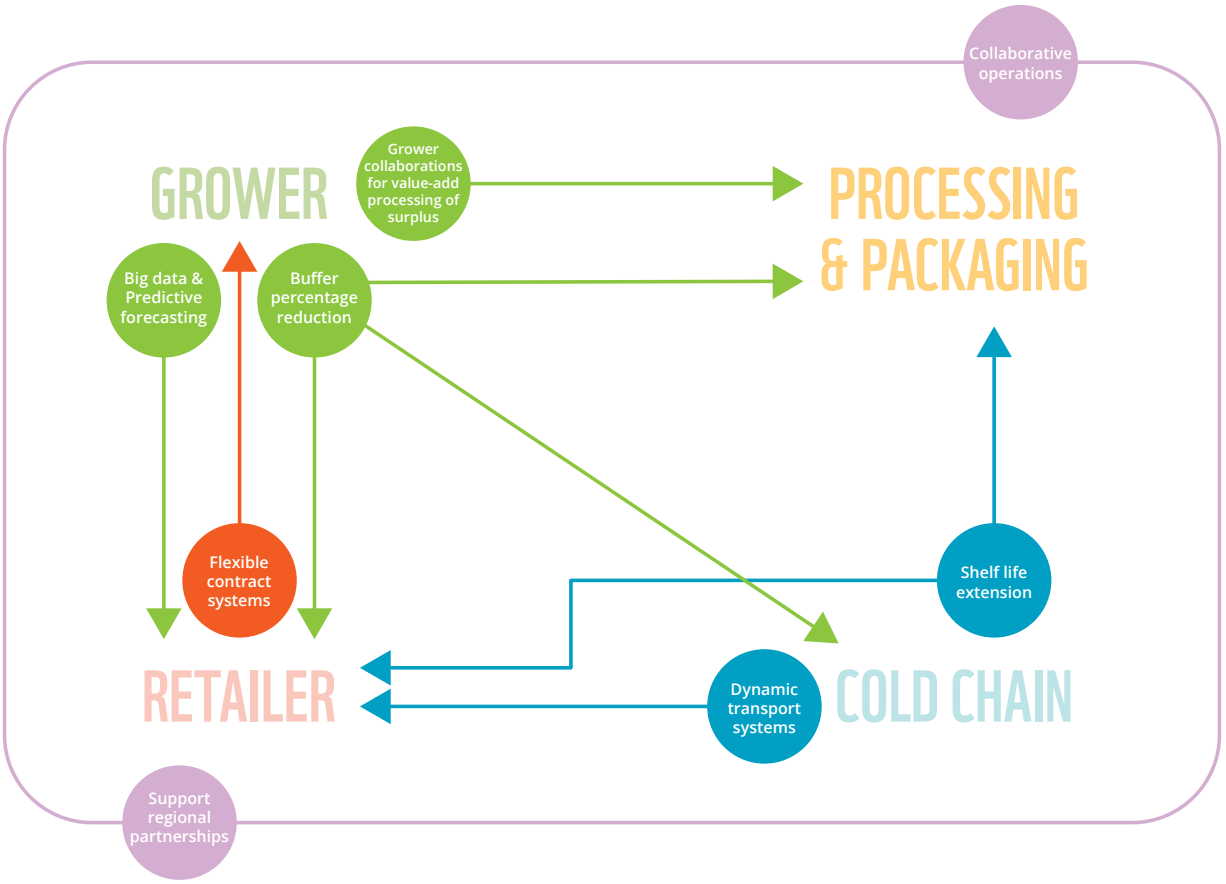
On-Farm

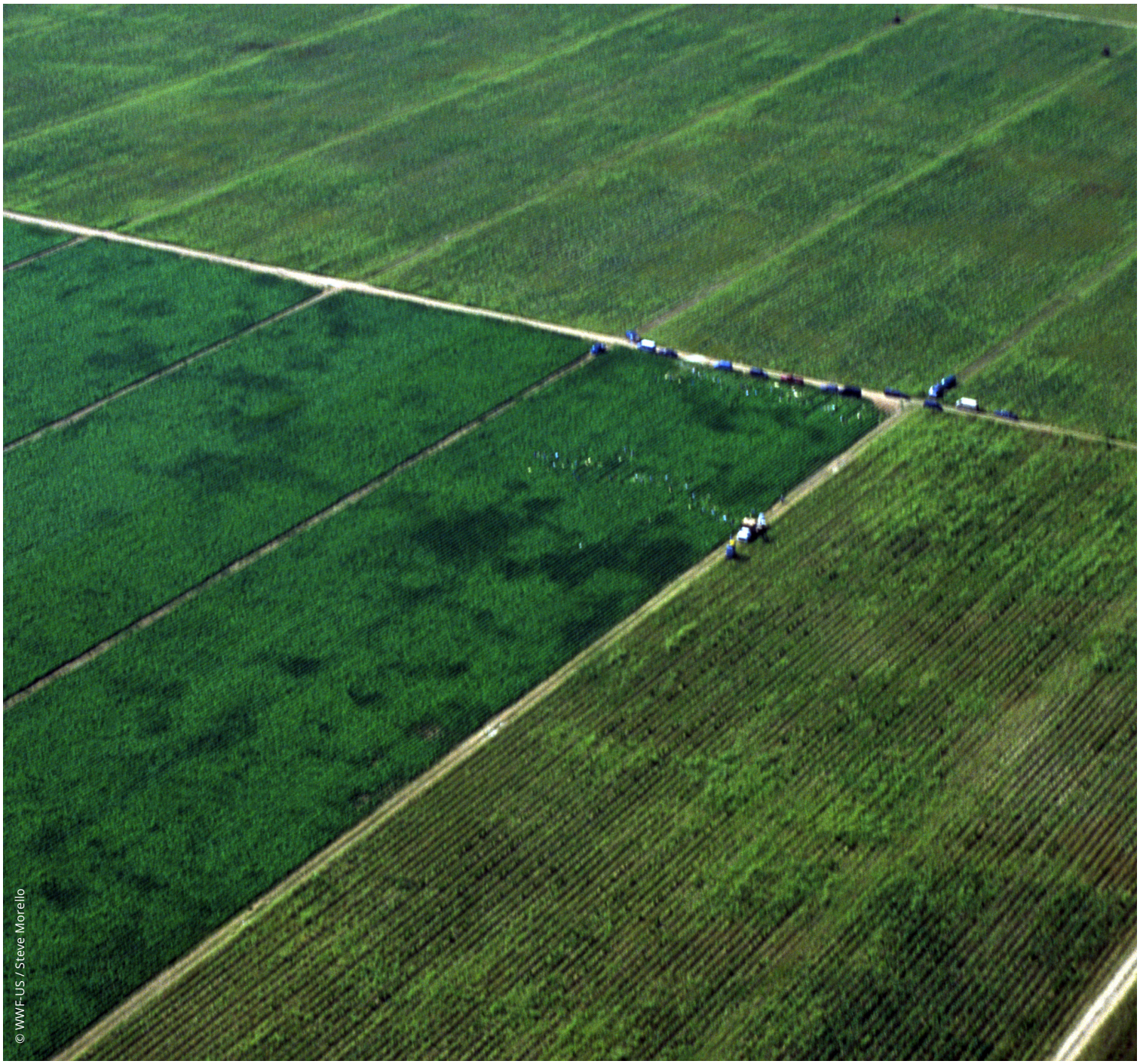
- Collaborate amongst growers for value-add processing of surplus

Whole Value Chain

- Support regional parnerships such as Pacific Coast Collaborative

Figure 1b How the leverage points intersect and reinforce one another





Interventions

The rest of this document will walk through the final interventions that were presented at the end of the convening. This includes any resources the groups identified as needed to implement their interventions, commitments made amongst group members, and immediate next steps. Estimated budgets, project needs, and partner engagement are also described for each of the five interventions, which can help to provide a blueprint for building out long-term project plans, pilot development, stakeholder engagement, and fundraising.

WWF's hope is that this report will spur other groups, companies, associations, and organizations to similarly engage in the interventions described below, and to connect further with the convening's participants and advisors. Only by pioneering new interventions with systems-level approaches can we begin to reduce food loss and waste at the scale required to reach the commitments made toward achieving SDG 12.3.

Food Loss Measurement Tool Implementation and Amplification

Measure food loss on-farms using the SISC food loss metric with a cohort of growers to establish a baseline of specialty crop post-harvest loss data.

Measurement is often the first step in unlocking new opportunities around waste reduction, financial gain, and food utilization. Several measurement tools and metrics for growers exist in the US today—the most comprehensive of which for horticultural crops is the Stewardship Index for Specialty Crops' (SISC) food loss metric. The Food Loss Measurement Tool Implementation and Amplification is an opportunity to support a cohort of growers in using this metric to establish a baseline of data that could unlock a host of new opportunities, such as:

- Utilizing surplus for value-add processing
- Identifying surplus to sell through new channels such as e-commerce and whole crop contracting
- Improving forecasting for future plantings
- Reducing total planted crops, which would also lower grower inputs

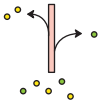
Food loss measurement naturally interlinked with two different interventions during the convening: Whole Crop Contracts and Maximizing Imperfect and Surplus Product through E-Commerce Distribution. Food loss measurement serves as a foundation and necessary precursor for both of these interventions.

WHY

Capture in-field and walk-by loss data on farm

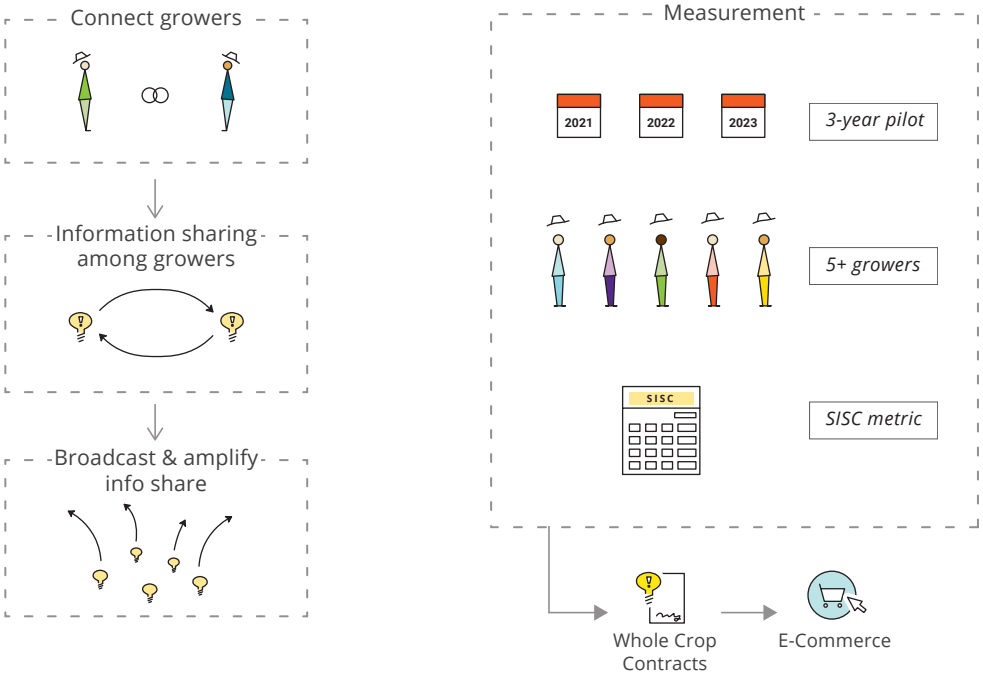
Build transparency throughout supply chain

Educate growers on value of food loss data collection



Create alternate channels to capture and utilize surplus goods

HOW



NEXT STEPS

BUDGET

1-YEAR

$115k allocated to:

nonprofit influencer

sustainability consultants

farmers

partnerships

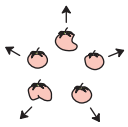
Whole Crop Contracts

Analyze existing buyer-grower contracts and begin research and development for a new type of contract that entails whole crop purchasing or purchasing of a whole farmer's yield including cosmetically imperfect product.

Retailers in the US today tend to purchase produce based on projected demand and strict cosmetic specs, which rarely cover a grower's total supply. By offering growers whole crop contracts (a long-term contract that ensures absorption of surplus and edible imperfect crop by the buyer), retailers will likely utilize a greater portion of the total available produce. This also helps to reduce on-farm loss and increase flexibility for growers from season to season. With this increased flexibility and trust with growers, retailers can begin to incorporate on-farm loss metrics into their forecasts and determine which quantity of produce to offer in-store versus other channels (such as e-commerce or food donation).

The idea of whole crop contracts between buyers and producers is not new. Tesco (the UK's largest grocery retailer) has created a system of transparency and long-term partnerships that gives its suppliers and producers the confidence to innovate and invest in their businesses.[5] By measuring and publishing food loss and waste data, a system of trust and mutual benefit is created, which works to fully utilize all product that is grown to the point of maturity.

WHY



Increase product utilization

Strengthen grower-retailer relationships

Alleviate food insecurity

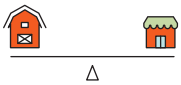
Unlock opportunity for co-branded PR campaign led by grower and retailer

HOW

Innovative & flexible contract systems

→ Account for growers' entire planted acres

→ Incentivizes production and purchasing to equalize over time



→ Retailers increase product supply streams for food of varying cosmetic standards

NEXT STEPS

Conduct pilot to model a surplus year

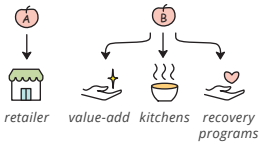
↓

Develop business case around flexible & whole crop contracts

→ Activate supply chain

→ Engage distribution center that accepts above normal capacity

→ DC coordinates based on scale



pre-pilot

Launch season-long food loss measurement with farmers

pre-pilot

Develop business case for utilizing surplus in e-commerce distribution centers

TESCO

Contact Tesco re: execution of whole crop purchasing

→ Organize listening tour

→ Determine success of program

→ Prepare for long-term project management

BUDGET

$80k–120k allocated to:

nonprofit influencer

business case development

private sector

research

volunteer retail participants

5 "How Tesco Works with Suppliers," The Grocer, August 7, 2019, https://www.thegrocer.co.uk/promotional-features/how-tesco-works-with-suppliers/596398.article.

Maximize Utilization of Imperfect and Surplus Product Through E-Commerce

Research and pilot a system that leverages e-commerce to explore revolutionizing the consumer produce buying experience and movement of surplus and imperfect fresh produce, strengthening the relationship between retailer, farmer, and consumer.

In a whole crop contracting scenario, one possible sales channel for surplus product absorbed by retailers is e-commerce. As growers adopt new tools to measure more of their surplus and loss, retailers have an opportunity to improve upon or create new e-commerce platforms to efficiently move a higher volume of fresh produce.

A key aspect of this strategy would see retailers broaden their produce specs, to sell not just perfect produce in-store, but "imperfect" or seasonal surplus via their e-commerce channels as well. This would utilize a greater portion of what growers produce, while also helping retailers to meet the rapidly growing demand for online grocery ordering (which is expected to make up 21.5% of total grocery sales by 2025—a 60% increase since COVID-19).[6]

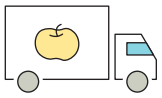
Now is the perfect time to explore these options, with consumers clamoring for simple and easy-to-use e-commerce experiences, and food loss and waste top of mind (following all of the COVID-19 supply-chain disruptions). Solutions like this align with sustainability goals, increase customer loyalty, and strengthen supplier relationships.

WHY

Minimize comparison between "imperfect" and "perfect" produce

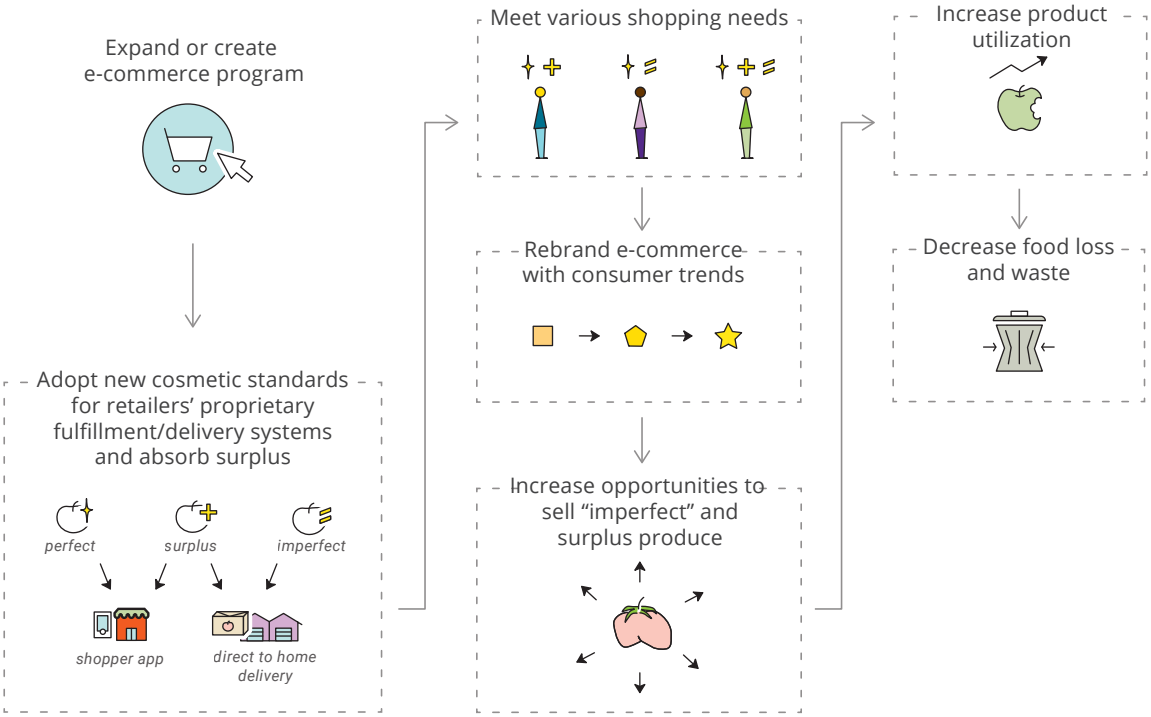
Reduce loss and waste of cosmetically imperfect product on-farm

Increase sales via "imperfect" and surplus products

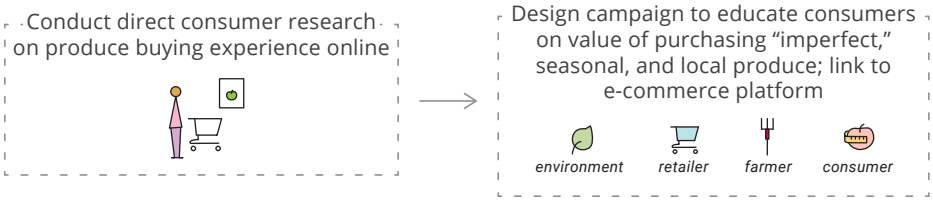


Capitalize on home delivery consumer trend

HOW



NEXT STEPS



BUDGET

$200k–300k allocated to:

nonprofit influencer

private sector

market research

6 "EGrocery Adoption: The New Reality for Grocery Shopper Behavior," Mercatus, accessed December 23, 2020, https://info.mercatus.com/egrocery-shopper-behavior-report?utm_source=ketner.

Food Loss Database

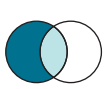
Build a database that aggregates existing grower and retailer data platforms used for producing, and retail orders to allow for predictive forecasting and anonymized benchmarking by growers.

A food loss database could be built between producers and retailers to aggregate existing platforms and improve the efficiency and usability of grower data. This type of database would allow for predictive forecasting by individual growers; anonymized benchmarking between growers; and integration with the USDA NASS yield surveys and SISC Food Loss Metric.

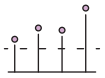
One possible solution discussed was to leverage and expand upon an existing platform, such as the SISC's food loss metric via Supply Shift. To be effective, the platform would need to aggregate anonymized input, yield, and loss data to inform future plantings, purchasing, sales, and recovery decisions. It should also track the destination of all transacted crops (including contract deliveries, spot market sales, and charitable donations).

A major risk to this intervention is gaining grower and retailer buy-in, which could be alleviated by further clarifying the potential benefits and intended use of the data.

WHY

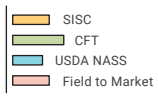


Increase transparency across supply chain

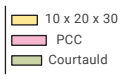


Benchmark non-competitively

Build aggregated, anonymized database forpredictive forecasting

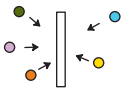


Align with common reporting platforms



Align with voluntary agreements requirements

HOW



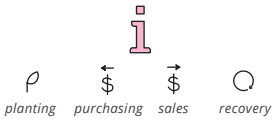
Consolidate & align grower data platforms

Increase accuracy & efficiency for growers

OPTION 1 Expand existing platform that tracks food loss

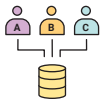
Dashboard for benchmarking

Inform future decisions



OPTION 2 Create third party platform to host app

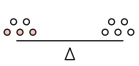
Aggregated & anonymized data



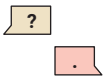
AI predictive analytics at retailer & grower critical mass

NEXT STEPS

Assess adoption of existing platform vs creating third party app



Interview stakeholders to develop risk-minimizing strategy



Once ready, pilot with niche specialty crop growers who share trust

BUDGET

$200k–300k allocated to:

nonprofit influencer

business case development

private sector

research

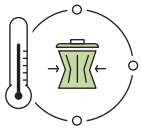
volunteer retail participants

Mapping of Food Loss and Waste Hotspots Through the Cold Chain

Research existing gaps in the cold chain to identify hotspots where waste is reoccurring and improve best practices of cold storage and logistics companies.

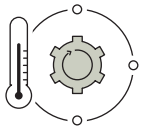
Although WWF and several universities (like Santa Clara University and North Carolina University) have conducted field studies on post-harvest loss and on-farm surplus, there is still very little data on loss and waste occurring across the cold chain. This intervention outlines how to close this data gap in the cold chain and improve upon food loss and waste best practices for cold storage and logistics companies.

WHY

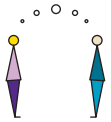


Reduce loss & waste in cold chain

Save costs through cold chain optimization



Confirm, expand, or adjust cold chain best practices

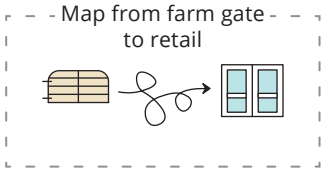


Provide consistent education for all supply chain actors

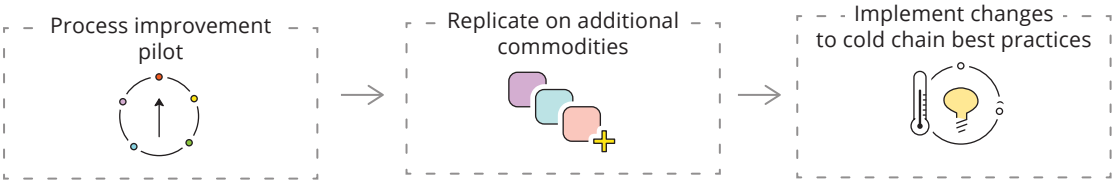
HOW

Identify target commodities

Identify loss and waste related to cold chain breakages



NEXT STEPS



BUDGET

$400k
allocated to:

nonprofit influencer

research

cold chain advisory

Conclusion

The No Food Left Behind convening surpassed expectations in delivering on its intended objectives. The interventions described were developed by groups that had representation of most, or all of the supply chain. The collaboration, relationship building, and virtual face-time during these unique times was invaluable and also essential to discussing such a complex problem. The landscape of food purchasing is changing, as is how consumers engage with various shopping platforms, whether online or in-store. Given the supply chain disruption and demand shifts seen in the onset of COVID-19, it is imperative that we act swiftly and collaboratively to set the stage for a resilient and nimble supply chain that can fully utilize all product being grown—to benefit business, nature, and humans. WWF's Food Waste team and other convening participants have begun moving forward with some of the described interventions. It is no surprise that multiple interventions seem connected. The complex system of production and consumption in the US is intertwined, and the outcomes of the convening illustrated those connections. To that effect, WWF is working on scoping projects that entail more than one intervention. WWF's portfolio of post-harvest loss research and work done with the private-sector and food-service industry can also help set the stage to move into action.

WWF is calling upon convening participants and other stakeholder groups to engage with these interventions or use them as a base to iterate upon. By working together, we can reduce post-harvest losses and better utilize surplus produce.

Appendix 1

The following leverage points were distilled from key stakeholder interviews. Each leverage point is outlined to answer the following questions:

1 How does the leverage point currently exist?

2 What are the negative aspects of the leverage point that need to change?

3 "How might we" Question / What are the potential benefits to the supply chain once change occurs?

Leverage Point 1
Reduce Buffer Percentages

1 Buffers exist to manage risk and to ensure growers meet contracts

All members of the supply chain create buffers to reduce risk and meet contracts

All parties want the best price and the full quantity they asked for

2 Buffers throughout the system are leading to waste

Contracts pressure growers to deliver product in defined volume and on exact spec so they create buffers

Competition for contracts drives growers to minimize risk by increasing buffers -> more waste

3 How might we reduce buffer percentages?

Change perspective on relationships within supply chain and need for buffers

Could an external company manage risk?

Could insurance be applied?

More communication and flexibility between growers<->logistics<->retailers

Shared buyer knowledge technology improvements with the entire supply chain on a pre-competitive basis

Leverage Point 2
Flexible Contract Systems

1 Contracts between retailers and growers are rigid in terms of:

Timing, visual specs, quantity, cost

2 Having rigid specs in contracts drives loss

All items that do not meet spec are rejected

Product is sold and marketed based on customer expectations

Growers overproduce to ensure (increase buffers) they will have enough product above and beyond spec losses

3 How might we adjust contract systems to make them more flexible?

Changing contract specifications

Is it possible to adjust consumer expectations?

Supportive grower and retailer relationships?
- trigger clauses, more support during times of overproduction

Retailers take-on risk: sell more diverse product of varying quality moving through the system = less product lost

Whole crop purchasing to slowly introduce more out of spec product to re-educate consumers

Follow voluntary agreements

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Leverage Point 3

Collaboratively operating with supply chain actors

1 Historically retailers would market product for growers. This type of relationship has shifted.

Profit demands of wall street quarterly reports

With competition, retailers wanted the lowest prices

2 Changing the relationship would entail taking on risk

Risk involved in terms of irregular spec/cluttered merchandising product displays

3 How might retailers benefit from marketing on behalf of their suppliers?

Retailers want to meet sustainability goals & the business case for long-term investment in supplier relationships

Collaboration, tighter relationships between growers/buyers

When buyers shift stores, be accommodating/flexible with suppliers you take with you to aid in long-term engagement success

Consumer innovative marketing campaigns

Sales promotions to pull surplus through the system

Leverage Point 4

Big Data

1 Some usage of data in the food supply chain exists

Predictive forecasting, consumer insight, improved matching of supply and demand, quality inspections, blockchain

Would this support improve insight into food safety concerns/forecasting?

2 Who will collect and host this data?

Collected and shared across the supply chain, not just operated by single actors

Financial backing and infrastructure development

3 How might Big Data assist in addressing food loss and waste?

Potential Big Datasets that will be helpful

Weather patterns using satellite imagery (e.g., Geospatial Data Analysis and Landsat)

Market Demand

Public health records (pandemic, epidemic predictions)

Shelf life per commodity

Leverage Point 5
Predictive forecasting

1 Predictive forecasting exists but is only utilized by a portion of growers / retailers

Large retailers have forecasting pretty dialed in

2 Areas for opportunity

Predictive models are only as good as the data used

As seasons / weather get more unpredictable due climate change, how is this being tied into the predictive forecasting of demand?

Cost prohibitive for some, useful to only large-scale operations

3 How might predictive forecasting help to make supply chains more flexible?

Innovate on data types used

Can create a more adaptive / flexible marketplace if more types of data are forecasted

More contributions of data from across supply chain members and increased access to/utilizing forecasting tools

Leverage Point 6
Extending Shelf Life

1 Items begin to decay the moment they are picked, must last until they get to the consumer

Timeline includes picking, (processing), packaging, transportation, arrival at retailer, sale, consumer

2 Limited shelf life means greater potential for waste

3 How might extended shelf life reduce waste?

Placing value on shelf life and working to extend it could reduce loss and waste

Innovation to extend shelf life (cold chain, processing, transportation improvements)

Regional sourcing (or tiered distribution - matching shelf-life limit and destination)

Retailers pay for items with longer shelf life - better quality, better for customers

Big data and better tracking of products

Use shelf life as a metric across the supply chain

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Leverage Point 7

Dynamic transport systems

1 There are major flaws with the current trucking and transport system

- Trucks used to make trips half full
- Regulation on how long drivers can be on the road in a single stretch without breaks
- Population of drivers is decreasing—aging out and less going into the business

2 How might food suppliers and purchasers engage with truckers?

3 How can transport and trucking operations function dynamically to increase utilization of surplus?

Innovated transport patterns, planning, and distribution could make better use of the limited time to transport food

- Trucking shifts - pass off load like a relay, could shorten the transportation time (might take more time)
- What would it take to digitize and merge all trucking routes? Uber / Lyft type matchmaking - use their resources to help innovate
- How might we update the rail system to improve delivery times of fruits and vegetables?

Leverage Point 8

Grower collaborations for value-add processing of surplus product

1 Surplus exists on farms that is too small to be valuable on its own

- Value-add processing equipment is costly for an individual grower to purchase and maintain
- Harvesting and processing a small quantity of "seconds" is often not profitable—or even enough to cover the costs of picking and packing

2 A lot of moving parts would need to come together

- Leadership
- Retrofitting a model for secondary product
- Marketing from uncommon supply chain members, like logistics and cold storage companies

3 How might it be possible for growers to aggregate surplus and find innovative ways to process and sell the product(s)?

Models exist that are profitable and increase access to food; the equipment and resources exist, just need to be brought together

- Oregon Food Infrastructure Gap Analysis, Seal the Season Business Model

Leverage Point 9

Support and grow regional partnerships like PCC

1 The Pacific Coast Collaborative (PCC) was created through alignment across major players

- Jurisdiction leaders of CA, OR, WA, and British Columbia
- Retail industry leaders and their supply chain vendors, as well as nonprofit resource
- Partners working together in a pre-competitive environment to reduce waste on a large scale
- Parties invested in multiple initiatives to reduce carbon

2 Will this be replicable?

Existing examples:

- Based on the Courtauld Commitment in the UK—which just achieved a 7% reduction in both GHG and food waste per capita
- The Pacific Coast region is unique in its unity on progressive issures

3 How might the PCC be a model for change across the US?

Business Case for reducing carbon emissions through sustainable business operations

- Research performed on prospective regions - taking funding ability into account
- Continue engagement with national brands and retailers
- Tap on unexpected partners - logistics companies, private equity owned businesses