

# MIT Food & Sustainability Working Group Report

NOVEMBER 2018



Office of Sustainability

MIT Office of Sustainability  
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## EXECUTIVE SUMMARY

### *A Food System for a Sustainable MIT*

In October 2017, the MIT Food & Sustainability Working Group set out to have a conversation about the MIT food system—one that bridged the areas of food insecurity, student and retail dining, campus construction, education, culture, and technology. Over the course of eight months, the group examined the cultural, administrative and environmental dimensions of the MIT food system, resulting in a set of recommendations for operationalizing sustainability across campus life and operations.

In this report, the Working Group presents its five key recommendations, accompanied by a set of actionable short-, medium-, and long-term strategies, as well as suggestions for which departments, labs, and centers might effectively take the lead on each. The group believes that MIT has the capacity to create a model sustainable food system through collective leadership models that bring together administrative, student and educational partners.

The Working Group presented these recommendations to MIT leadership in the Executive Vice President and Treasurer's Office and the Division of Student Life in October, 2018. With their support and guidance, the group is now moving forward with a plan to prioritize and implement these recommendations over the next five years. The following table summarizes the five key recommendations.

### *Five Working Group Recommendations*

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**1: Access and Empowerment**

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Ensure access to affordable, sustainable, and culturally meaningful food and empower consumers to make informed choices.

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**2: Shared Standards for Vendors**

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Manage vendor relationships related to the procurement, preparation, and disposal of food (and materials and services) according to shared environmental, economic, and socially just standards.

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**3: Comprehensive Waste Reduction**

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Develop and implement comprehensive waste reduction strategies within the MIT food system.

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**4: Vibrant Indoor and Outdoor Spaces**

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Design, maintain, and connect vibrant indoor and outdoor spaces on campus that foster strong social connections and incorporate localized production of food.

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**5: Innovation and Experimentation**

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Harness the Institute's power of innovation and experimentation to create a model campus food system of the future.

## SECTION 1. INTRODUCTION

### Overview

The MIT Office of Sustainability (MITOS) facilitates a collaborative, multi-departmental working group process to lay the foundation for an MIT that re-imagines, invents, and models campus-based solutions to the challenges posed by a changing planet. Our campus food system is one of these complex challenges – a system that relies upon farms and people, water and energy, packaging and chemicals, health and culture.

The World Economic Forum raised a critical question in a [2017 report](#): “How will food systems nutritiously and sustainably feed 8.5 billion people in 2030?” The Food & Sustainability Working Group scaled this question down to the campus level, grappling with how to sustainably feed our urban campus, educate consumers and future leaders, and demonstrate innovative solutions in our own cafes and open spaces. The group developed five recommendations, backed by actionable short-, medium-, and long-term strategies to consider implementing over the next five years.



Photograph by Jake Belcher

### The Working Group

In October 2017, MITOS, with the support of the Executive Vice President and Treasurer’s Office and the Division of Student Life, launched the Food & Sustainability Working Group to explore the cultural, administrative, and environmental dimensions of the MIT food system and recommend strategies for integrating sustainability into campus life and operations. The group met monthly until June 2018, concluding with a set of recommendations. The group was facilitated by MITOS project manager Susy Jones and included the following members:

- **Jinane Abounadi**, MIT Sandbox Innovation Program, School of Engineering
- **Naomi Carton**, Residential Education
- **Dennis Collins**, Housing and Residential Services
- **Peter Cummings**, Division of Student Life
- **Thayer Donham**, Campus Construction
- **Hildreth England**, Open Agriculture Initiative at the Media Lab
- **Christina Lo**, Office of the Vice President for Finance (VPF)
- **Caitlyn McCourt**, MIT Medical
- **Pam O’Neil**, Office of the Vice President for Finance (VPF)
- **Heather Paxson**, Anthropology Program
- **Briana Pero**, Graduate Student, Sloan School of Management
- **Morgan Pinney**, Campus Planning
- **David Randall**, Office of the Dean for Student Life
- **Andi Sutton**, Abdul Latif Jameel World Water & Food Systems Lab (J-WAFS)
- **Julie Newman**, Office of Sustainability

## Shared Principles

In 2015, MIT's first cohort of [Sustainability Working Groups](#) established a set of shared principles to guide and align departments as they integrate sustainability into their day-to-day work. Based on a common vision that acknowledges the deep and vital connection between thriving communities and healthy ecosystems, our continuous commitment to these principles is crucial to the successful implementation of the recommendations presented here.

**Stewardship:** Steward urban land resources and plan comprehensively for a campus that supports the health and well-being of the MIT community and surrounding living systems.

**Life-cycle thinking:** Adopt strategic and mindful decision-making frameworks that consider the full life-cycle costs and impacts of MIT's operations and management on our social, economic, and ecological systems.

**Resiliency:** Design sustainable campus and ecological systems with the dynamic capacity to absorb, recover, and/or successfully adapt to unexpected and changing conditions.

**Innovation and demonstration:** Innovate and demonstrate solutions to shared local, regional, and global sustainability challenges.

**Transparency:** Prioritize decision-making platforms that accelerate transparency, collaboration, innovation, and accountability.



## SECTION 2. RECOMMENDATIONS FOR FOOD & SUSTAINABILITY AT MIT

The Food & Sustainability Working Group developed five key recommendations for advancing a sustainable campus food system over the next five years. Some of these recommendations are already in motion and require continuous commitment and teamwork to ensure that they are successfully implemented, while some are new ideas that would require additional resources and new partnerships to be formed. The group developed a list of suggested strategies for activating each recommendation. These strategies are divided into short (<1 year), medium (1-3 years), and long-term (3-5 year) categories, based on considerations of priority and feasibility.

Launching the MIT food system into a sustainable future will require leadership and partnerships across MIT's operational, student life, student group, and academic divisions. In addition to continued facilitation and support from MITOS, additional partners are cited within each recommendation area to provide direction for creating an implementation plan.

The five recommendations are as follows:

- 1 Access and Empowerment:** Ensure access to affordable, sustainable, and culturally meaningful food and empower consumers to make informed choices.



- 2 Shared Standards for Vendors:** Manage vendor relationships related to the procurement, preparation, and disposal of food (and materials and services) according to shared environmental, economic, and socially just standards.
- 3 Comprehensive Waste Reduction:** Develop and implement comprehensive waste reduction strategies within the MIT food system.
- 4 Vibrant Indoor and Outdoor Spaces:** Design, maintain, and connect vibrant indoor and outdoor spaces on campus that foster strong social connections and incorporate localized production of food.
- 5 Innovation and Experimentation:** Harness the Institute's power of innovation and experimentation to create a model campus food system of the future.

## Recommendation 1: Access and Empowerment

Ensure access to healthy, affordable, sustainable, and culturally meaningful food and empower consumers to make informed choices.

### Background

A report published in March 2018 by the [MIT Food Insecurity Solutions Working Group](#) was a remarkable effort to identify the scope of hungry students on campus and offer a set of potential solutions. The report found that 2 to 8 percent of MIT graduate students and as many as 13 percent of MIT undergraduates do not have enough to eat. Issues of food insecurity and sustainability intersect in many ways, and the Food & Sustainability Working Group discussed how to augment existing data about the MIT community's needs and enhance the solutions presented in the report.

As the United Nations [Sustainable Development Goals](#) articulate:

*Among the great challenges the world faces is how to ensure that a growing global population - projected to rise to around 10 billion by 2050 – has enough quality food to meet their nutritional needs for a healthy life. This for a planet experiencing increasing water and land scarcity, soil, land and biodiversity degradation and more frequent and severe weather events. The impact of climate change on agriculture compounds the situation. (Food and Agriculture Organization of the United Nations)*

Providing *affordable* food is not enough, as this statement from the UN illustrates. To meet a community's nutritional needs in today's world, we must simultaneously consider the nutritional quality and sustainability of the food.

MIT is also a culturally diverse community, where 10% of our undergraduates and 41% of our graduate students are international students. Providing culturally meaningful food – which in many cases opens up more environmentally friendly, plant-based options – is also important to building a sustainable campus food system. Finally, creating a healthy food culture will also require providing quality information to empower the entire community to make more thoughtful choices.



MIT One World Festival  
Photograph by Jake Belcher

### Suggested Strategies for Action

#### Short Term (<1 year)

- Partner with MIT Human Resources to develop an understanding of employee food insecurity (related to campus food options) and nutrition-related wellness by incorporating questions into future Quality of Life surveys (i.e. the ability to access balanced meals on campus) so that the campus can explore potential solutions. (*Partners: MIT Human Resources, MIT Medical*)

#### Medium Term (1-3 years)

- Develop a comprehensive food recovery and food donation program that addresses food security on both the MIT campus and within surrounding community. (*Partners: MIT Dining, MIT Government and Community Relations*)
- Adopt [Menus of Change](#) principles (which provide guidance for the foodservice industry) for MIT Dining menus – a core principle is to “Celebrate cultural diversity and discovery.” (*Partner: MIT Dining*)



### Long Term (3-5 years)

- Increase availability of food-related wellness courses and events targeted toward students, faculty, and employees. (i.e. courses on gardening, nutrition and cooking) (*Partners: MIT Medical, MIT DAPER, MIT Dining*)
- Incorporate food and nutrition actions into GetFit, the annual fitness challenge. (*Partner: MIT Medical*)
- Design and incorporate a sustainable food label or marker on food items across retail and dining locations. (*Partner: MIT Dining*)
- Incorporate criteria (and educational programming) for healthy, sustainable, and culturally meaningful foods into the development of a low-cost grocery store, as recommended by the Food Insecurity Working Group. (*Partner: MIT Dining*)



Regionally sourced corn at the Samberg Conference Center.  
Photograph by Ken Richardson

## Recommendation 2: Shared Standards for Vendors

Manage vendor relationships related to the procurement, preparation, and disposal of food (and materials and services) according to shared environmental, economic, and socially just standards.

### Background

MIT's food operations have broad—sometimes unseen—impacts on people and the environment across the globe. These impacts include greenhouse gas emissions related to energy and transportation, water system impacts, deforestation, and human and labor rights issues. In support of recent commitments to climate action and sustainability at MIT, the Working Group recommends that MIT commit to deepening the understanding of the human and environmental impacts of its food system, and changing its current practices to reflect a positive, regenerative approach.

Given that MIT's food and waste management systems are managed in partnership with an array of vendors – ranging from Bon Appetit to La Verde's Market and from Casella to Food for Free – it is critical that MIT develop shared sustainability criteria that drive sustainable action across all of these vendor relationships to create a unified MIT food system.

This work is already underway. During the spring of 2018, the MIT Office of Sustainability participated in a committee of students, faculty heads of house, and staff from the Division of Student Life to recommend a contractor to manage house dining, retail dining, and catering operations at MIT, ultimately selecting Bon Appétit and Restaurant Associates to take on the new, expanded contract. Sustainability criteria were a component of the selection process, and there is a significant opportunity within this new contract to take bold action on sustainability.

### Suggested Strategies for Action

#### Short Term (<1 year)

- Develop a written sustainability plan during the first year of the new dining contract (contract began July 2018) for implementation during year two of the contract. This is in line with

details of the current contract, which call for an annual strategic action plan with sustainability and wellness actions to be submitted in August 2019. Areas of focus might include: sustainable procurement, food waste and recovery, food security, climate change, healthy economies, wellness, and education and research. (*Partners: MIT Dining, Office of the Vice President of Finance*)

To support the above strategy, the group recommends the following:

- Develop a set of key performance indicators (KPI) to measure the sustainability performance of the vendor, i.e. progress toward meeting 30 percent local food purchasing spend (in existing contract);
- Include representation from Sustainability staff on dining committee(s) to review key performance indicators and develop strategic action plans moving forward;
- Collect data and establish campus baselines for food operations and purchasing to determine what food is currently purchased, in what volume, at what cost, from where, from whom, how, and with what attributes;
- Develop additional data-driven goals for sustainability performance for vendors.
- Integrate stronger sustainability criteria into preferred caterer RFP in 2020; consider assigning special sustainability designation to preferred caterer(s) that demonstrate highest level of achievement. (*Partners: Office of the Vice President of Finance, MIT Dining*)

### Long Term (3-5 years)

- Create standard RFP and contract language for food vendors that highlights MIT's commitment to sustainability and includes principles for operations and reporting. (*Partners: Office of the Vice President of Finance, MIT Dining*)
- Select new vendors (i.e. campus retail spaces, food trucks, pop ups in open spaces) utilizing this language and criteria. Incorporate attributes such as healthy food, MIT alumni-owned, sustainable operations, and diverse and inclusive community partnerships into this criteria. (*Partners: MIT open space planning, Office of the Vice President of Finance, MIT Dining, MITIMCo*)

## Recommendation 3: Comprehensive Waste Reduction

Develop and implement comprehensive waste reduction strategies within the MIT food system.

### Background

Research into MIT's waste stream suggests that MIT generates roughly 606 tons of food waste per year, about 11.6 tons per week. In 2016, MIT diverted about 178.5 tons of this food waste (29% of total) through its compost program, which suggests there is room for further progress<sup>1</sup>. It is not just food waste that is a concern, but also the thousands of single use containers, plates, and cutlery items that the MIT community consumes every day at retail locations and catered events.

There is great interest from both administrators and student groups at MIT (such as the graduate and undergraduate committees on sustainability and the Waste Alliance) to find more innovative solutions to MIT's complex, but solvable, waste challenges.



1: Data derived by a MIT Material Flow Analysis: <https://sustainability.mit.edu/material-flow-analysis>

Existing waste-reduction programs such as the “green box” initiative at the MIT dining halls are good models for learning and possible expansion. The Working Group feels it is critical to continue this momentum and implement further strategies to address food-related waste at MIT, both at its source and by the time it ends up in disposal bins.

### ***Suggested Strategies for Action***

#### **Short Term (<1 year)**

- Establish an accurate baseline for food waste on campus and create a food waste dashboard via the Sustainability Data Pool (managed by the Office of Sustainability) that is open to the MIT community. *(Partners: MIT Dining, MIT Materials Management & Recycling)*
- Explore feasibility of requiring dining vendors to use waste tracking software such as Lean Path, or similar. *(Partners: MIT Dining)*
- Utilize reusable serviceware at dining and retail locations wherever feasible. *(Partners: MIT Dining, GSC Sustainability, UA Sustain, Waste Alliance)*
- To reduce disposable coffee cups, begin a recognizable campaign with a universal incentive to bring a reusable mug when buying coffee at all campus retail locations. *(Partners: MIT Dining, GSC Sustainability, Waste Alliance)*

#### **Medium Term (1-3 years)**

- Increase reusable serviceware on campus for large events through a rentable reusable program or other strategy. *(Partners: MIT Institute Events, Campus Activities Complex, GSC Sustainability, UA Sustain, Waste Alliance)*
- To reduce plastic bottles, increase availability and attractiveness of tap water through a sponsored campaign that entices MIT community to drink more tap water and install more water bottle refilling stations. *(Partners: MIT Dining, J-WAFS, MIT Facilities)*

#### **Long Term (3-5 years)**

- Design and launch a campus-wide food waste reduction campaign. *(Partners: MIT Dining, Recycling and Materials Management, UA Sustain, GSC Sustainability, Waste Alliance)*
- Create uniform, recognizable waste systems across dining and retail locations to avoid confusion and decrease contamination. *(Partners: MIT Dining, Recycling and Materials Management, UA Sustain, GSC Sustainability, Waste Alliance)*



East Campus Courtyard. Photograph by Theresa Machemer

## Recommendation 4: Vibrant Indoor and Outdoor Spaces

Design, maintain, and connect vibrant indoor and outdoor spaces on campus that foster strong social connections and incorporate localized production of food.

### Background

The Working Group spent many meetings discussing the deep connection between campus spaces and food behavior. Throughout the months of conversations, the group heard from community members about the challenges in finding places (and finding the time) to come together and enjoy healthy, affordable meals together on MIT's campus. There was a shared desire to create more inviting places in and around MIT to share a meal, get away from the desk or lab bench for an hour, and socialize in the vibrant ecosystem of MIT.

It became clear that building a sustainable food culture at MIT would need to go beyond education and vendor engagement. While these are critical, the physical design and visibility of campus food spaces (i.e. the places where we purchase, consume, cook and even grow our own food) arose as a critical factor for promoting long-term, healthy behavior changes.

### Suggested Strategies for Action

#### Short Term (<1 year)

- Create an open source, community-driven interactive food map. (*Partners: MIT Media Lab, Environmental Solutions Initiative, Division of Student Life, IS&T*)

This map would align with the Food Insecurity Working Group's recommendation to analyze and bring attention to campus dining and food retail options. The interactive, open source map could make healthy, sustainable choices more affordable and attractive to the campus community.

#### Mid Term (1-5 years)

- Support Campus Planning and MIT Facilities in reviewing and incorporating Fitwel criteria (a building certification based on health promoting strategies) into compatible pilot projects. (*Partners: Campus Planning, MIT Facilities*)



Plant-forward lunch at the Samberg Conference Center. Photograph by Ken Richardson

- Establish campus-wide standards for designing and renovating indoor and outdoor food spaces (i.e. DLC kitchens, breakrooms, public open spaces, dining halls, cafes) that promote healthy food choices, social connections, and sustainable management of waste, energy and water. (*Partners: Campus Planning, MIT Facilities, MIT Dining*)

### Long Term (3-5 years)

- Incorporate a network of urban agriculture projects throughout indoor and outdoor spaces of the campus landscape, as both a means for research and education as well as a system for producing local food. Off-campus facilities (i.e. Endicott House, Bates Research and Engineering Center, etc.) could also be utilized. (*Partners: MIT Dining, MIT Facilities, Campus Planning, student groups*)

## Recommendation 5: Innovation and Experimentation

Harness the Institute's power of innovation and experimentation to create a model campus food system of the future.

### Background

Given the Institute's [commitment](#) to transforming MIT into a test bed for sustainable solutions, the Working Group pondered a central question: How might MIT leverage its strengths in research and innovation to inform MIT's own food system?

In MIT's labs and classrooms, students, researchers and faculty are solving challenges in the food system in creative, experimental ways. Initiatives such as MIT Sandbox, which provides seed funding for student-initiated entrepreneurship ideas, reported 46 student projects working in the food innovation space, like healthy vending machines and edible utensils that reduce plastic waste.

Research initiatives such as the Open Agriculture Initiative and the Disruptive & Sustainable Technologies for Agricultural Precision (DiSTAP) are using sensors and open technology platforms to explore how to advance high density, urban farming. Classes in management, engineering, anthropology, urban studies and beyond are exploring the important relationships between food, land, water, climate, and economies. Every year, MIT gives rise to food innovators and entrepreneurs who go on to develop healthy eateries and inventions, from restaurants and food



[Spoyce](#), a robot-assisted restaurant in Boston, was invented by MIT alumni to provide healthy, low-cost food. Photo: Spoyce

trucks such as Clover Food Lab, Spyce, and Fresh Food Generation, to workplace solutions such as Bevi, the “smart water cooler” that seeks to reduce plastic water bottle consumption.

MIT’s unique work addressing food challenges is strong, but not always visible in the everyday food culture of MIT. There is an opportunity to create channels to make this faculty, student, researcher, and alumni work more visible, and thereby enhance the food system of MIT. Below are strategies for achieving this.

### ***Suggested Strategies for Action***

#### **Short Term (<1 year)**

- Create and maintain an inventory of MIT food ventures and projects sprouting from departments, labs, centers, and innovation prizes, such as: Solve, Sandbox, Abdul Latif Jameel World Water & Food Systems Lab (J-WAFS), and the Rabobank-MIT Food and Agribusiness Innovation Prize. (*Partners: MITOS, J-WAFS, Sandbox*)

#### **Medium Term (1-3 years)**

- Amplify MIT food innovation and research across campus via educational displays, news articles, pop-up demos in open spaces, and other visibility campaigns. (*Partners: MIT open space planning, MIT Dining, MIT News*)
- Create student fellowships and UROP positions to study operational opportunities to make the current MIT food system more sustainable. (*Partners: Environmental Solutions Initiative, Office of the Vice President of Finance, MIT Dining*)

Topics may include but are not limited to:

- Incorporating urban gardening into the MIT campus;
- Targeting waste reduction in the food system;
- Identifying large purchases in food procurement that are not currently local or sustainable, and opportunities to find alternatives;
- Measuring the carbon and water impact of our food operations on campus.



Members of the Food and Sustainability Working Group seek input at annual Sustainability Connect meeting. Photograph by Ken Richardson

### Long Term (3-5 years)

- Expand the incorporation of well-tested MIT ventures and inventions into new and existing food spaces, such as the second floor of W20. Consider pop-up or rotating vendors that feature MIT innovation. (*Partners: MIT Dining, MIT open space planning, MIT Facilities, Campus Activities Complex*)
- Engage student, staff, and research partners in operations and academic departments to design a community garden, controlled-environment agriculture farm, or other garden lab, and incorporate campus-grown food into MIT dining and retail where feasible. (*Partners: MIT Dining, UA Sustain, Environmental Solutions Initiative, Media Lab Open Ag, other academic and research units*)

## SECTION 3. CONCLUSION

Momentum to build a sustainable food system at MIT is intensifying in a myriad of ways: a new, expanded contract with Bon Appetit and Restaurant Associates, groundbreaking food innovation and research taking place within our academic departments, and bold commitment to Institutional transformation via the [Pathway to Sustainability Leadership](#).

The stage is set to prioritize and implement the recommendations presented in this report with partners across the Institute. The Office of Sustainability will continue to support this process as MIT embarks on a sustainable future.

## SECTION 4. RESOURCES

Below are additional resources, referenced in the report, that will help contextualize and support an understanding of the recommendations.

### MIT Resources:

- [MIT Working Group Report](#)
- [MIT Food Insecurity Report](#)
  - [MIT News: Food Insecurity Solutions Working Group releases findings](#)
- [MIT Dining](#)
  - [MIT News: Compass Group to manage new food and dining contract](#)
- [MIT Climate Action Plan](#)
- [Pathways to Sustainability Leadership by MIT](#)

### External Resources:

- [Menus of Change](#)
- [United Nations Sustainable Development Goals](#)

