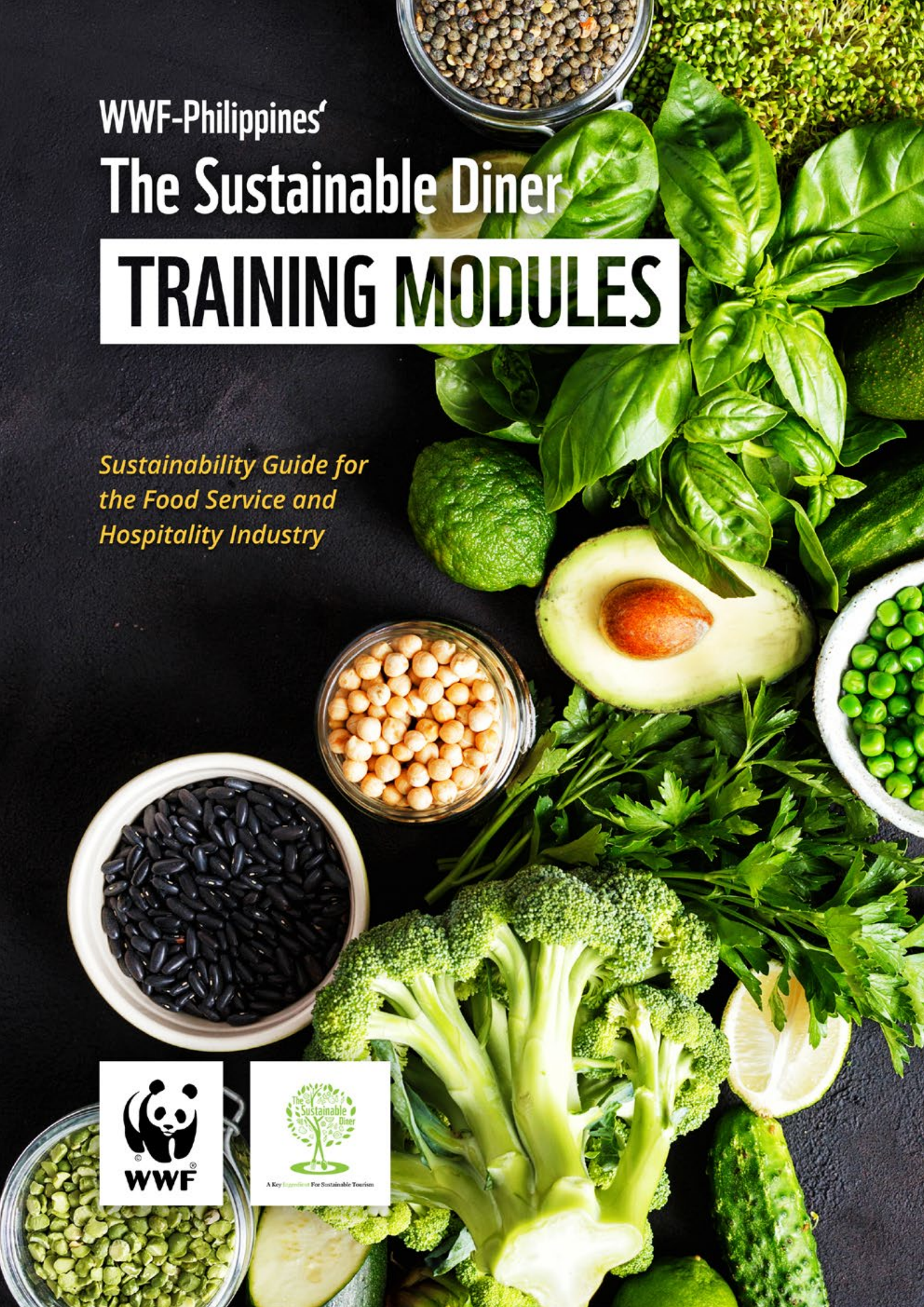
WWF-Philippines

The Sustainable Diner

TRAINING MODULES

Sustainability Guide for the Food Service and Hospitality Industry



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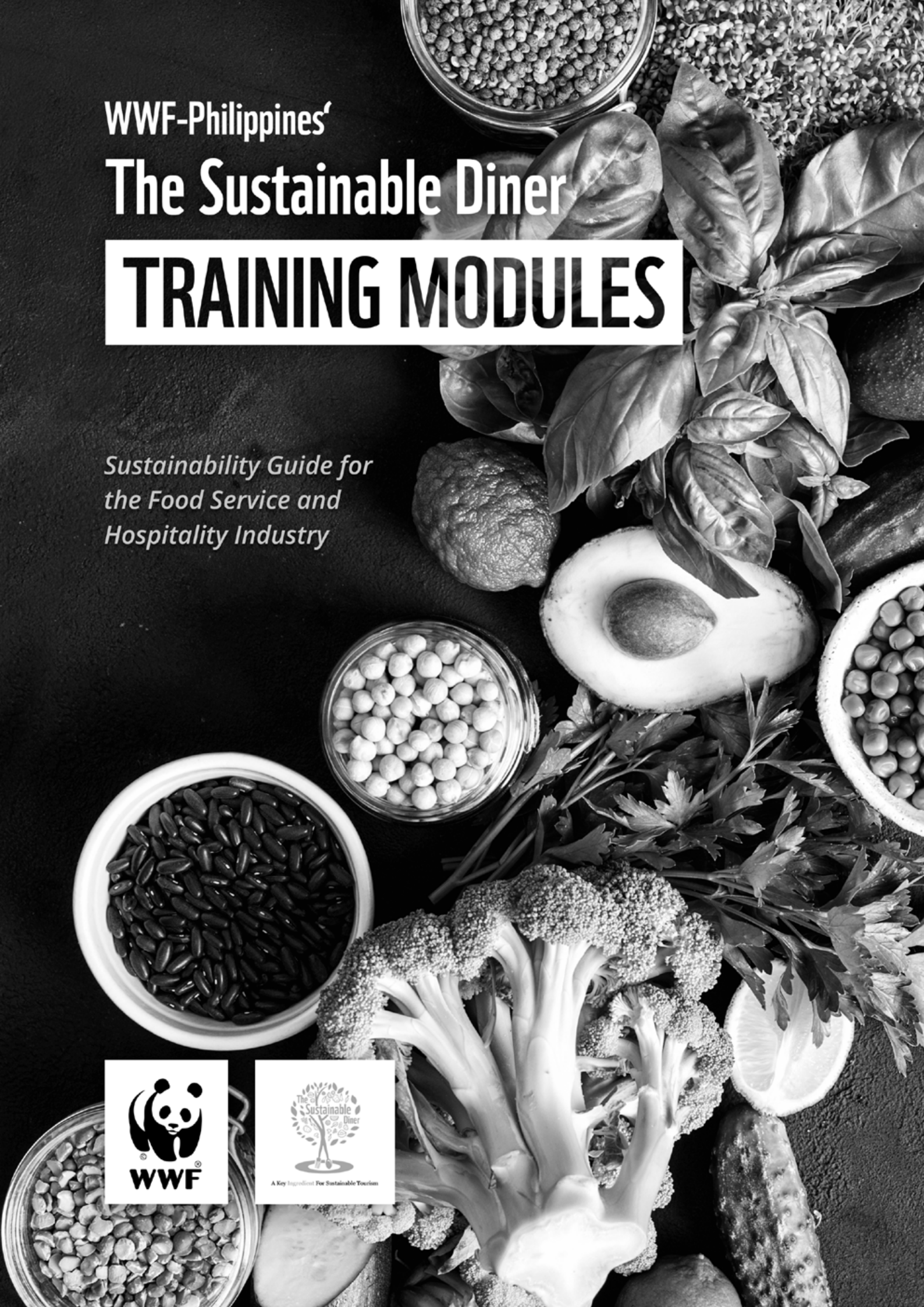

WWF

The Sustainable Diner

A Key Ingredient For Sustainable Tourism

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WWF-Philippines has been working as a national organization of the WWF network since 1997. As the 26th national organization in the network, WWF-Philippines has successfully been implementing various conservation projects to help protect some of the most biologically-significant ecosystems in Asia.

WWF-Philippines works to improve Filipino lives by crafting solutions to climate change, providing sustainable livelihood programs, and conserving the country's richest marine and land habitats.

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FOREWORD

The Sustainable Diner Project was born out of the shared goal of having food systems that nurture the environment, and that recognises the important role of the food service and hospitality industry in fixing the disconnect in our relationship with food, and with nature.

When we talk about issues of the environment, we often think about pollution, losing trees and wildlife, extreme weather events, melting glaciers, etc. We seldom associate our daily meals with the climate crisis and environmental degradation. In order to produce food, we utilize our natural resources like fresh water and soil nutrients for planting, energy for cooking, and fuel for transport. All of these resources are finite – despite that, we waste one-third of the food we produce, which rots in landfills and contributes to the climate emergency. Food service establishments are witnesses to the food waste we generate everyday, and on top of that, they have a business interest in reducing food waste.

Since 2017, WWF's The Sustainable Diner team has engaged hotels and restaurants on a journey of reducing food waste, to overwhelming support.

These modules, put together by the WWF team, contain the information and lessons learned over the course of The Sustainable Diner Project. The modules are designed to be used in training hotel and restaurant employees on reducing the negative environmental impacts of the business, and increasing cost-efficiency.

I hope that the lessons in these modules will help your businesses thrive and at the same time, contribute to the work of saving our planet, one meal at a time.

Katherine Custodio
Executive Director, WWF Philippines

CONTENTS

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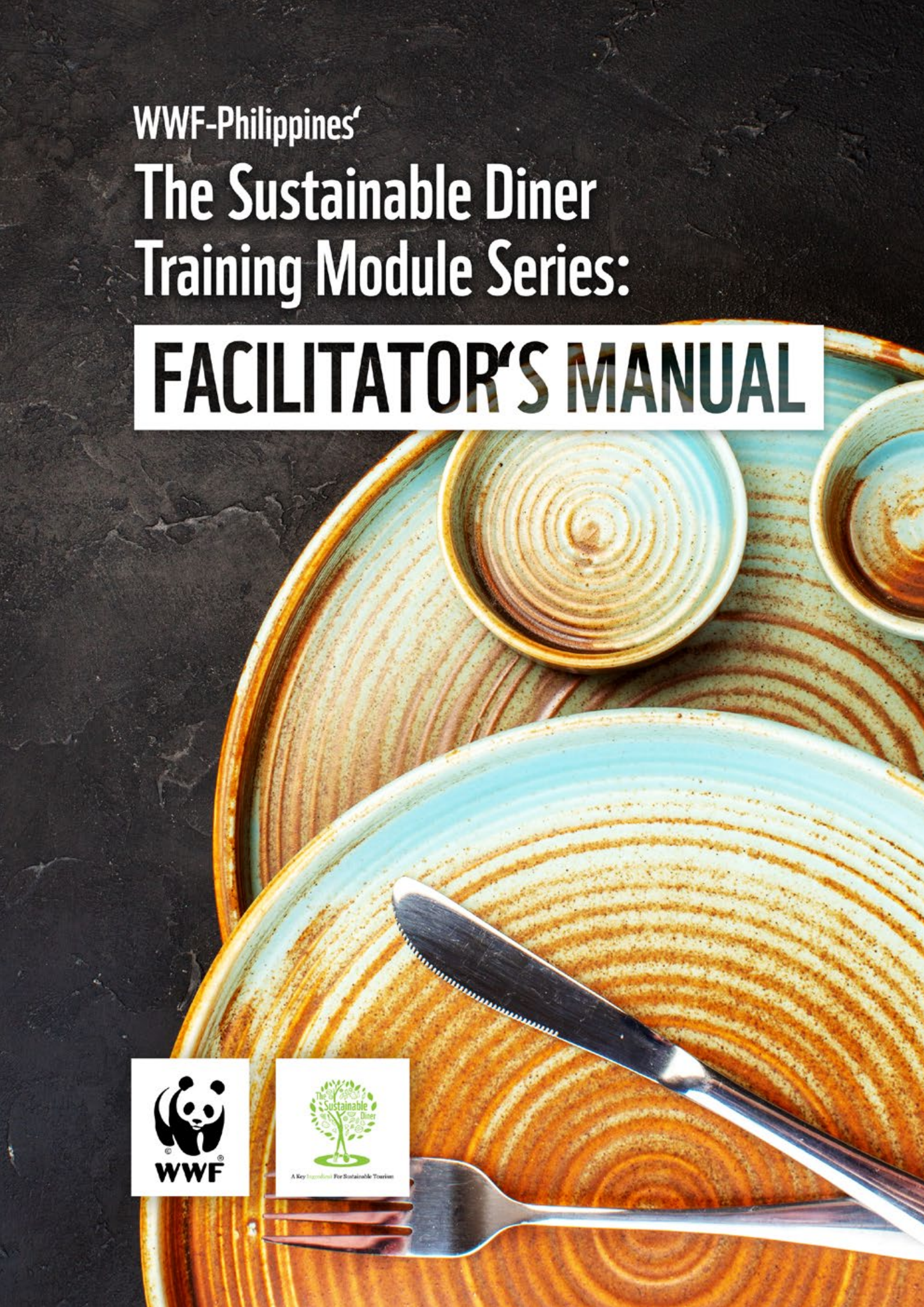
The Sustainable Diner Training Module Series:

FACILITATOR'S MANUAL



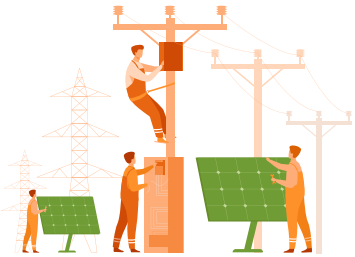
CONTENTS

ABOUT THE MANUAL

Why was this manual created?

The Sustainable Diner Project aims to assist food service establishments in fixing our broken relationship with nature through long-term business plans as we transition to a post-pandemic better normal. This manual is intended to provide guidance on how to increase overall Employee Green Behavior especially around the five (5) sustainable principles being promoted by the project:

Promotion of Local and Sustainable Sourcing



Efficient Use of Resources such as Energy and Water

Reduction of Food Waste

Reduction of Single-Use Plastics

Promotion of Plant-based/ Less Meat Consumption

This manual was created to complement the TSD training module series

- Efficient Use of Resources
- Food Waste Management
- Food Waste Diversion
- Planet-based Diet
- The Plastics Problem and Lessening Single-Use Plastics for Sustainable Diners
- Plant Your Plate: 6 Basic Steps of Urban Container Gardening

These modules will show you the importance of each practice and some tips you can apply in your facilities. Use them as capacity building resources to start your sustainability journey.

At the end of this module, facilitators are expected to:

1. Recognize the need to start a sustainability initiative;
2. Outline the participatory learning and action cycle;
3. Apply principles of Appreciative Inquiry during the planning and execution of a sustainability initiative;
4. Conduct training needs assessment, participatory capacity development activities, and monitoring and evaluation measures; and
5. Develop your own sustainability program.

Who is this manual for?

This manual is intended to assist decision makers, human resource or training departments to become facilitators of learning.

Where do I go if I have more questions?

For more information, please contact:
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INTRODUCTION

WE only have until the year 2030 to prevent irreversible damage to our planet (United Nations, 2019). The United Nations (UN) has set the goal of keeping the temperature rise below 2ºC compared to pre-industrial levels. One of the ways to achieve this goal is to reduce food waste since currently, 1.3 billion tons of food are wasted yearly (United Nations, 2019). The food and hospitality industry are at the forefront of fighting food waste. To emphasize, these industries' employees witness food wastage on a daily basis varying from leftovers to stocks that have gone stale or expired (Goh & Jie, 2019). With this in consideration, employee engagement is the key to fighting food waste within their facilities.

Food and plastic waste have been major environmental challenges for the food and hospitality sector (Filimonau, 2020). The COVID-19 pandemic has made it even more challenging for these sectors, not only to fight these environmental challenges, but also to survive economically. Global forced lockdown has resulted in business closures; protective measures against COVID-19 led to reduction of operational capacity and enhanced hygiene restrictions (Filimonau, 2020). Businesses continue to thrive in the form of food takeaway and deliveries, and limited operational capacity following health and safety protocols. Although there was a temporary decrease in air pollution and beach trash due to low tourism activity, inorganic waste from food deliveries has increased and recycling activities has decreased (Zambrano-Monserrate, Ruano, & Sanchez-Alcalde, 2020). It is foreseen that there will be a rebound effect in consumer demand for food and hospitality services once vaccines become widely available while still adhering to health and safety protocols (Filimonau, 2020).

As the industry recovers from the crisis, let us take this opportunity to address both the economic and environmental challenges our world is facing today. Since we only have until 2030, we must employ effective capacity development activities to encourage pro-environmental behavior among employees. Studies have shown that food and hospitality sector employees have innate concern for the environment especially when faced with the decision to waste or not to waste food (Goh & Jie, 2019). Education and awareness campaigns are important to

fuel pro-environmental behaviors (Grilli & Curtis, 2021). However, top-down approach (traditional training) may not uniformly work as a means of adult environmental education across all employees (Unsworth, Davis, Russell, & Bretter, 2021). To build back better, we must employ effective capacity development activities like participatory learning process and tailored feedback.

This trainer's manual aims to lay out a participatory approach in facilitating capacity development activities of Sustainable Diners to increase overall Employee Green Behavior (EGB). This manual follows the flow of the Participatory Learning and Action Cycle. It contains guidance on how to practice Appreciative Inquiry, conduct training needs assessment, conduct group or departmental activities that can be coupled with informational materials from the TSD Training Modules, and monitoring and evaluation of diners' sustainability progress (CB monitoring tool).

As the last generation who can prevent irreparable damage to the planet, we owe it to the future generations to let go of our old practices and to be a more sustainable diner today.

INCREASING EMPLOYEE GREEN BEHAVIOR

Employee Green Behavior (EGB)

"Scalable actions and behaviors that employees engage in or bring about that are linked with, and contribute to, environmental sustainability."

- Ones and Dilchert, 2012

"Employee engagement in green behaviors, including employees' actions to perform work in an environmentally friendly way (e.g. recycling, rational use of resources, participation in environmental initiatives, setting or more green policies)."

- De Roeck and Farooq, 2017

As we transition to a better normal, for us and the environment, we are inviting the hospitality and food service sector to engage in efforts in increasing employee green behavior. Your industry is in the forefront of fighting food waste and other impacts brought by food production and tourism activities. The first step in becoming a more sustainable business is committing to sustainability goals.

Training has been found to be the most successful human resource management practice in promoting employee green behavior (AlSuwaidi, Eid, & Agag, 2021). However, top-down approach (traditional training) may not uniformly work as a means of adult environmental education across all employees (Unsworth, Davis, Russell, & Bretter, 2021). Aside from training, employees' suggestions, active exploration, and challenging existing processes contributes to the sustainability of environmental programs (AlSuwaidi, Eid, & Agag, 2021). Thus, employees' internal capabilities and organizations' participative enabling structures are key to achieving your establishments' sustainability goals.

HOW CAN SUSTAINABLE DINERS BRING OUT THE BEST OF OUR EMPLOYEES' INTERNAL CAPABILITIES?

Since the Covid-19 pandemic hit, we have been fighting a continuous wave of challenges. To rise up from these challenges, we need to transition from a deficit-based to a strengths-based perspective. In this manual, we would like to introduce the concept of appreciative inquiry as a tool to bring out your employees' internal capabilities.

HOW CAN SUSTAINABLE DINERS CREATE A PARTICIPATIVE ENABLING ENVIRONMENT?

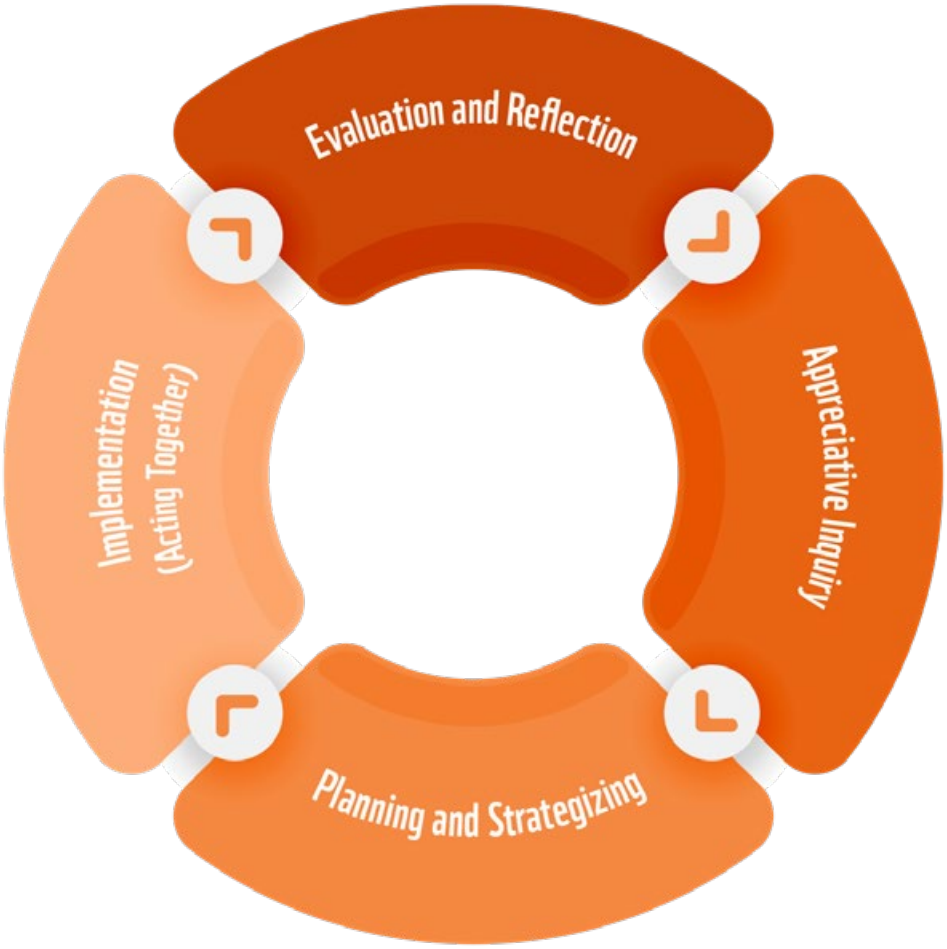
As Carl Rogers said, "A person cannot teach another person directly; a person can only facilitate another's learning (1951)." As we try to increase awareness of employees on sustainable practices, we must remember that we are only facilitators for learning. Having this in mind allows us to utilize participative capacity developments and opens up avenues for more employee engagement. In this module, we would like to introduce the **Participatory Learning and Action Cycle** in planning out, implementing, and evaluating your sustainability initiatives.

This manual will follow the 4 phases of Participatory Learning Cycle and will encourage you to apply Appreciative Inquiry principles wherever applicable.

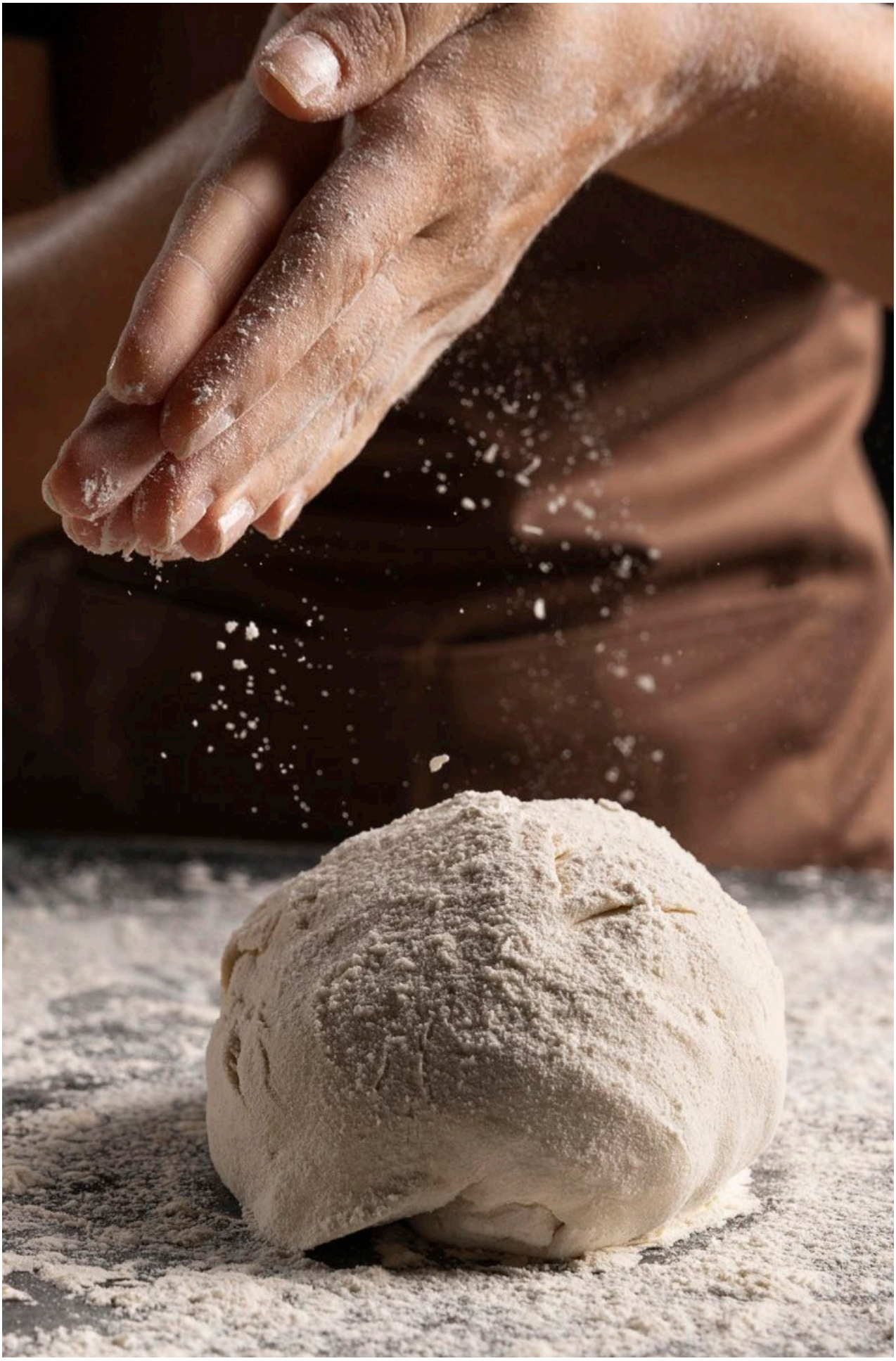
PARTICIPATORY LEARNING AND ACTION CYCLE

Employees of the hospitality and food service industry are at the heart of the success of sustainability initiatives. Policies will be useless unless they are practiced religiously. And it is our hope that sustainability principles are not only taken as company policy, but as a way of life. That's why the ultimate goal of this manual is to help you increase your total Employee Green Behavior.

Using the Participatory Learning and Action (PLA) cycle can harbor a participative enabling environment to bring out your employees' internal capabilities and innate concern for the planet. The goal is to avoid letting them feel that sustainability practices are an additional burden. The participatory learning and action cycle has four (4) phases and we will guide you through all of them.



Sources: Fottrell, et al., 2016, Mittra, et al.



PHASE 1:
APPRECIATIVE INQUIRY

PLA usually starts with Phase 1 – Problem Identification and Prioritization. However, we want to transition from a deficit-based to a strengths-based perspective, so we will introduce a refreshing way of setting up your sustainability goals through Appreciative Inquiry.

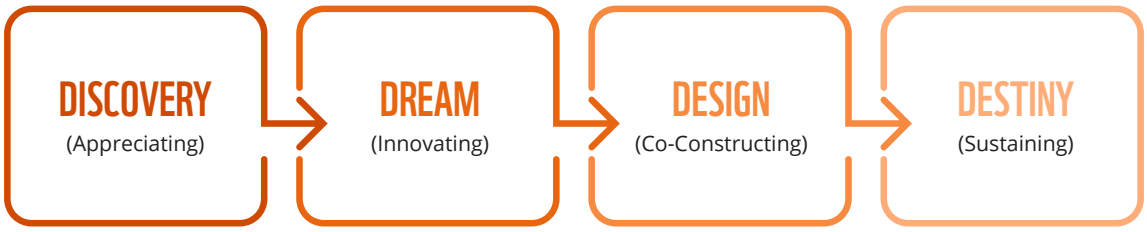
Appreciative Inquiry

"Appreciative Inquiry is a process of collective learning – a way to explore, discover, and appreciate everything that gives 'life' to organizations when they are most vibrant, effective, successful, and healthy in relation to their whole system of stakeholders." (Ludema & Fry, 2008)

Appreciative inquiry is used by businesses to include marginal voices, strengthen relationships between employee and management, spark innovation, and develop short- and long-term business results (Ludema & Fry, 2008). It is a strength-based process that enables participants to enhance cooperative capacity with the ultimate goal of inducing positive change.

How to use Appreciative Inquiry to set Sustainability Goals?

Appreciative inquiry focuses on bringing out strengths of employees and organizations through the 4-D model.



Source: Ludema & Fry, 2008

Definition of Terms

Discovery

Discovery is an opportunity to look for the highlights, enumerate positive traits of the organization, and analyze factors that made them possible. This is a process of involving your employees and asking them to map out your organizations' strengths and core competencies.

When you decide that you want to be a Sustainable Diner, start with checking in with your employees on your status quo. This stage will ultimately lead to your Needs Assessment, but instead of focusing on your problem areas, you start with what you are already good at.

Dream

Dream is an opportunity to reflect and envision new possibilities. Capitalizing on your strengths (identified from Discovery), this is a process of envisioning new possibilities for your organization. This is an invitation for you and your employees to collectively envision a positive future full of possibilities and select strategic opportunities to focus on.

Design

Design is an opportunity to create aspiration statements and design processes or structures to achieve them. This is the process of laying out strategies, and systems to build the future you 'dream' of.

Destiny

Destiny is an opportunity to construct your dream future through innovation and action. This entails personal commitments from all the members of the organization in a collaborative atmosphere. Destiny leads to Phase 2 of PLA.

PROPOSED ACTIVITY

A General Assembly can be a good avenue to gather insights from employees. If a physical General Assembly is not applicable, you may do it online, or intermittently.

FACILITATOR

Management can initiate, and the human resource or training department can facilitate.

TARGET PARTICIPANTS

Representative from every department; the more employees involved, the better.

PROPOSED ACTIVITY	OBJECTIVES	GUIDE QUESTIONS
DISCOVERY		
• 1-2-4 All type of meeting (Appendix A) • Survey (if gathering of employees virtually or physically at a single time is not applicable)	Map out strengths and opportunities within your organization that you can use to jump-start your sustainability initiative	1. What do you think are your strengths as an employee? 2. What do you think are the strengths of your team? 3. What do you think are the strengths of your organization? 4. What are your strengths in terms of environmental conservation and sustainability? 5. What activities are you doing that contribute to the overall environmental sustainability of your establishment? (Individually, as a team, as an organization) 6. What are the core competencies that you exhibit that allows you to do your existing sustainability efforts?
DREAM		
Focus Group Discussion per department, representative can present goals to the whole group. The whole organization can come up with their Sustainable Diner vision that encompasses the goals of each department.	Set Sustainability Goals.	1. What is your hope for your department? 2. How do you see your organization in the future in terms of environmental sustainability? 3. What could and should your organization become as you align with your people's personal and environmental hopes and aspirations?

		4. What kind of Sustainable Diner do you want to be? (which among the 5 principles do you want to pursue?) 5. By what timeframe do you want to achieve being the "Dream Sustainable Diner"? Follow SMART principle when setting goals (Specific-Measurable-Achievable-Relevant-Timebound).
DESIGN		
Solution Tree - modified problem tree (Appendix B), then Action Plan (Appendix C)	Map out necessary actions that needs to be taken to achieve Dream.	1. How can you use your strengths (from discovery) to achieve your dream Sustainable Diner? 2. Considering your strengths, what do you need to do, what systems do you need to put in place, what skills do you need to learn to achieve your dream?

PHASE 2:
PLANNING AND STRATEGIZING

For Phase 2, we will assist you in planning and strategizing how to use the strengths and core competencies to achieve your 'dream' Sustainable Diner.

During the design stage, you were able to list activities, systems, and skills you need to achieve your Dream. In phase 2, you can start with a training needs analysis to build the employee capacity needed to fulfill your goals. Then, establish your sustainability SOPs to prepare for implementation.

PROPOSED ACTIVITY 1

"**Training needs analysis (TNA)** is a systematic process conducted prior to designing a training program which involves determining the training needs at organizational, operational or individual level, identifying what kind of training is needed, and finally identifying who are the individuals that need to be trained or retrained." (Nazli, Sipon, & Radzi, 2014)

Training needs analysis – to surface what interventions are needed to bridge your strengths to reach your dreams.

FACILITATOR	Human Resources or Training department
TARGET PARTICIPANTS	Representatives from every department.

Here is a sample of a training needs analysis template. Each activity or system identified from the solution tree can be subjected to TNA. You can also answer the template with a specific designated person/role in mind per row.

WHAT THEY NEED TO BE ABLE TO KNOW OR DO	EXPECTATIONS OF THAT ROLE	ABILITY GAP	BRIDGING THE GAP	EVALUATING THE LEARNING	RESPONSIBILITY

Source: https://www.pocketbook.co.uk/blog/2018/04/03/training-needs□analysis□learning-needs-analysis/

To fill out each column, you may answer the following questions:

What they need to be able to know or do

- Employee Behavior - What do people need to do to generate the outcomes you want?
- Learning capabilities - What are the capabilities that people need so they will be able to do what you need them to do?
- Identify capabilities, knowledge, skills, or competencies needed.

Expectations of that Role

- What are the expectations of supervisors, managers, customers, or stakeholders that the designated person/role needs to satisfy

Ability Gap

- Gap assessment - What are the current levels of capability, and what do we need to train to get them to the desired level?

Bridging the Gap

- Prioritization - What do you need the designated person to learn the most?
- Learning or Training Approach - How will you transmit the knowledge and secure the learning, to ensure people gain the right levels of capability?

Evaluating the Learning

- Evaluation Criteria - How will you evaluate the work you did to train and educate your people?

Responsibility

- Roll out plan - How would you deliver the learning you have identified?
- Learning Facilitator - Who will lead in implementing this learning activity?

Appendix D shows an example of a TNA template. This example shows the need to utilize the TSD Training Module Series with participatory activities.

TSD TRAINING MODULE SERIES

The Sustainable Diner project has developed a training module series revolving around the five (5) principles of being a Sustainable Diner. These modules can help you develop capacities of your employees to fulfill your sustainability goals. If your TNA shows the need for any of these topics, you may access them through the following links:

Food Waste Management

Introduction to Food Waste Management Module 1
bit.ly/TSDFWM1

Food Waste Measurement Module 2
bit.ly/TSDFWM2

Food Waste Task Force Module 3
bit.ly/TSDFWM3

Food Waste Diversion

bit.ly/TSDFWD1

Planet-based Diet

Planet-based Diet Module 1: Planet-based Diets
bit.ly/TSDPBD1

Planet-based Diet Module 2: Adopting a Planet-based Menu in Meal Planning
bit.ly/TSDPBD2

The Plastics Problem and Reduction of Single-Use Plastics for Sustainable Diners

bit.ly/TSDPLASTIC

Efficient Use of Resources

Efficient Use of Resources Module: Journey of Water for Tourism
bit.ly/TSDWATER

Efficient Use of Resources Module: Efficient Use of Energy
bit.ly/TSDENERGY

Plant Our Plate; Urban Container Gardening for Sustainable Diners

bit.ly/TSDGARDEN

PROPOSED ACTIVITY 2

After building the capacity of your employees to fulfill your sustainability goals, you may now set up guidelines to include sustainability principles in your SOPs. Coupling the TSD training modules with participatory activities is an avenue to spotlight ideas from employees. This is one way of bringing out the best of your employees' internal capabilities. Considering that employees know the ins and outs of the operations, their solutions will be practical and doable under their current circumstance and within available resources. This might also increase compliance.

15% Solutions is a brainstorming method that allows people or groups to focus on what solutions are within their discretion instead of what they cannot change. (Liberating Structures)

FACILITATOR Human Resources, Training Department, or Team Manager

TARGET PARTICIPANTS Team Members

Do a 15% solution session after each TSD training module video. Group training participants per department. Each person should generate their own list of 15% solutions following the guide questions:

- What is your 15 percent solution?
- Where do you have discretion and freedom to act?
- What can you do without more resources or authority?

Individuals can share their ideas in a small group (4-5 members), consulting one another. Then eventually sharing the solutions to their whole team.

Basically, you want to bring out what solutions they can commit to do every day. The activity is called 15% because the solutions do not have to be big and overwhelming. It allows you to focus more on the little things that make an impact when it eventually adds up.

A 15% solution can be used to set up your sustainability SOPs. Each department can document the relevant solutions identified to form your SOPs.

You may use other participatory methods and visit liberatingstructures.com for other brainstorming ideas.

Do not forget to include these in your SOPs:

- ✓ A recording system for SOPs with measurable output
- ✓ Forms necessary for monitoring compliance
- ✓ Persons responsible for monitoring, record keeping, etc.
- ✓ An agreed upon timeline and protocol for regular evaluation

PHASE 3:
IMPLEMENTATION

After establishing your sustainability goals, building the capacity of your employees, and setting up SOPs to accomplish those goals, you are now ready to implement your sustainability initiative.

You can develop materials that communicate your agreed upon SOPs as a constant reminder for your employees. You can also have the TSD training modules available and accessible to employees in case they want to review some of the lessons.

During implementation, it is important to know the impacts of your sustainability SOPs. This will help you quantify your sustainability efforts and know if you are getting near your sustainability goals. The Sustainable Diner Project developed a Cost-Benefit Monitoring (CBM) Tool. This tool allows you to input information related to your sustainability practices for monthly monitoring. It also processes the information to show you the economic benefits of your sustainability initiatives.

To learn more about the TSD Cost-Benefit Monitoring tool, please visit bit.ly/CBArticle.

PHASE 4: EVALUATION AND REFLECTION

Now that you have an ongoing sustainability initiative, you can start Phase 4 – Evaluation and Reflection during your agreed upon timeline.

As mentioned in Phase 2, you should agree on a regular evaluation timeline and protocol. You can use the information from the Cost-Benefit Monitoring (CBM) Tool as your guide. You may use the principles of Appreciative Inquiry while doing your evaluation.

PROPOSED ACTIVITY

Evaluation and Reflection Meeting can be held per department initially, then team managers can elevate to management. If a physical meeting is not applicable, you may do it online, or intermittently.

FACILITATOR	Team managers
TARGET PARTICIPANTS	The more employees involved, the better.

You can generate a table to see the gaps between your current efforts and your Dream.

DATA FROM CBM TOOL	SUSTAINABILITY GOAL (DREAM)	HOW CLOSE ARE YOU FROM THE DREAM*?

**Gap or difference between Sustainability Goal and Data from CBM tool.*

Upon seeing this information, you can use the 4-D Model again. The only difference is, you are now doing appreciative inquiry with a different lens, because you now have baseline information from implementing your sustainability SOPs.

DISCOVERY	What are the strengths that your employees and organization showed during the implementation of your sustainability SOPs? What are the core competencies that enabled you to hit your sustainability targets?
DREAM	Is there a need to re-evaluate goals? Is the timeline achievable? How close are you to the "Dream Sustainable Diner"?
DESIGN	Do you need to change the activities and systems you put in place to achieve your goals? Are there other capacities and skills you need to build? Considering the strengths you re-discovered, what can you improve to achieve your "Dream Sustainable Diner"?

You can undergo the process of evaluation and reflection on a timeline that is acceptable to you (e.g. quarterly or semi-annual). Evaluation and Reflection phase brings you back to Phase 1 and to undergo the Participatory Learning and Action Cycle again.

Destiny

Destiny is the continuous commitment of all the members of your organization to achieve your sustainability goals. Your destiny is to continue planning and strategizing, and re-evaluating your sustainability initiatives to achieve your goals. From time to time, you might identify new and braver sustainability goals as you go through a cycle. Just always remember to involve your employees in the process and capitalize on their green behavior.

We look forward to your sustainability journey! We hope that our better normal will be full of Sustainable Diners – thriving businesses for humans and the planet.

APPENDICES

APPENDIX A

1-2-4-All

1-2-4-All method allows engagement of the majority to simultaneously generate questions, ideas, and suggestions. It makes room for individual thoughts and ideas despite having a large group of participants.

Sequence of Steps

1. Give your participants time for silent self-reflection to ponder upon your challenge or question (1).
2. Building on ideas from self-reflection, allow participants to share and generate more ideas with a partner (2).
3. Merge pairs and allow participants to share and generate ideas with a larger group (4).
4. Each group can share ideas and thoughts that stood out in their conversation into the plenary.

Source: (Liberating Structures)

APPENDIX B

Sample Solution Tree

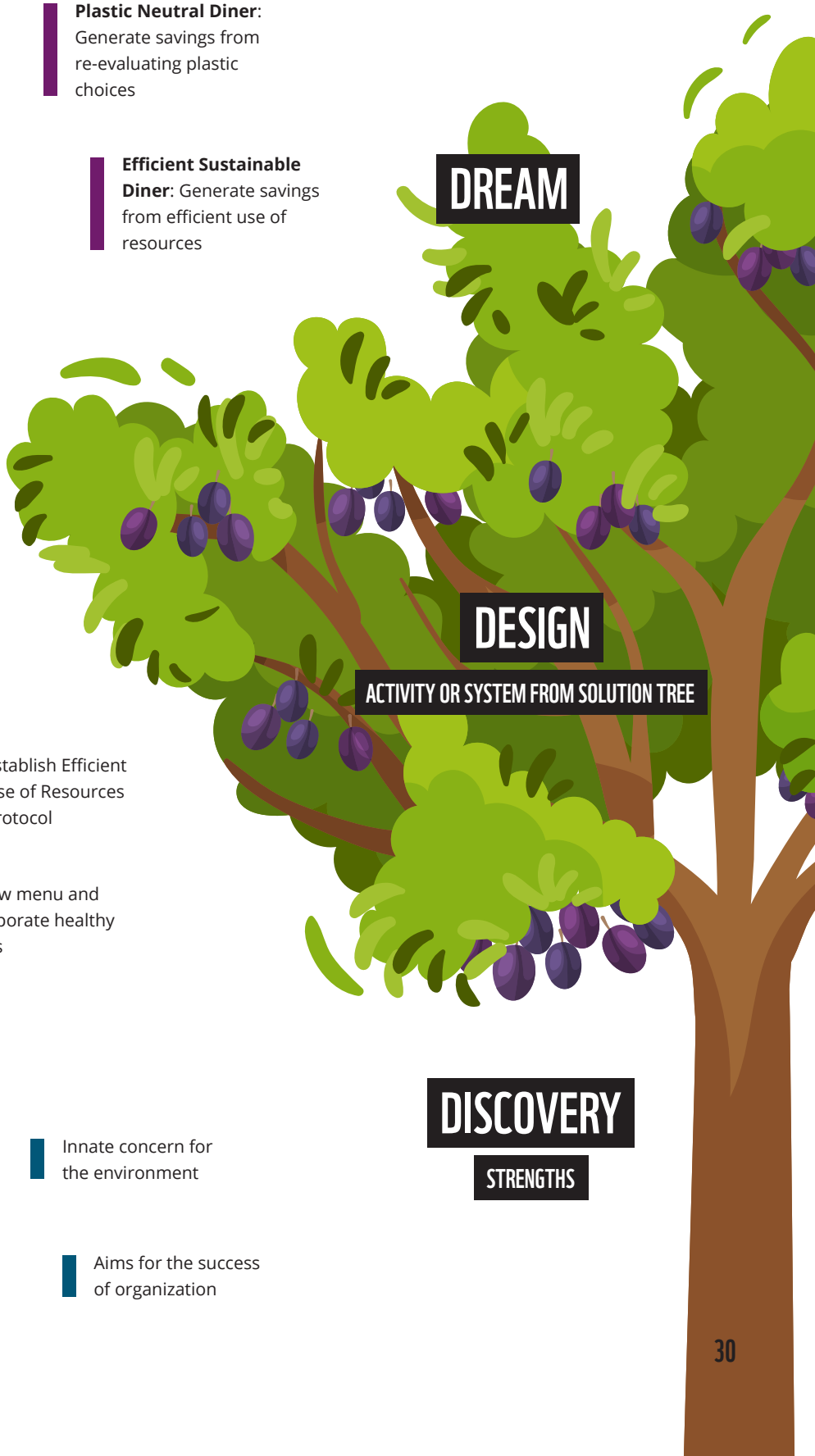
Become a **Zero-Food Waste Diner**: Reduce food waste by 20% after 1 quarter

Plastic Neutral Diner: Generate savings from re-evaluating plastic choices

Circular Diner: convert food waste to compost and produce 10% of ingredients

Efficient Sustainable Diner: Generate savings from efficient use of resources

Healthy Diner: Market our establishment as a healthy diner by quarterly evaluating the menu



Establish Food Waste Intervention program

Establish Plastic Waste Intervention Program

Establish an on-site garden for easy to grow herbs and crops, with a composting site

Establish Efficient Use of Resources protocol

Review menu and incorporate healthy meals

Employees are compliant to food safety policies

Innate concern for the environment

Team work

Aims for the success of organization

APPENDIX C

Sample Action Plan Template

ACTIVITY OR SYSTEM FROM SOLUTION TREE	DISCOVERY	DREAM	DESIGN		
	EXISTING	TARGET	SPECIFIC ACTIONS	DEPARTMENT/S CONCERNED	REQUIRED ASSISTANCE *(from management or external organizations)*
Establish Food Waste Intervention program					
Monitor food waste, determine hotspots and trends.					
Improve efficiency of ingredient cataloguing to avoid spoilage.					
Accept and use "ugly produce" (if it is not already being done).					
Maximize produce (ex. using various animal parts).					
Preserve or ferment produce that might be wasted.					
and so on...					

APPENDIX C

Sample Training Needs Analysis Template

WHAT THEY NEED TO BE ABLE TO KNOW OR DO *(Capability, Knowledge, Skill, Competency)*	EXPECTATIONS OF THAT ROLE *(From supervisors, managers, customers, other stakeholders)*	ABILITY GAP *(Identified shortfalls)*	BRIDGING THE GAP *(Learning or training approaches)*	EVALUATING THE LEARNING *(Success measures and assessment process)*	RESPONSIBILITY *(Who will lead the implementation of this training?)*
Establish Food Waste Intervention program					
Prevent food waste, manage unavoidable food waste.	To practice interventions on a daily basis to reduce overall food waste and generate savings.	Current employees don't see the significance of avoiding food waste; lacks the knowledge of how to prevent food waste and manage unavoidable food waste.	Utilize ***Food Waste Management Module and Food Waste Diversion*** Module from TSD Post Training Activity: 15% Solution Food Waste Mapping	Conduct pre- and post-test. Use Food Waste Data as an indicator of success.	Training Department will lead the first training; eventually, will be part of on boarding training.
Establish Plastic Waste Intervention program					
Manage plastic stocks and waste, identify plastic reduction opportunities.	To segregate plastic wastes properly; and to manage plastic stocks to reduce wastage.	Employees treat all plastics the same; the need to reduce plastics in the facility is felt but lack know-how.	Utilize ***The Plastics Problem and Reducing Single-Use Plastics for Sustainable Diners*** Module Post Training Activity: 15% solution General assembly or departmental meeting to implement the Goal Setting Process.	Conduct pre- and post-test. Use Plastic Footprint Data as an indicator of success.	Training Department will lead the first training; eventually, will be part of on boarding training.

WHAT THEY NEED TO BE ABLE TO KNOW OR DO *(Capability, Knowledge, Skill, Competency)*	EXPECTATIONS OF THAT ROLE *(From supervisors, managers, customers, other stakeholders)*	ABILITY GAP *(Identified shortfalls)*	BRIDGING THE GAP *(Learning or training approaches)*	EVALUATING THE LEARNING *(Success measures and assessment process)*	RESPONSIBILITY *(Who will lead the implementation of this training?)*
Establish an on-site garden for easy to grow herbs and crops, with a composting site					
Operate an on-site garden for herbs and leafy vegetables; Collect food waste, establish and maintain a composting facility/protocol.	Maintain on-site garden and compost for continuous productivity.	Current employees have no to minimal knowledge of gardening and composting.	Utilize ***Plant your plate: Urban container gardening and Food Waste Diversion*** Module from TSD Post Training Activity: Hands-on practice	Conduct pre- and post-test. Use C-B monitoring tool data as an indicator of success .	Training Department will lead the first training; eventually, will be part of on boarding training.
Establish Efficient Use of Resources protocol					
Practice water and energy saving behaviors that will ultimately result to savings.	To practice agreed upon water and energy saving SOPs on a daily basis.	SOPs followed by employees are limited to food safety and hospitality.	Utilize the ***Efficient Use of Resource*** Module Post Training Activity: 15% Solutions; Setting up of SOPs	Conduct pre- and post-test. Use C-B monitoring tool data as an indicator of success.	Training Department will lead the first training; eventually, will be part of on boarding training.
Review menu and incorporate healthy meals					
Develop healthy menus.	Regularly review menu to develop healthy offering.	Chef's are capable of regularly reviewing the menu but doesn't see its connection in helping the planet recover.	Utilize the Planet-based Diet Module Post Training Activity: Use the 4-D model of Appreciative Inquiry to **discover** strengths of the existing menu planning system. Visualize a **dream** menu. **Design** a meal planning system that regularly re-evaluates ingredients. Set up SOPs for the culinary and purchasing department to commit to **(destiny)**.	Conduct pre- and post-test. Use C-B monitoring tool data as an indicator of success.	Training Department will lead the first training; eventually, will be part of on boarding training.

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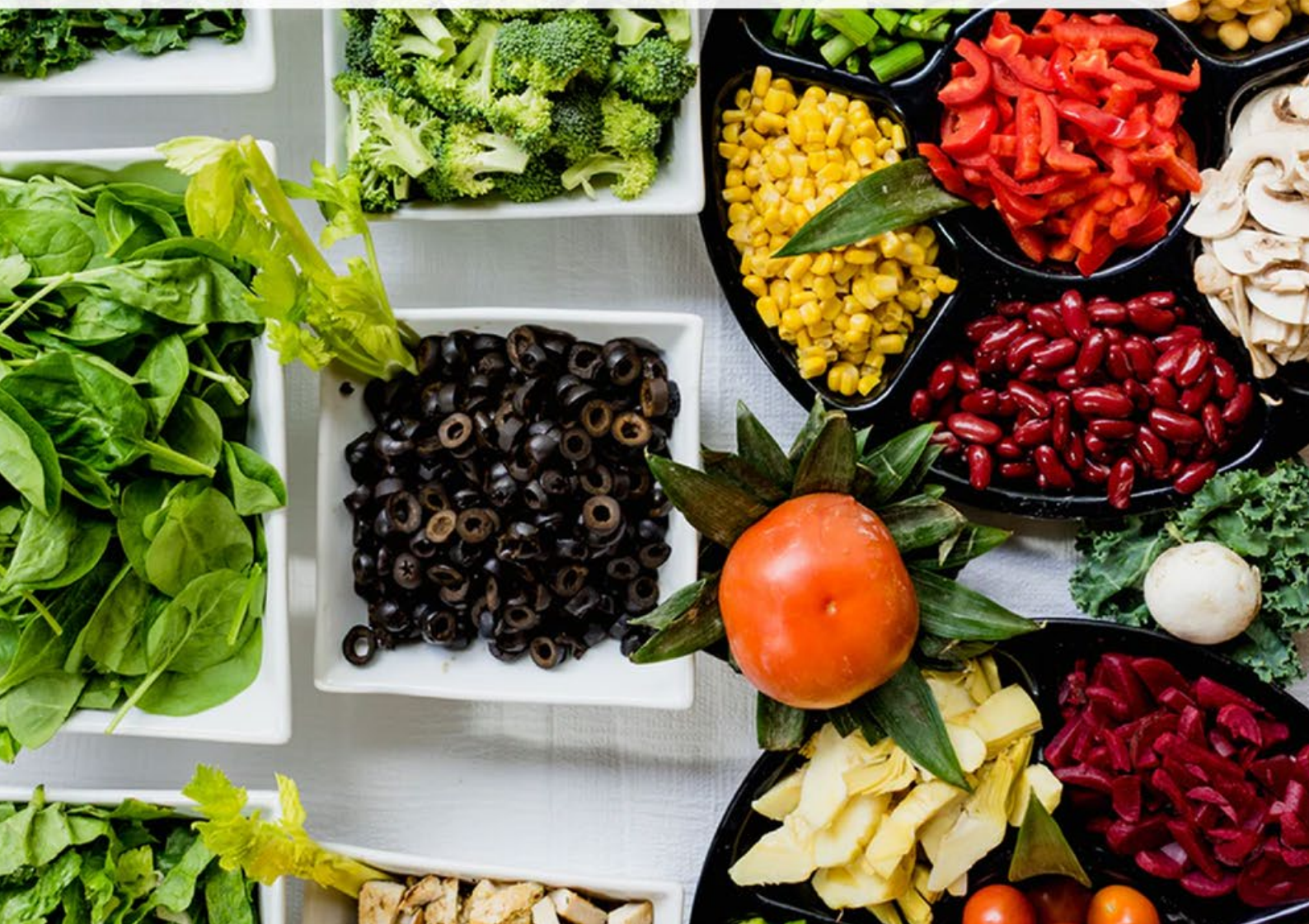
Food Safety and Food Waste Management

An Introductory Training Module for the Food Service Industry



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Food Safety: Brief Overview

Food Waste Management for the Food and Beverage Industry

"This could have been today's entrée"

Food Safety

Brief Overview

Introduction

Food safety is a key ingredient in achieving food security, and reducing food waste and food loss. Having food safety protocols in place can contribute to achieving food security by reducing risks of foodborne illnesses and improving the nutritional status of consumers. This consequently reduces social and economic costs in the food supply chain.

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (World Food Summit, 1996).

Food security can be achieved when safe and nutritious food is available and accessible at all times (United Nations Food and Agriculture Organization, 2006). Food safety is regarded as an enabler in achieving food security. Having food safety protocols in place ensures that the food that reaches consumers will be served at its optimum quality, hence it will not cause illness and will provide sufficient nutritional value (World Health Organization & United Nations Food and Agriculture Organization, 2014). In this way, food safety contributes to achieving food security by improving consumers’ overall nutritional status.

Food prepared under poor sanitary conditions is already considered food waste since unsafe food should never reach consumers. This can be prevented by having a food safety protocol in place. Additional avoidable food waste can be prevented by having a food waste management system in food service establishments. One-third of the world’s food production still goes to waste despite the increasing number of people experiencing involuntary hunger (Roca, Roca, & Roca, 2017). Aside from that, the food waste rotting in landfills decomposes and contributes to additional greenhouse gases that speeds up climate change (Roca, Roca, & Roca, 2017). All these can be prevented by the food service establishments’ commitment to food safety and food waste management.

Having food safety and food waste management systems not only keep consumers safe and restaurants profitable, but it also helps food service establishments contribute to the efforts in achieving food security, and to fight against climate change. These commitments from food service establishments might seem small, but they can radiate and contribute to solving problems at a global scale.

COVID-19 and Food

- The known primary transmission route of COVID-19 is through the spread of respiratory droplets generated when an infected person coughs or sneezes. Virus can spread by touching surfaces or objects where COVID-19 is present, then touching the nose, mouth, and eyes (Centers for Disease Control and Prevention, 2020) (World Health Organization, 2020).

- Currently, there is no evidence to support transmission of COVID-19 associated with food, but the surface of food packaging can serve as a surface where COVID-19 can stay (Centers for Disease Control and Prevention, 2020).

- Coronaviruses need an animal or human host to multiply and WHO states that currently, there is no evidence that transmissions occur through food or food packaging (World Health Organization, 2020).

What is Food Safety?

Food Safety is the assurance/guarantee that food will not cause harm to the consumers when it is prepared and/or eaten according to its intended use. (Department of Health, n.d.)

What is Foodborne Illness?

Food and Water-borne Diseases are a group of illnesses caused by any infectious (bacteria, viruses and parasites) and non-infectious agents (chemical, animal and plant toxins). (Department of Health, n.d.)

How Do Foodborne Illnesses Occur?

1. Biological Contaminants

These are the bacteria, viruses, parasites and fungi
Examples: Bacteria - *Salmonella* on raw eggs and poultry products; Virus - Hepatitis A; Parasites - *Anasakis* simplex on raw fish; Fungi - common mold bread – *Aspergillus niger*

2. Chemical Contaminants

Examples are cleaners, sanitizers, polishes

3. Physical Contaminants

These include metal shavings, staple wires, bandages, glass, dirt, fish bone in fish fillet

Allergens

These are proteins or other food ingredients that trigger an allergic reaction when eaten at a minimum concentration.

Common Food Allergens:


Milk


Soy


Egg


Wheat


Fish


Shellfish


Peanuts


Tree nuts

Symptoms:


Nausea


Shortness of breath


Itchy rashes/ hives


Swelling in various parts of the body


Vomiting/ diarrhea


Abdominal pain


Itchy throat

Action Step:

Inform customers when these ingredients are present in the dish by including it on the menu description, or communicate with customer about their allergen sensitivity. Ask proactively but politely if they have allergies and for what food ingredients.

How Does Food Become Unsafe?

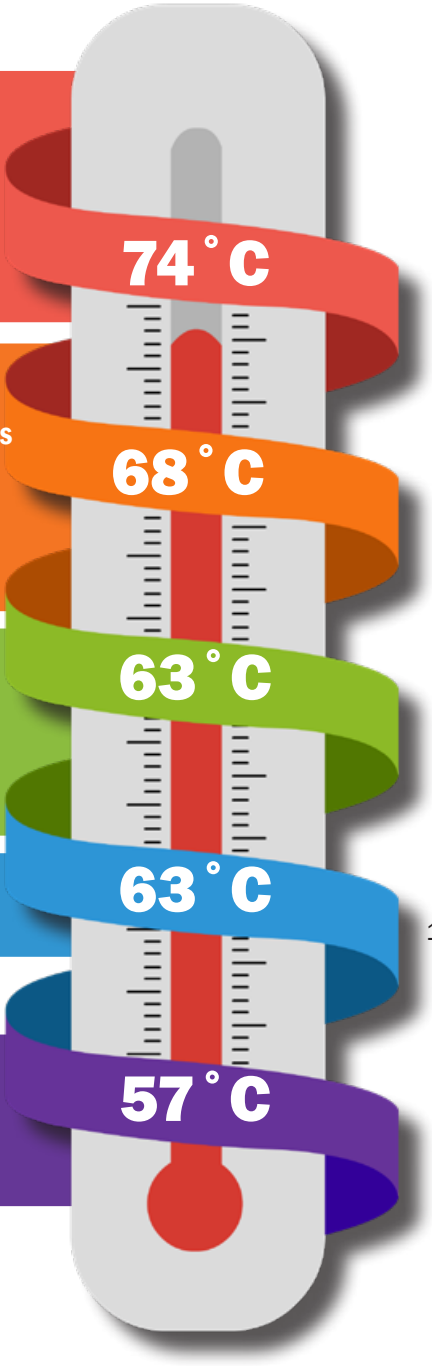
1. Time-temperature Abuse

It occurs when food has stayed too long at temperatures that support pathogen growth.

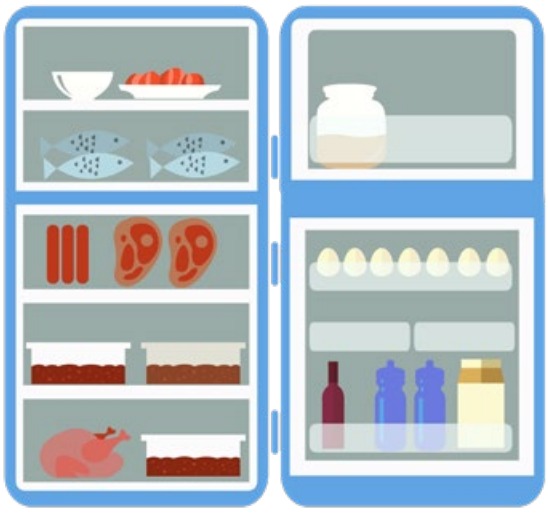
Examples:

- Temperature Danger Zone: 5 °C to 57 °C (41 °F to 135 °F)
- Maximum time food can be kept at room temperature: 2 hours
- Minimum Internal Temperature

Type of Food	Minimum Internal Temperature
• Poultry—whole or ground chicken, turkey or duck • Stuffing made with fish, meat, or poultry • Stuffed meat, seafood, poultry, or pasta • Dishes that include previously cooked Time and Temperature Control for Safety (TCS) ingredients	74 °C / 165 °F for 15 s
• Ground meat – beef, pork, and other meat • Injected meat – brined ham and flavor-injected roasts • Mechanically tenderized meat • Ground seafood – chopped or minced seafood • Shelled eggs that will be hot-held for service	68 °C / 155 °F for 15 s
• Seafood—including fish, shellfish, and crustaceans • Steaks/chops of pork, beef, veal, and lamb • Commercially raised game • Shelled eggs that will be served immediately	63 °C / 145 °F for 15 s
• Roasts of pork, beef, veal, and lamb	63 °C / 145 °F for 4 mins
• Fruits, vegetables, grains (rice, pasta), and legumes (beans, refried beans) that will be hot held for service	57 °C / 135 °F



2. Cross Contamination



It occurs when pathogens are transferred from one surface of food to another

Servsafe Recommended Refrigerator Storage of Food Items from top to bottom:
a) Ready-to-Eat Food
b) Seafood
c) Whole cuts of beef and pork
d) Ground meat and ground fish
e) Whole and ground poultry

3. Poor Personal Hygiene

It can cause foodborne illness; more stringent personal hygiene and additional safety protocols are being implemented during this pandemic.

4. Poor Cleaning and Sanitizing

Cleaning is the removal of visible debris, dirt, and dust.

Sanitizing eliminates or reduces the microorganisms in food contact surfaces with the proper use of FDA approved sanitizing solutions.

Action Step:

Communicate with the supplier regarding the proper dilution and contact time of their chemical sanitizers for food contact surface, other surfaces, and for immersion purposes.

Sample Reminder for the Kitchen Staff:

Sanitizer (Brand/ concentration)	Surface to be Sanitized	Dilution	Contact Time

Food Most Likely to Become Unsafe

Time and Temperature Control for Safety (TCS Food)

These are food requiring time and temperature control to limit pathogen growth

Examples:

- Milk and dairy products
- Eggs and shelled eggs
- Meat
- Poultry
- Fish
- Shellfish (Crustaceans)
- Baked potatoes
- Cooked rice and beans
- Tofu and other soybean products
- Raw sprouts
- Cut fruits and vegetables
- Untreated garlic-oil mixture

Ready-to-Eat Food

These are food that can be eaten without further preparation, washing, and cooking

Examples:

- Cooked food
- Washed fruit and vegetables
- Deli meat
- Bakery items
- Sugar, spices, and seasonings

At-Risk Group for Foodborne Illness

- Elderly people
- Infant and Preschool-age Children
- People with Compromised Immune Systems
- Pregnant Women

Government Mandated Protocols

Food Safety Law

Food Safety Act of 2013: (Official Gazette, 2013) Republic Act 10611 primarily aims to strengthen the food safety system of the country.

Objectives:

1 Protect the public from foodborne and water-borne illnesses and unsanitary, unwholesome, misbranded or adulterated foods;

2 Enhance industry and consumer confidence in the food regulatory system; and

3 Achieve economic growth and development by promoting fair trade practices and sound regulatory foundation for domestic and international trade.

Government Agencies Involved:

- Department of Agriculture
- Department of Health
- Department of Interior and Local Government and LGUs

Food business operators shall ensure that food satisfies the requirements of food law relevant to their activities in the food supply chain and that control systems are in place to prevent, eliminate or reduce risks to consumers.

Food Safety Compliance Officer shall oversee the implementation of food safety programs and activities of a food business according to the Food Safety Act of 2013 Implementing Rules and Regulations (IRR).

Keep updated with the latest DOT, DTI, and LGU guidelines for safe reopening

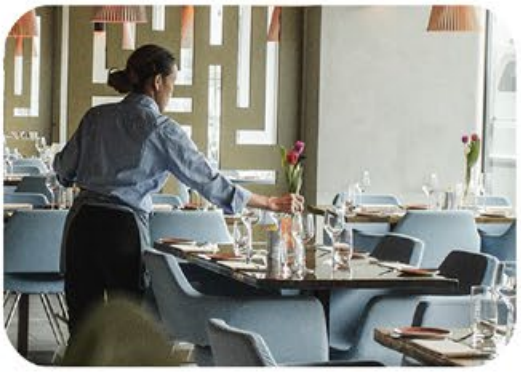
Best Practices of Food Service Establishments Amidst Pandemic

Effects of the Pandemic on Food Service Establishments

- Reduced sales
- Fewer employees
- Increased sales from delivery channels
- Development of innovative ways to operate
- Difficulty in sales projection

Innovative Ways to Cope

- Extensive use of online platforms to keep consumers updated
- Partnership with delivery platform services
- Pre-order scheme
- During the early weeks of the community quarantine, FSEs offered sale of their raw materials/uncooked items
- Limited offerings due to limited employees allowed to work
- DIY kits (e.g. DIY Ramen, Samgyupsal, Milk tea kits)
- Menu Modifications
- Discounts



Tips on How to Minimize Plastic Usage during the Pandemic

Source: United Nations Environment Programme & United Nations World Tourism Organization, 2020

1 Remove unnecessary plastic packaging and items to reduce cross contamination touch points;

2 Develop robust cleaning and sanitation procedures that encourage the adoption of reuse models;

3 Evaluate the use of unavoidable plastic packaging and items, enquire about their recyclability, and reassess needs on a regular basis;

4 Engage suppliers, waste management providers, and local governments to improve effectiveness of actions, coordination and resilience; and

5 Ensure open and transparent communication with staff and clients

Food Waste Management

For the Food and Beverage Industry

End Food Waste Now!

Food is inarguably one of the most important natural resources on Earth. It is linked to our cultures and traditions. Moreover, it is our basic need for survival, thus constituting as a fundamental human right. Yet, despite the fact that food is an integral part of life, the way we harvest, package, transport, cook, consume, and dispose of food contributes to global climate change.

With this Food Waste Management Training and Baseline Monitoring, with an ideal timeframe of four months, the private sector participants shall champion food waste management in their own establishments with the goal of translating their learnings into action, preventing food waste, echoing best practices to their employees, and helping reshape the food service industry as leaders in food waste reduction. WWF-Philippines will help the property be equipped with the knowledge and practice of recording and measuring food waste. Learn more in the Introduction to Food Waste Management video.

Introduction to Food Waste Management Module 1
bit.ly/TSDFWM1

Food Waste Measurement Module 2
bit.ly/TSDFWM2

Food Waste Task Force Module 3
bit.ly/TSDFWM3

The Food Waste Management Toolkit:

Developed by WWF-US in collaboration with American Hotel and Lodging Association (AHLA) through the generous support of the Rockefeller Foundation and localized by The Sustainable Diner Project of WWF-Philippines.

Objectives:

The rationale and goal of the workshop is to:

1 Prevent food waste in restaurants, hotels and other food and beverage establishments;

2 Donate what cannot be prevented but is still considered safe for people to consume; and

3 Divert unavoidable food waste from landfills through various methods suitable to the property

Steps in Food Waste Management

1 Establish a Food Waste Management Team

2 Establish a separation and measurement system

3 Analyze the data

4 Provide interventions on food waste reduction, explore food donation and landfill diversion. Learn more about these steps in the Food Waste Management Module.

Step 1
Establish a Food Waste Management Team

Recommended Departments/ Positions:
1 General Manager/ Restaurant Manager
2 Culinary/ Kitchen
3 Purchasing and Receiving
4 Service/ Waitstaff
5 Events and Catering
6 Stewarding
7 Engineering and Maintenance
8 Human Resource
9 PR and Marketing
10 Finance and Accounting
11 Property or Establishment Owner

Step 2
Establish a Separation and Measurement System

Dual Stream System
Food waste is categorized into two types of waste:
1 Pre-service waste
2 Post-service waste

Pre-service Waste
It includes food that are part of the preparation and have not been served yet in the buffet table. These are often referred to as kitchen food waste.

Examples: trimming and cuttings, spoiled food, expired food, food that shows signs of contamination (insect and rodent infestation)

Post-service Waste
It includes food that have been served at the table that were not eaten:
- Plate food wastes from guests/ clients/ customers
- Buffet food that was not consumed and that has been time and temperature abused.

To help with your measurements, access these free:
- Food Waste Monitoring Template: bit.ly/TSDFoodWasteTracker
- Sample Data: bit.ly/TSDSampleData.

Step 3
Analyze Data

Total Food Waste is the total amount of food waste in the pre-service phase and post-service phase.

Food Waste Per Cover is computed by dividing the total food waste in kg by the total number of covers. The results shall be multiplied by 1000 to get the amount in grams.

Covers refers to to the number of guests that were actually served in a given period of time.

Step 4
Interventions to Reduce Food Waste Reduction

1 Provide useful tips and best practices on how to reduce the food waste problem in the planning, handling, and servicing phases
2 Gather insights from employees on how they can solve the food waste problem in specific areas.
3 Map a step-by-step guide on how the solutions can take effect and indicate the duration.
4 Provide ways to encourage consumers to support the initiative of the property to reduce food waste.

Food Donation

RA 9803 or the Food Donation Act of 2009

Diversion of Wasted Food Away from Landfills

1 Provide landfill diversion strategies to reduce greenhouse gas emissions, promote soil nutrition, and provide support in growing livestock and other animals.
2 Provide suggestions on how to start a landfill diversion strategy suitable for the property.

All over the world, it is estimated that 1/3 of the food produced never reaches our plates.

Best Practices
Pre-service

Finance

- Explore financial viability of various food waste diversion strategies (hauler contract, on-site management)
- Consider investing in food waste prevention software (e.g. LeanPath and Winnow) or technology to preserve food quality (e.g. cook-chill, blast freezer)

Events or Catering Sales

- Put the food waste epidemic into context during Banquet Event Order (BEO) conversations and discuss options with clients for food waste reduction and recovery including an agreement to donate food that cannot be reused in the hotel
- Put food donation partner options directly in contract agreements so clients understand how excess food from an event will be handled
- Reinforce the importance of accurate guest counts to minimize overproduction
- Promote sustainable or reduced waste menus developed by culinary staff, and explain the property's food waste philosophy to clients

Human Resources

- Reinforce food waste prevention, recovery, and diversion behaviors continuously
- Keep food waste reduction and recovery best practice materials on hand for employees to review
- Include the food management philosophy into the new hire orientation discussion

Culinary

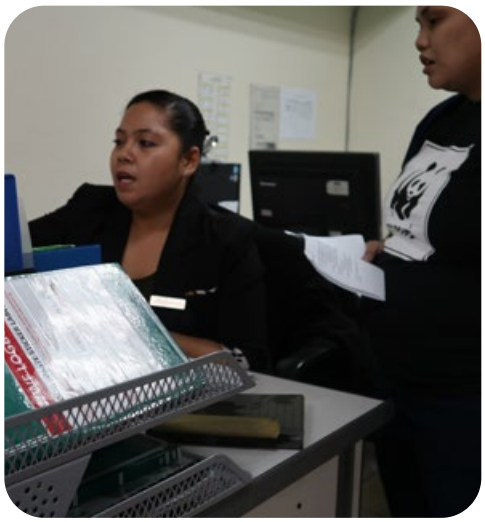
- Develop a reduced waste menu or a “Menu of the Day” program
- Use the most appropriately sized prepping and serving vessels for each dish, to better standardize portion sizes and prioritize “total food utilization” and document it
- Store ingredients and prepared food in a way that preserves quality and yield, label with “use by” dates to prevent spoilage
- Meet with finance or asset managers to discuss options for investing in food waste prevention software or other equipment to help understand current waste and identify opportunities to reduce
- Accomplish the post-production reports regularly
- Develop a streamlined menu limiting the number of items that are in demand based on your menu engineering
- Meet with your cost controller and purchaser on a regular basis
- Develop accurate recipe cards
- Practice accuracy in buffet forecasting
- Understand the Edible Portion of As Purchased fruits and vegetables
- Edible Portion (EP) is the portion of food that will be served to a customer after the food has been cut and cooked
- As Purchased (AP) is the portion of food that is in the raw state before any cutting, processing, or cooking has occurred
- Percent Yield is the factor used to determine how much of the food is lost as a result of the cooking, cutting, and processing of the food

Banquets/Service

- For buffets and displays, use smaller vessels wherever possible, especially as service winds down, topping off or back filling as necessary to conserve full pans for donation
- Note high-waste buffet items and report back to the culinary team for menu adjustment

Communications

- Assist the event sales staff in developing a script for discussing reduced waste events with clients
- Develop a one-pager that details the impact of food waste, the hotel's food waste goals and the impact your program is having on the local community via donations
- Place conscious consumption cues and food philosophy messages on buffets, tables, and guest rooms



Purchasing/ Receiving

- Review store room practices to maintain food safety and quality and prioritize total food utilization
- Remember to always use First In, First Out (FIFO) and First Expiration, First Out (FEFO) inventory management
- Determine stored items that have no designated use or are close to "use by" date, strategize use or donation with culinary team
- Source ingredients locally, especially fruits and vegetables
- Source ugly produce or seconds whenever possible

Stewarding

- Return bins to designated locations and use appropriate bin liners
- Request a presentation from a Food Waste Management Champion to review appropriate food waste disposal techniques
- Ensure unrecoverable food waste from store rooms and kitchens is disposed of according to your property's diversion strategy
- Keep accurate records of the number of bins filled each day and record the general items in each bin to provide the culinary staff with daily data on food waste generation

Best Practices
Post-service

Culinary

- Request reports from store room staff on underutilized ingredients
- Request reports from service staff on buffet leftovers to inform future meal preparation
- Communicate prevention, recovery, and diversion successes to guests and clients
- Collaborate with donation partners on best practices preparing, storing, and transporting food for donation

Events or Catering Sales

- Ensure unrecoverable food waste from guest plates and the buffet is disposed according to your property's diversion strategy (e.g. compost, onsite processing technology)
- Ensure food safety is maintained for all underutilized food to allow for reuse in the kitchen or donation to your local donation partner

Banquets/Service

- Communicate prevention, donation, and diversion successes to the client
- Collect data on attendance rates and food preferences including what was eaten and what went to waste from each event and organize to inform similar events

Communications

- Comunicate prevention, recovery and diversion successes to guests and clients

Finance

- Review the return on investment from prevention, recovery, and diversion activities by comparing food costs and hauler costs over time

Stewarding

- Ensure unrecoverable food waste from guest plates and the buffet is disposed according to your property's diversion strategy (e.g. compost, onsite processing technology)
- Return all bins to the appropriate place with the correct liners

Human Resources

- Communicate prevention, recovery, and diversion success to staff and reward food waste management champions
- Organize food waste programming for staff in employee dining rooms or on environmental holidays (Earth Day, Food Day, etc.)
- Continually reinforce prevention, recovery and diversion through trainings, signage, and engaging activities of competitions

Get to Know the Local Crops to

- **Be food secure**
- **Have good health**
- **Cook & eat plant-based meals**
- **Grow your food and**
- **Conserve the environment**

Read to learn more: **bit.ly/localcrops**
Watch the video: **bit.ly/localcropsvideo**

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WWF-Philippines'

The Sustainable Diner Training Module Series:

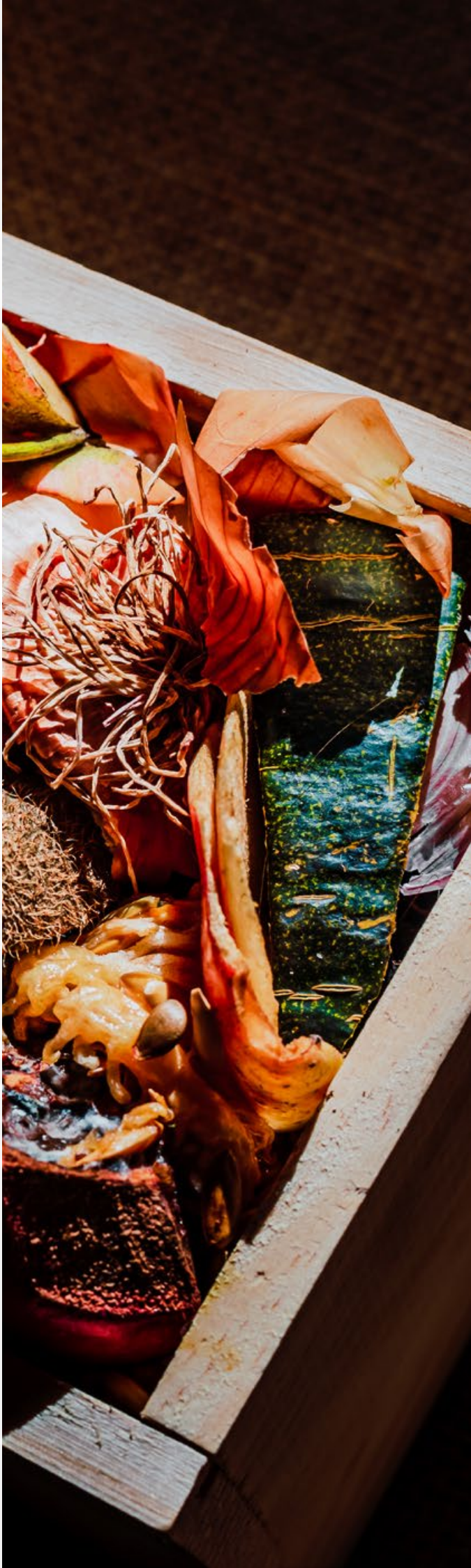
FOOD WASTE DIVERSION

CONTENTS

INTRODUCTION

FOOD production uses a lot of limited environmental resources like fresh water and arable land. All of these become useless when food is wasted. Aside from that, food waste also contributes greenhouse gases when it rots in landfills. We must do everything to avoid food waste, and when we cannot, we must at least divert them from landfills and convert them into a valuable resource.

Growing crops uses up nutrients and water from the soil. Managing and diverting food waste from landfills through composting is one way of bringing back those nutrients to the soil. Composting might seem challenging to execute, but it offers a lot of benefits for businesses. Learn all about the environmental and economic benefits of food waste diversion and how it can be easily incorporated in your operations in this module.



OBJECTIVES

This part of the series aims to:

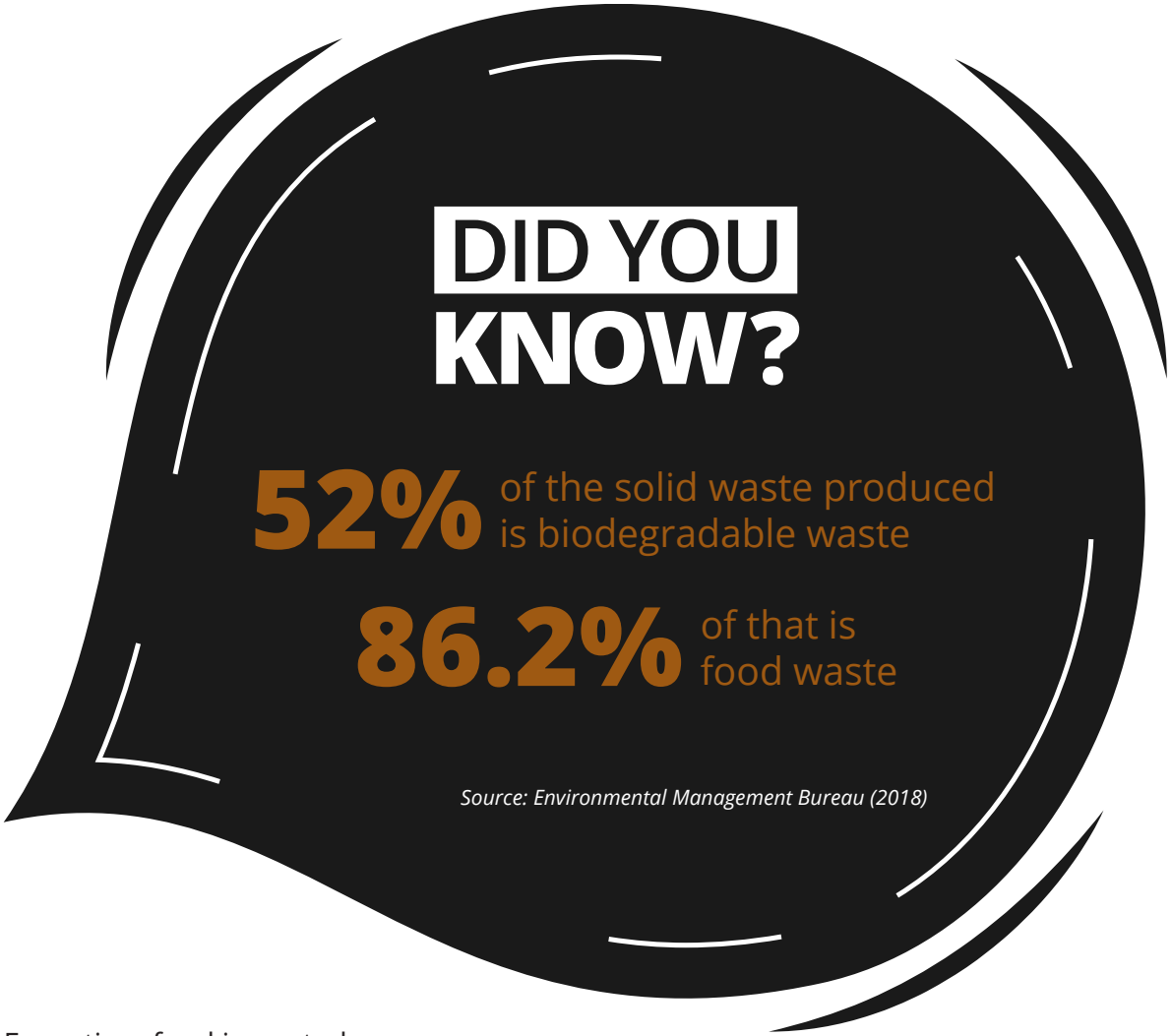
- Introduce composting as a way to divert food waste, its advantages for the restaurants and the environment; and
- Assist food service establishments to start composting.

At the end of this module, learners are expected to:

- Recognize the impacts of food waste on the environment;
- Identify advantages of composting food waste and its effects on soil health;
- Demonstrate how to compost food waste through Bokashi Composting method; and
- Integrate food waste diversion in restaurant SOPs.

IMPACT OF FOOD WASTE TO THE ENVIRONMENT

Food service establishments are exposed to food waste in their daily operations. There are times when a food item reaches its expiration date in storage, stock bread becomes moldy, or customers leave food unfinished on their plates. Food service establishment employees frequently see food being wasted and there are times when it cannot be avoided.



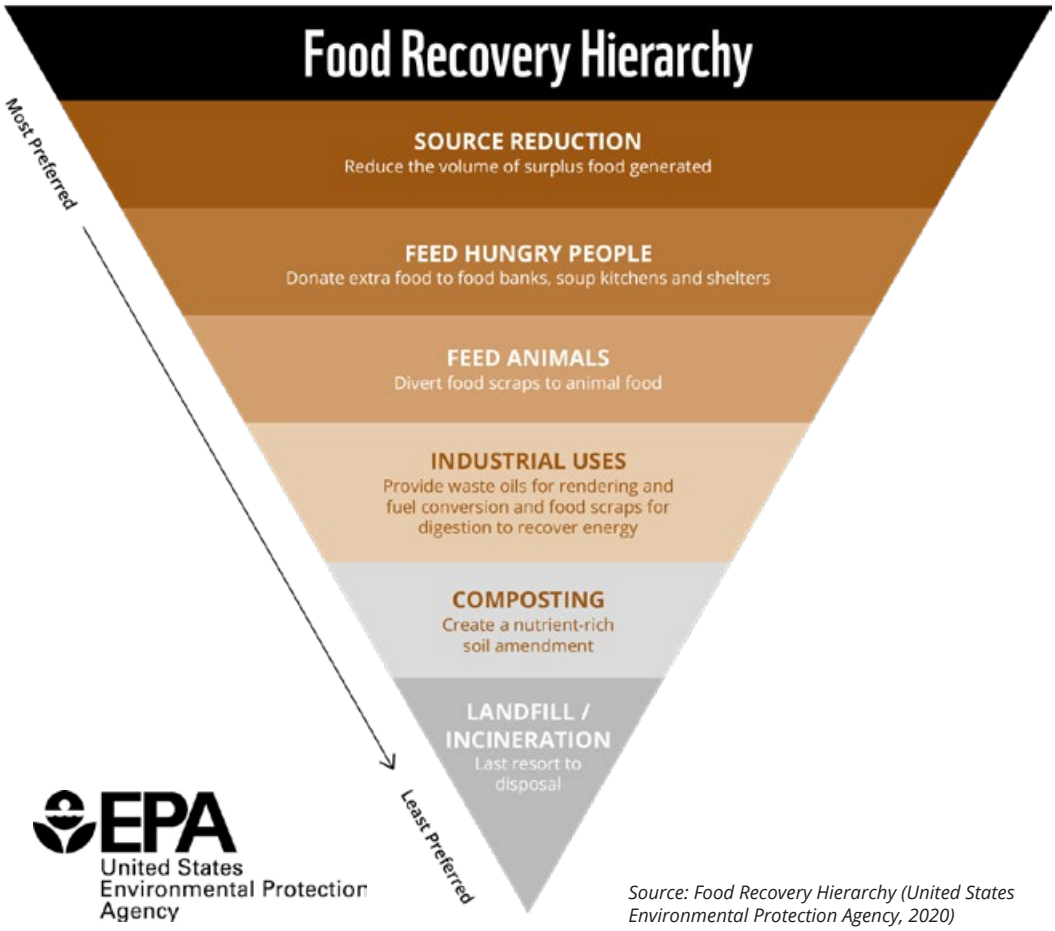
Every time food is wasted... **money, packaging, manpower, and water are wasted too,** all along the supply chain. And if food waste were a country, it would be the third largest emitter of greenhouse gases (Spiegel, 2019).

WHAT **CAN WE DO** ABOUT IT?

bit.ly/TSDFWD1

The Food Waste Management Module talks about all the things you can do to prevent and manage food waste in your operations. It shares how to establish a system that can help you prevent food waste, how to track and monitor this system, and some best practices. After doing everything you can to prevent and recover food waste, and still, there is food waste that we need to dispose of, what we can do is to divert them from the landfills.

WHY DIVERT FOOD WASTE?



Source: Food Recovery Hierarchy (United States Environmental Protection Agency, 2020)

Food Recovery Hierarchy illustrates that Food Waste Diversion, like composting, should be at the end tip of the inverted triangle. Meaning, we should first and foremost aim to prevent and avoid generating food waste. Afterwards, if food waste is still recoverable, we should find ways to send them to value-adding alternatives. However, if we can no longer reduce our food waste at source and donate edible food to people in need or to animals, we should at least divert our food waste. Sending food waste to landfills should be a last resort.

What are the Benefits of Diverting Food Waste from Landfills?

- Diverting food waste turns something usually considered as waste into a valuable resource like compost;
- It decreases the amount of greenhouse gas emissions from landfills; and
- When we generate compost from food waste, we also promote Circular Economy.

COMPOSTING

Definition of Terms

"Composting is the natural process of 'rotting' or decomposition of organic matter by microorganisms under controlled conditions." (Misra, Roy, & Hiraoka, 2003)

In our case, the organic matter we aim to decompose is **food waste**.

Compost

- End product of composting
- Rich source of organic matter (Misra, Roy, & Hiraoka, 2003)
- Can be used to improve soil health

Importance of Composting

Reduces waste and greenhouse gas emissions

Food waste that ends up in landfills produces methane, a harmful GHG. Food waste contributes 3.3 billion tons of GHG (United Nations Environment Programme, 2013).

Recycles essential nutrients back into the soil

Compost is a rich source of organic matter and helps improve soil fertility and contribute to sustainable agricultural production (Misra, Roy, & Hiraoka, 2003).

Strengthens soil and promotes healthy plant growth

Compost improves soil health which leads to higher retention of water, nutrients, and air. It also improves the microbial activity of the soil promoting an active nutrient cycling activity (Misra, Roy, & Hiraoka, 2003).

DIFFERENT COMPOSTING METHODS

1. DIRECT COMPOSTING

Direct composting in your backyard is simple – you bury your organic waste in garden soil, where it decomposes into rich compost.

2. COMPOSTING PILE

There are many ways to make a compost pile. You can create a free-standing compost heap, preferably out of sight to keep stray animals away. Another option is to build your own bin out of recycled wooden pallets or wire-mesh fencing.

You can create your own compost pile by layering and balancing organic materials from yard waste and leftover food - just avoid adding meat and greasy ingredients. Mix your pile with a couple shovelfuls of topsoil or compost for the needed microorganisms to work on the decomposition process.

3. TUMBLER COMPOSTING

If you don't have much space to compost or just want to start on a small scale, consider making a compost bin from repurposed plastic storage containers or tumblers. Anything you would throw in a normal compost pile can go in your tumbler compost. This is an easy project that will give you finished compost in about three (3) months.

4. VERMICOMPOSTING

Vermicomposting is the process of making compost using worms, such as African Night Crawlers or Red Wigglers. They feed on organic waste materials and excrete vermicasts that are rich in nitrates and minerals that can be used as compost and soil quality enhancers.

5. BOKASHI COMPOSTING

Bokashi is a Japanese term that means fermented organic matter. It undergoes an anaerobic process that relies on the beneficial microbes in the Bokashi bran that speed up the fermentation. In Bokashi Composting, all kinds of food scraps and kitchen wastes including meat and dairy products can be added in the tight-lid bucket while mixed or layered with the bran. When the bucket is full, it is sealed and kept shut for two (2) weeks. Afterward, the fermented food waste will be buried in soil for the soil microbes to finish the decomposition process. After four (4) weeks in the soil, the compost can now be planted on or harvested.

Summary of Composting Methods

COMPOSTING METHOD	PROCESS	SPACE REQUIREMENT	OXYGEN (AIR) REQUIREMENT	SPEED OF PROCESS
Direct Composting	Layer green and brown organic wastes in compost pit	Backyard with space enough to dig compost pit	Aerobic (with the presence of Oxygen)	2-6 months
Open Air Composting	Layer green and brown organic wastes in piles	Backyard with space enough to build compost piles	Aerobic (with the presence of Oxygen)	2-6 months
Tumbler Composting	Layer green and brown organic wastes inside tumblers	Area for tumbler	Aerobic (with the presence of Oxygen)	3 months
Vermicomposting	Add worms (e.g., African Night Crawlers or Red Wigglers) to food waste containers	Area for tumbler with worms	Aerobic (with the presence of Oxygen)	2-3 months
Bokashi Composting	Layer green organic waste with Bokashi bran	Indoor area for bucket	Anaerobic (without the presence of Oxygen)	2 weeks in the bucket + 4 weeks in soil

Green organic wastes are normally food scraps, fruit and vegetable trimmings, that are rich in **Nitrogen**.

Brown organic wastes are normally dried leaves, cartons, paper bags, woods, which are rich in **Carbon**.

Challenges in Composting

- Limited options to divert food waste away from landfills
- Limited space for composting
- No composting facility nearby
- Odor can attract rodents, pests, stray cats and dogs
- Composting is too time consuming and too complex of a process
- Inconsistency in the waste collection

SoilMate

PROJECT

Project Goal

Divert unavoidable organic wastes from the landfills to reduce greenhouse gas (GHG) emissions and build healthy soil by connecting businesses to a composting subscription service through a mobile application.

Project Location

Quezon City, but Green Space offers the subscription service for other areas in Metro Manila.

How It Works

In an effort to divert food waste thrown in landfills, combat environmental pollution, and address challenges posed by composting, WWF Philippines and Green Space launched the SoilMate Project.

The project encourages food service establishments to manage food waste through Bokashi composting. Most food service establishments have limited space; Bokashi composting suits the needs of businesses in the urban setting since it only requires a bucket to start. The collected food waste in buckets can be collected by Green Space and they will finish the process in their composting facility. Lastly, businesses are also given the chance to bring back nutrients to the soil by connecting with Bokashi compost beneficiaries like local community farms.

Be a SoilMate

Composting Subscription Packages

You may choose the plan that meets your food waste volume. We can assist you in estimating how many buckets you'll need based on your food waste data.

Food Waste Collection Options

You may choose your preferred bucket exchange day. This way, you may choose the most convenient time for bucket collection, and you get full buckets ready before collection day.

Food Waste Measurement Tracker

This feature comes with Methane Calculator. To reinforce the practice of measuring food waste daily, this app will allow you to see the summary of waste diverted and methane avoided calculated from Compost Log entries.

IEC Materials on Food Waste, Composting and Environmental Issues on Food Waste

Educational materials that strengthen your motivation to stay committed to your composting journey.

Feedback Mechanisms

Channel for Bokashi Compost Beneficiaries

The mobile application offers a channel to connect with Bokashi compost beneficiaries. You can share the earned compost to beneficiaries like community gardens or small-scale farms. This way, you help in achieving food security by supporting local food systems.

BOKASHI COMPOSTING 101

Bokashi Composting method is one of the simple methods that divert food waste from the landfills and turns it into a nutrient-rich compost with the help of beneficial microorganisms.

Composting Essentials

- **Bucket:** a 20 liter bucket can contain an average of 10 kilograms of food waste
- **Strainer:** a necessary part of the bucket so that any excess liquid in your food waste can drain to the bottom of the bucket to avoid the content being too moist.
- **Bokashi Bran:** Green Space makes high quality Bokashi bran by fermenting rice bran and carbonized rice hull using a superior quality microbial inoculant known as EM1. These beneficial microbes are responsible for the fermentation process.

STAGES OF BOKASHI COMPOSTING

Collect

People are at work. This is the stage where you layer all of your food waste with the Bokashi bran inside the bucket.

Ferment

Microbes are at work. This is the stage where microbes ferment the food waste anaerobically inside the sealed buckets for two (2) weeks.

Compost

Nature is at work. The composting stage is where food waste will be layered with soil to finish off the decomposition process.

THE ART OF LAYERING

What kinds of food waste can we put in the Bokashi bucket?

ALL FOOD WASTE CAN BE ADDED

Bokashi composting is really suited to the fast-paced nature of food service establishments. You can toss everything in your bucket – from the scraps during kitchen preparation to leftovers of dining customers.

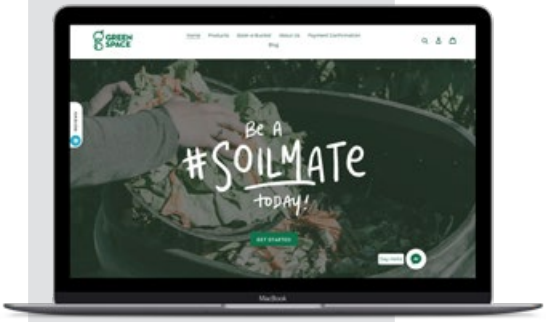
Daily Food Waste Routine

How to start a daily food waste routine?

- Locate your buckets or temporary collection bins in different prep stations in the kitchen.
- Place a strainer on standby by the kitchen sink where you will put all leftovers. This ensures that any excess liquid will be drained so there will be less liquid going into your bucket. Strainer can also serve as a measuring device to indicate when to toss food waste to the bucket.
- After tossing your food waste into the bucket, sprinkle it with a handful of Bokashi bran. Additional two (2) to three (3) handfuls is recommended if there is meat because more microbes are needed to ferment high protein food waste.

Smell of Composting

- When you open your Bokashi Bran, it has this sweet-sour smell, like vinegar.
- Your bucket should also have that same fermented smell.
- Putrid odor or the smell of rotting garbage may mean that you need to adjust something. (e.g. it could be a sign that there's too much moisture in the bucket, so you might need to add layers that can absorb excess moisture like paper, cartons, or more Bokashi bran).



For more information, you may visit ***greenspace.ph***

IINTEGRATING FOOD WASTE DIVERSION IN YOUR BUSINESS SOPs

Step 1. Evaluate current food waste operations

Start your journey by identifying the following:

a. Types and amounts of food waste generated in your business
b. Sources of food waste in your operations (e.g. do your food waste come from the kitchen prep area, offices, hotel rooms, or staff kitchen?)
c. Existing food waste disposal procedure

This is where the Food Waste Management System comes in. Refer to the ***Food Waste Management*** Module of this training series.

Step 2. Determine the best option for food waste diversion program

There are a lot of different composting methods, find what best suits your operations. Consider your location, local regulations, and the time and space you can allocate for composting.

Step 3. Plan the Program Implementation

Plan how you are going to implement your food waste diversion program. Lay out all of the factors involved in that program like food waste collection procedure, operational costs, staff responsible for each task, and on whether you want to include this as part of your marketing strategy.

Step 4. Train staff in the chosen food waste diversion method

Take the time to make your employees aware of the food waste diversion procedures and the reasons behind. This will help ensure that your business reaps the benefits of this composting process.

Step 5. Track volume of food waste diverted and compost production for impact assessment

Measuring the amount of food waste diverted from the landfills allows you to compute the amount of methane avoided. You can also track the amount of compost produced that can be used to regenerate soil in your garden or in local community gardens.

Step 6. Monitoring and maintenance

Monitor the program and adjust accordingly if there will be a need for improvement or change in strategy. You can always go back to step 1 to reassess protocols after initial implementation, and re-strategize based on employee feedback and best practices.

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WWF-Philippines

The Sustainable Diner Training Module Series:

PLANET-BASED DIET

WWF

The Sustainable Diner

A Key Ingredient For Sustainable Tourism

CONTENTS

INTRODUCTION

FOOD gives nourishment to our body. It provides the nutrients we need to function in our daily activities. Apart from being vital for our survival, we eat to savor the food, experience its flavors, and share it with the people who matter to us. However, our search for convenience has led us to forget the vital role of food in our lives, and has unknowingly damaged our planet.

We have been consuming food that is not only detrimental to our health but also to the environment. As food service establishments, we should be accountable to our customers by choosing to serve food that improves or does not harm customers' long-term health. While doing this, we are also doing our share to restore our planet's health. Learn more about food that is good for the people and the planet and how you can serve them in your food service establishments in this module.

OBJECTIVES

This part of the series aims to:

- Introduce the concept of planet-based diet; and
- Introduce ways on how food service establishments can develop and adopt planet-based options on their menu.

At the end of this module, learners are expected to:

- Recognize the impact of diets on the environment;
- Develop planet-based meals on the menu that are good for both human and planetary health; and
- Integrate sustainable dining principles with development of planet-based meals.

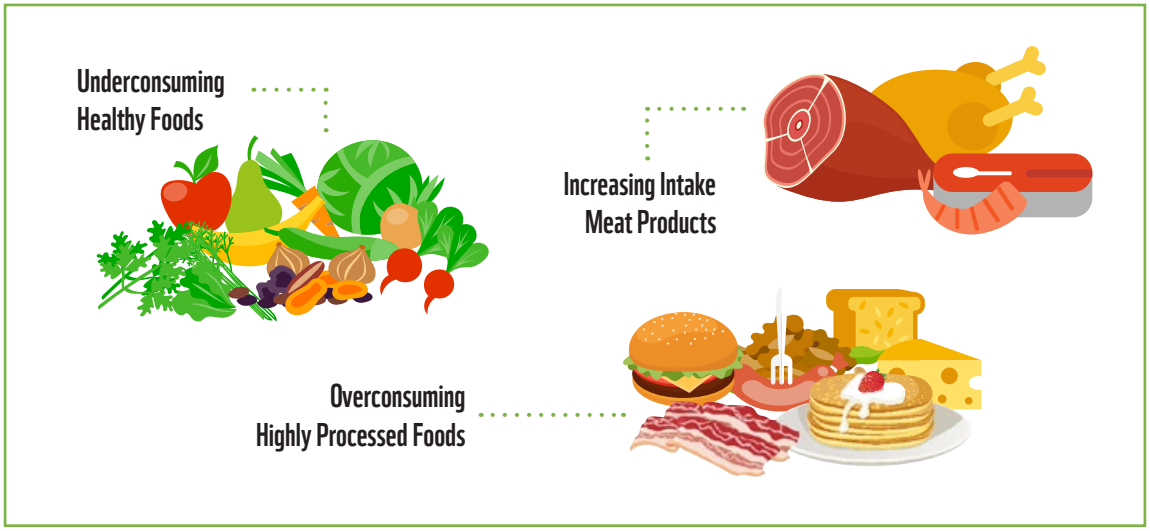
Planet-based Diet
Module 1: Planet-based Diets
bit.ly/TSDPBD1

RATIONALE

The first part of this module talks about our current food consumption patterns and their effects to our health and to the environment. These are some of the driving factors that led to the development of Planet-based diet recommendations. You can watch and learn all of these in the Planet-based Diet Module 1 Video.

Food Consumption Patterns

Globally, many studies and researches found that we are underconsuming healthier food and overconsuming highly processed food. Meanwhile, there is a notable increase in our intake of meat products as a source of protein.

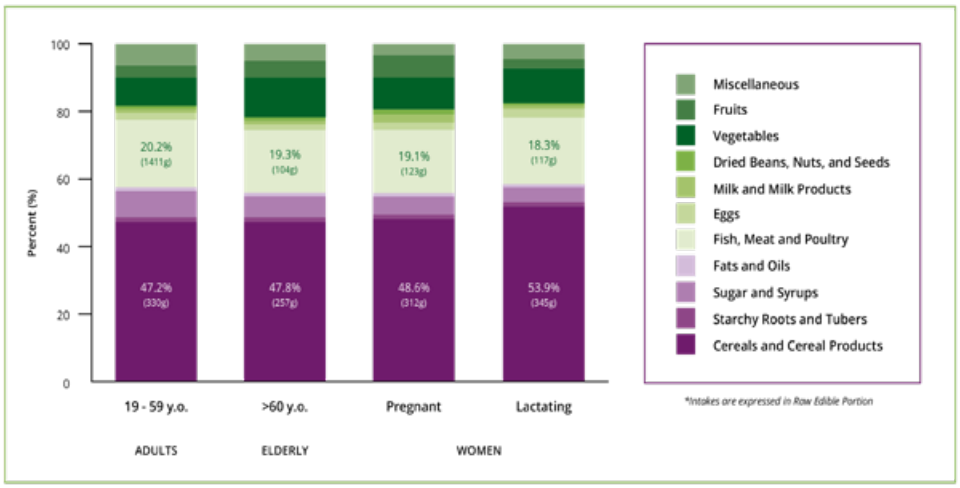


Locally, the Food Consumption Survey of the Food and Nutrition Research Institute of the Department of Science and Technology (2018) found that we Filipinos generally do not meet our dietary energy requirement. Inarguably, our highest intake are cereals and cereal products since rice is our staple food and our main source of energy (Figure 1). Next to cereals, we also highly consume fish, meat, and poultry and we have relatively low consumption of vegetables, fruits, dried beans, nuts and seeds.

The survey also found that Filipino adults, elderly, pregnant and lactating populations have excessive protein intake (Figure 2). The Philippines was also found to be one of the top 10 fastest growing meat consuming nations (Salazar, 2016). Our consumption of pork, chicken, and beef is projected to have a compound annual growth rate of 30% per year from 2011 to 2021 (Salazar, 2016).

WHY ARE WE ZEROING IN ON MEAT?

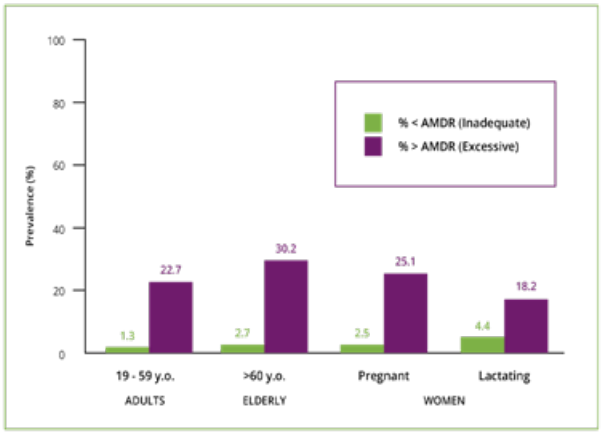
Contribution of Food Groups to Mean One-Day Food Intake* Among Adults, Elderly, Pregnant and Lactating Mothers: Philippines 2018



Source: Department of Science and Technology - Food and Nutrition Research Institute

Figure 1. Illustration of food group composition of one-day food intake of Filipino adults, elderly, pregnant and lactating mothers as reported in the ENNS 2018 Dissemination Forum last July 28, 2020 (Food and Nutrition Research Institute, 2020)

Prevalence of Protein Inadequacy and Excessiveness Among Adults, Elderly, Pregnant and Lactating Mothers (as % Energy)



Source: Department of Science and Technology - Food and Nutrition Research Institute

Figure 2. Illustration of protein inadequacy and excessiveness among Filipino adults, elderly, pregnant and lactating mothers as reported in the ENNS 2018 Dissemination Forum last July 28, 2020 (Food and Nutrition Research Institute, 2020)

How Do our Food Choices Affect our Health?

Globally, NCDs account for 71% of deaths yearly. Every year...

- 15 million people die from NCD between ages 30-69 years
- 17.9 million from cardiovascular diseases
- 9 million from cancers
- 3.9 million from respiratory diseases
- 1.6 million from diabetes

Source: World Health Organization (2018)

NONCOMMUNICABLE DISEASES (NCDs),

also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors.

- World Health Organization (2018)

In the Philippines, the leading causes of *mortality* (death) are

1. Diseases of the heart;
2. Diseases of the vascular system;
3. Pneumonias;
4. Malignant neoplasms/cancers;
5. All forms of tuberculosis;
6. Accidents;
7. Chronic Obstructive Pulmonary Diseases (COPD) and allied conditions;
8. Diabetes mellitus;
9. Nephritis/nephritic syndrome; and
10. Other diseases of the respiratory system.

Among the top 10 leading causes of mortality or deaths in the country, six (6) are non-communicable and four (4) are the major NCDs such as cardiovascular diseases (CVD), cancers, COPD and diabetes mellitus (Department of Health). Diseases of the heart had been consistently the number one leading cause of death for several years now, causing more than one in every five deaths.

The metabolic factors that increase the risk of NCDs are raised blood pressure, obesity, hyperglycemia (high blood glucose levels) and hyperlipidemia (high levels of fat in the blood) (World Health Organization, 2018). These metabolic factors are associated with our current food consumption patterns.

How Do our Food Choices Affect our Environment?

Alongside the growing nutrition-related chronic diseases, we also see an increase in environmental impacts of unsustainable food consumption and production.

In order to supply food for our growing population, food production accounts for...

- 50% of land use for agriculture globally;
- 69% of freshwater usage;
- 60% loss of topsoil in the last 150 years; and
- 70% of freshwater withdrawals (Loken, et al., 2020).

Food production also contributes to...

- 27% of Greenhouse Gas emissions (Loken, et al., 2020);
- Loss of biodiversity and deforestation (Loken, et al., 2020); and
- Increased risk for future pandemics. (Loken, et al., 2020).

Seeing the facts, how does your daily eating habits solve the burden of diseases and the deteriorating state of our planet?

PLANET-BASED DIET

Planet-based diets are dietary choices one can make that are beneficial for both personal and environmental health. It is not a new way of eating but a flexible way of considering how diets can be adapted to local contexts. The diet consists of healthy food produced within planetary boundaries, discourages overconsumption of any food, and encourages agrobiodiversity (World Wide Fund for Nature, 2020).

PLANET-BASED DIETS ARE NOT JUST ABOUT WHAT WE EAT, **BUT ALSO HOW ARE FOOD IS PRODUCED AND WHERE IT COMES FROM.**

Principles of Planet-based Diets

I Promote food choices that reduce environmental impacts while improving human health.

II Promote food choices that support production of food that protects, conserves, and restores biodiversity and sustainably uses natural resources.

III Embrace flexible food choices that are healthy and sustainable and that embody rich and diverse diets and traditions globally.

IV Support just transitions to healthy and sustainable diets for all, with fair and equitable sharing of the costs and benefits arising from these transitions.


A PLANET-BASED DIET IS A WIN-WIN FOR
BOTH OUR HEALTH AND THE PLANET
IF YOU WANT TO LEARN MORE, PLEASE VISIT
PLANETBASEDDIETS.PANDA.ORG

Planet-based Diet Module 2: Adopting a Planet-based Menu in Meal Planning
bit.ly/TSDPBD2

ADOPTING A PLANET-BASED MENU IN MEAL PLANNING

After learning about the principles of Planet-based diets, the second part of this module talks about how you can adopt those principles in meal planning. In adopting Planet-based diets in your menus, you are helping your customers access meals that are good for both human and planetary health. You can watch and learn all of these in the Planet-based Diet Module 2 Video – Adopting a Planet-based Menu in Meal Planning.

In the next part, we are going to share six (6) steps you can use to reassess your existing menu and practices. It lists down questions that can aid in your decision making when transitioning to become a more planet-friendly establishment.

STEP 1. REVISIT MENU LISTINGS REGULARLY

Main Dishes

- Do your dishes have other protein alternatives?
- Do your dishes have vegetarian options?
- Do you offer other main dishes that are mostly plant-based?
- Do you minimize the cooking process involved in preparing the dishes?
- Do you use seasonal and local items?
- Do you lessen the use of salt, and use herbs and other natural aromatics instead?
- Do you consider lessening food items in your menu?

Soups, Appetizers, Side Dishes, Rice, and Other Carbohydrate-Rich Food

- Do you use seasonal and local menu items?
- Do you use heirloom or local rice varieties?
- Do you lessen the processes involved to maintain nutritional quality?
- Do you produce your own food items such as pickled products, salad dressings, and other condiments?

Desserts and Beverages

- Do you lessen sugar content or offer sugar free options?
- Do you offer fresh and seasonal fruit platters and fresh fruit juices?
- Do you innovate your dessert and beverage offerings to make it more nutritious?

STEP 2. GO LOCAL AND GROW YOUR OWN

- Are your ingredients fresh, in-season, locally and sustainably sourced?
- Do you work with sustainable suppliers?
- Do you support organic and local farms?
- Do you buy directly from the producers?
- Do you lessen the use of imported products?
- Do you innovate your menu items by using local and indigenous fruits and vegetables?
- Do you have our own on-site garden for your ingredients?

To learn more about how to start and set up your own urban garden, visit our ***Urban Gardening for Sustainable Diners*** Module.

STEP 3. MAKE YOUR PORTION SIZES REASONABLE

- Do you consider portion sizes of your food?
- Do you consider the amount of meat present in your dishes?
- Do you offer half servings?
- Do you offer for sharing options?
- Do you support portion sizes by having the right size of containers, dinnerwares and glasses?

STEP 4. AVOID FOOD WASTE AT ALL COST

- Do you ensure that menu preparation is planned accordingly?
- Do you regularly check your storage?
- Do you maintain your storage equipment?
- Do you do a la minute preparation to ensure freshness?
- Do you prepare just enough?
- Do you use less inedible garnishing?
- Do you implore head to tail, skin to seeds utilization?
- Do you consider using ugly produce?
- Do you make your customers aware of your food waste initiatives and also involve their participation in the process?

To learn more about how to prevent, manage, and divert food waste, visit our ***Food Waste Management*** Module and ***Food Waste Diversion*** Module.

STEP 5. REDUCE OVERALL WASTE AND PACKAGING

- Do you buy in bulk for regularly consumed items?
- Do you buy items with less packaging?
- Do you support the use of reusable items?
- Do you use sustainable packaging?

To learn more about reducing unnecessary plastics and managing necessary packaging, visit our ***The Plastics Problem and Lessening Single Use Plastics (for Sustainable Diners)*** Module.

STEP 6. CONSERVE RESOURCES SUCH AS ENERGY AND WATER

- Do you conserve water by using vegetable soups and stocks?
- Do you use energy efficient equipment both for preparation and storage?
- Do you lessen cooking processes and cut down cooking time of some dishes?
- Do you only serve water and condiments upon request?
- Do you save the food washings for other purposes?

To learn more about how to efficiently use resources such as energy and water, visit our ***Efficient Use of Resource*** Module.

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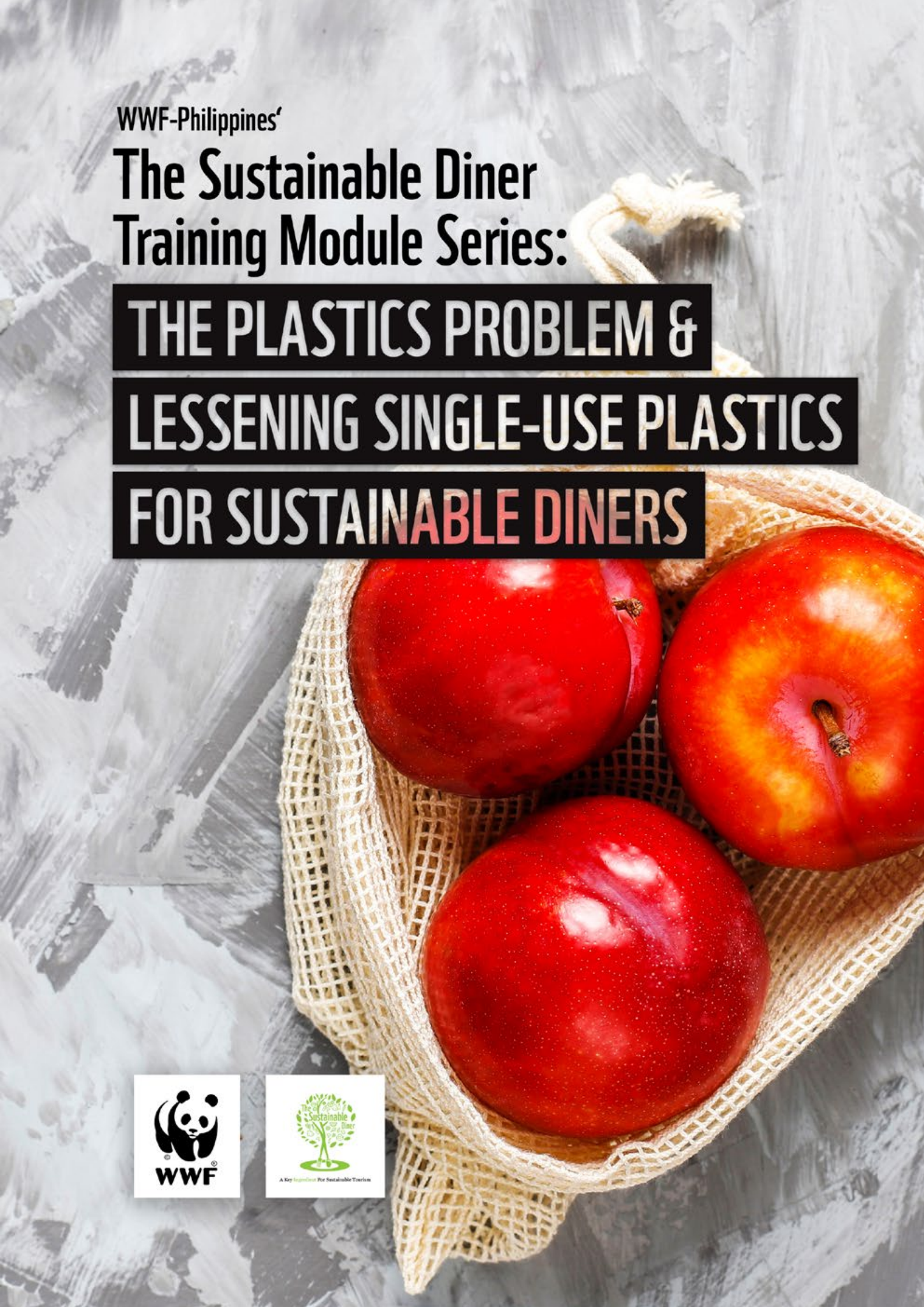
WWF-Philippines'

The Sustainable Diner Training Module Series:

THE PLASTICS PROBLEM & LESSENING SINGLE-USE PLASTICS FOR SUSTAINABLE DINERS




NO MORE
PLASTIC

CONTENTS

INTRODUCTION

DURING the Covid-19 pandemic, when government regulations prohibited on-premise dining in food service establishments to slow down the spread of the virus and protect consumers, we turned to delivery and drive-through services. These services allowed stressed, anxious, and tired consumers to have a little sense of normalcy as they get to taste their favorite restaurant food. In addition, this served as an avenue for food establishments to salvage their struggling businesses. Different kinds of packaging allowed us to deliver food products while still retaining their quality and ensuring food safety.

Plastic is one of the materials that offers flexibility and functionality. It can contain food products, maintain quality, and protect it from contamination. Plastic also allowed us to protect ourselves and establishments from the virus through face shields, disposable gloves, and acrylic dividers. But how we manage plastic for disposal, prior to and during pandemic, poses a great threat to the environment. We can all take this opportunity to revisit our relationship with plastics as we welcome a better normal both for us and the planet. Learn more about what you can do as a food service establishment to reduce unnecessary plastics and manage necessary ones in this module.

OBJECTIVES

This part of the series aims to:

- Educate learners about the existing plastics problems; and
- Introduce solutions that can be integrated in restaurant operations without compromising food safety and customer dining experience.

At the end of this module, learners are expected to:

- Recognize the effect of plastics on the environment, especially plastics that are used in food service establishments;
- Contrast unnecessary with necessary plastics in the food service and hospitality operations;
- Identify ways to reduce or eliminate unnecessary plastics;
- Identify ways to manage necessary plastics after use; and
- Apply plastic elimination and management strategies in daily food service and hospitality operations.

bit.ly/TSDPLASTIC

THE PLASTICS ISSUE

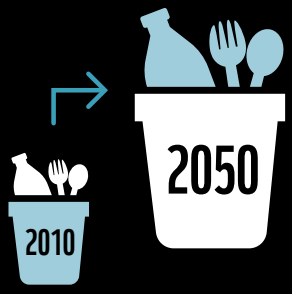
Mismanagement of plastics is a threat to us and the environment.

11M

11 MILLION TONNES

OF PLASTIC ENTERS THE OCEAN EVERY YEAR

(Pew Trust and Systemiq, 2020)



+300%

PLASTIC WASTE IS PROJECTED TO QUADRUPLE BETWEEN 2010 AND 2050

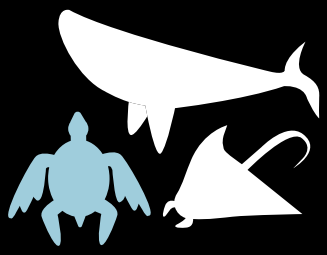
<60%

OF GLOBAL MARINE PLASTICS ENTERS THE OCEAN FROM CHINA, INDONESIA, MALAYSIA, PHILIPPINES, THAILAND AND VIETNAM

CO_2

860 MILLION TONNES

CO_2 EMISSIONS FROM PLASTICS IN 2019 (ABOUT 2.3% OF TOTAL GLOBAL EMISSIONS)



800 SPECIES

ARE DIRECTLY THREATENED BY MARINE PLASTIC DEBRIS

BY 2050, THERE MAY BE

MORE PLASTIC THAN FISH

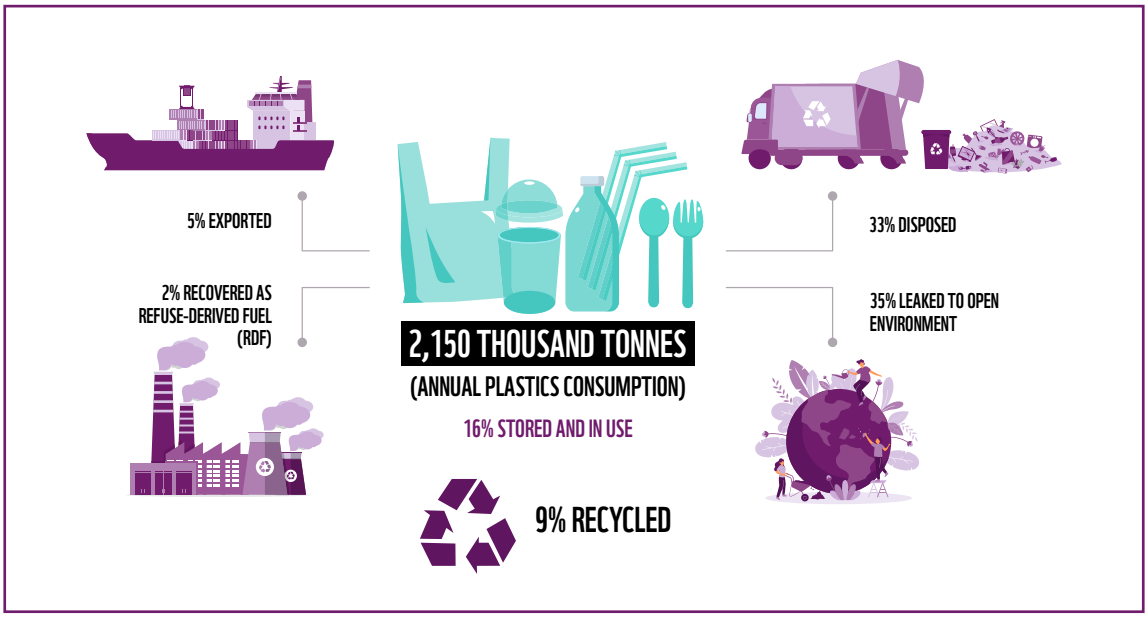
IN THE SEA BY WEIGHT

Source: WWF Briefing Report 2020: Plastic packaging in Southeast Asia and China

PLASTICS MATERIAL FLOW IN THE PHILIPPINES

WWF Philippines published a report showing the current state of plastic consumption and management in the Philippines (World Wide Fund for Nature, 2020).

Flow of Plastic Materials in the Philippines (2019)



Source: WWF EPR Report

20KG / CAP/ YEAR
FILIPINOS AVERAGE PLASTIC CONSUMPTION

62.6%
LOW VALUE PLASTICS BASED ON PER CAPITA PLASTIC CONSUMPTION

9%
PLASTIC RECYCLING RATE IN THE PHILIPPINES

35%
PLASTIC WASTE LEAKAGE IN PHILIPPINE ENVIRONMENT

"Limited separation of high-value recyclable and virtually no collection of low-value plastics. Extraction is largely informal and depends on the functioning recycling market."


WWF'S COMMITMENT
STOP THE FLOW OF PLASTICS
ENTERING NATURE BY 2030
Elimination of unnecessary plastic
Doubling reuse, recycle, and recovery
Ensuring the remaining plastic is sourced responsibly
WWF
NO PLASTICS
IN NATURE INITIATIVE
bit.ly/AyokoSaPlastik

WWF'S INITIATIVES

Plastic Action (PACT) is a business engagement initiative for voluntary, high-impact, and synchronized industry action adhering to the vision of No Plastics in Nature– to stop plastic waste leakage into our oceans by 2030.

WWF aims to work with our partners to:

- Reduce or eliminate unnecessary plastics
- Switch to recycled or sustainable plant-based materials
- Support a circular economy by moving to 100% reusable or recyclable product & packaging design models
- Remove plastics from nature by making a net positive impact (collecting and recycling more plastics than you use)
- Support conservation, innovation, & research projects related to plastics

These goals vary among partners and it will depend on what businesses are able and ready to commit to.

WWF

PACT
No Plastics in Nature

A **WWF INITIATIVE** FOR
A CIRCULAR ECONOMY AND
NO PLASTICS IN NATURE BY 2030

ARE ALL SINGLE-USE PLASTIC CLASSIFIED AS UNECESSARY?

In this module, we will talk about what truly is necessary in your business and what can be removed or reduced. We know that we cannot totally eliminate all the plastics in our operations, so let us learn how to distinguish which among them are necessary and which are not.

What is Unnecessary Plastic?

Short Answer: It depends.
It depends on...

Local Laws and Ordinances

Some of the local government units have taken their action against single-use plastics. We encourage you to follow local ordinances as a guideline in evaluating whether plastics are necessary or unnecessary in your facility.

Requirements for Product Integrity

You also want to make sure that your products will maintain its quality, taste, viability, and safety. Assess which materials are necessary for product integrity and if it is not, then you can consider reducing usage of that product.

HOW DO WE ELIMINATE UNNECESSARY PLASTICS?

In this part, we will share the WWF's Recommended Goal-Setting process to think through the materials that you are using and better understand their roles in your business. You can take a personal approach in every step of this process. We are going to show examples that will guide you in each step but the ultimate decision to designate specific categories will depend on you.

1. PLASTIC FOOTPRINT LIST

Plastic Footprint List will help you understand where plastics are in your operations. Start by dividing your operations into specific areas. Then list all the items made of plastic in these areas. You can choose how you want to designate areas in your operations to however you see fit. This list will be your guide in auditing plastics in your facility.

Area	Items Consisting of Plastics
Hotel Room	Bottled Water, Toothbrush, Comb, Hand Soap, Shampoo & Body Wash Bottle, In-room Bin Liner, Guest Laundy Bag
F&B Establishment	Takeaway Packaging, Straw, Cutlery, Stirrer
F&B Kitchen	Food Storage Bag & Container, Plastic Wrap
Hotel Laundry	Clean Laundry Cover Bag

2. GATHER BASELINE DATA

Next step is to gather baseline data. You can start by listing the items you identified in your Plastic Footprint List. Then understand how much is **used** for a specific timeframe. You also have the freedom to choose the timeframe. In the sample, we showed a daily count, then eventually a monthly count. This will help you see how much of a material you are using.

Plastic Consumption (by pc) in Hotel Rooms

ITEM	ESTIMATED QTY USED PER ROOM (PCS/DAY)	TOTAL QTY USED MONTHLY* (PCS)
Bottled Water	4	36,000
Toothbrush	2	18,000
Comb	1	9,000
Body Wash Bottle	1	9,000
Shampoo Bottle	1	9,000
In-room Bin Liner	1	9,000

** Based on a maximum occupancy of 300 hotel rooms in 1 month*

3. GATHER PROCUREMENT DETAILS

After understanding your usage data, this next step will help you assess your **stocks and supply**. Knowing that suppliers have minimum order quantity (MOQs) and timeline, this step aims to find whether there is a difference in the rate that plastics are being used from the rate that you are ordering them.

Again, you can start by listing the items, then listing how much has already been purchased for a specific timeframe. The timeframe will depend on what is easier for you to account. Just keep in mind that in this step, you want to understand how much you already have and how much you have commitments for in relation to how much is the actual usage.

Plastic Consumption (by pc) in Hotel Rooms		
ITEM	QUANTITY PURCHASED* (PCS)	TOTAL QTY PURCHASED ANNUALLY (PCS)
Bottled Water	40,000	480,000
Toothbrush	19,000	228,000
Comb	10,000	120,000
Body Wash Bottle	12,000	144,000
Shampoo Bottle	12,000	144,000

** Based on a maximum occupancy of 300 hotel rooms, including buffer of inventory purchased monthly*

4. ACHIEVE LOWEST HANGING FRUIT

After understanding your current plastic situation, this next step will assist you in making a decision on how to handle each item on the list. Start with one item. Lay out how much is being used (as you identified from Step 2) and how much is being purchased and stored (as you identified from Step 3).

For the last two (2) columns, we recommend that you establish a grading system (e.g. 1 being the least necessary or easiest to remove and 3 being the most necessary or hardest to remove).

Necessity of Item – how much do you really need this item? Do you really need this item to maintain product integrity?

Ease in removal or reduction – how easy is it to remove or reduce this item? How easy or hard will it be to apply changes if you remove or reduce this item?

The information you will put on this column will help you identify your lowest hanging fruit.

Plastic Consumption (by pc) in Hotel Rooms					
ITEM	TOTAL QTY USED MONTHLY* (PCS)	TOTAL QTY PURCHASED ANNUALLY* (PCS)	STOCK INVENTORY* (PCS)	NECESSITY OF ITEM	EASE IN REMOVAL OR REDUCTION
Bottled Water	36,000	480,000	20,000	2	2

5. SET PLASTIC REDUCTION GOALS

After steps 1 to 4, you now have a glimpse of which items you can create interventions for. This is the part where you need to set your plastic reduction goals. You will set your own goals for your facilities. Keep in mind that goals must be time bound, clear, and actionable. You can also communicate these goals with your customers and clients so they can be part of your plastic reduction journey.

It is important that you commit to achieving these goals. You can commit internally or commit by working with WWF.

- **The property will reduce 80% of water bottles by 20xx, by only providing bottled water upon request.**
- **We will implement x trials per year in hotel rooms for sustainable packaging amenities to find the best-fit alternative to be implemented property-wide by 20xx.**
- **The property will no longer give out toothbrushes, combs, razors or cotton buds unless requested, thereby reducing over x million of disposable plastic items by 20xx (benchmarking our 2018 figures).**
- **100% of all disposable containers or amenities to be made of sustainable plant-based materials or recycled plastics by 20xx.**
- **Commit to replacing all avoidable single-use plastics with environmentally-friendly alternatives in the property, either by eliminating them from the supply chain or switching them to recycled sustainable plant-based materials by 20xx.**

HOW DO WE MANAGE NECESSARY PLASTICS?

Now, you already know which materials need to stay in your operations and which ones you can remove or reduce. For those materials that need to stay, how do we prevent them from harming us and the environment?

REDUCE & ELIMINATE

The first step really needs to be reduction or elimination. This entails your commitment to the Goal Setting process discussed previously. By working to achieve the goals you set with your team, you will be able to reduce unnecessary plastics and eventually, eliminate them in your operations.

REPLACE & SWITCH

For materials that really need to stay in your operations since they have an important role for product integrity or food safety, we can still reassess whether there are better alternatives available in the market. If these items are really necessary, you can try to look for sustainable alternatives while still considering functionality of that item.

WWF has a tool that can help you in your decision making when looking for alternative materials. You may visit the Alternative Materials Tools at ***plastic-action.asia/alternative-materials-tool/***. You may reach out to us for more information.

DIGITIZE

Digitization during the pandemic is great for keeping all of us safe but it is also very good for our planet. Instead of having printed materials like menus, you may transition to using QR code menus. This is one of the ways of reducing contact among staff and customers, and at the same time, it is an efficient use of materials. Other digital ways could be cashless transactions and digital receipts. This reduces the outputs involved in payments.

DISPOSE

The last bit is disposal. After going through all of the steps discussed previously, what we need to do with the plastics that are left is to dispose of them properly.

It is very important to segregate your wastes properly. Proper segregation increases the chance that plastics can be recycled or upcycled. The simple act of having more specific labels in your trash bin goes a long way.

Next step is to map out partners and identify end of life alternatives for the wastes you produce in your operations. There are a lot of different waste management players that could aid you in processing your materials in a more responsible way. You can reach out to nearby junk shops, aggregators, processors or recyclers. This is a great way to reduce the amount of plastic that ends up in the environment.

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WWF-Philippines'

The Sustainable Diner Training Module Series:

EFFICIENT USE OF RESOURCES

WWF

The Sustainable Diner

A Key Ingredient For Sustainable Tourism

CONTENTS

INTRODUCTION

THE Philippines is blessed with an abundance of natural resources. Sometimes, its abundance leads us to think that we will never run out of these resources. However, as with all things in our planet, natural resources like water and energy are finite. In this module, you will learn what it takes to collect these resources from nature and why it is important to use them efficiently.

Knowing that water and electricity are limited resources, our consumption patterns must allow nature to recover and regenerate. We should ensure that the next generation will still have access to environmental resources and benefits that we are enjoying today. Food service establishments like you can take part in securing the future of Filipinos by making sure that you are efficiently using water and energy in your establishments. Learn more about the specific actions you can take to be a more efficient sustainable diner in this module.

OBJECTIVES

This part of the series aims to:

- Introduce simple and easy ways of efficiently managing resources, specifically water and energy; and
- Educate restaurants about the benefits of efficiently using environmental resources on your operations and the environment.

At the end of this module, learners are expected to:

- Recognize the impacts of wasteful use of water and energy on the environment;
- Identify ways to efficiently use water and energy;
- Assess areas/aspects in operations where efficiency can be practiced; and
- Apply efficient use of water and energy in your own restaurant setting.

Efficient Use of Resources Module: Journey of Water for Tourism
bit.ly/TSDWATER

WATER

This part of the module talks about our current relationship with water and why it is important to conserve water. We will also share tips on how you can efficiently use water in your establishments. You can watch and learn all of these in the first video of the ***Efficient Use of Resources*** module – Journey of Water for Tourism.

WHERE DOES WATER COME FROM?

Water is life. Life has been possible on our planet because of water. It keeps humans, wildlife, and nature alive. Department of Science and Technology- Food and Nutrition Research Institute's DOST-FNRI Pinggang Pinoy recommends drinking around 5-12 glasses of water daily (Philippine Information Agency, 2017). On average, production of one (1) kilogram of rice consumes around 1,432 liters of water (International Rice Research Institute, n.d.). During the Covid-19 pandemic, water served as one of our primary defenses against spreading the virus as we are encouraged by experts to constantly wash our hands. We use water in our daily activities but have we ever asked where our water comes from?

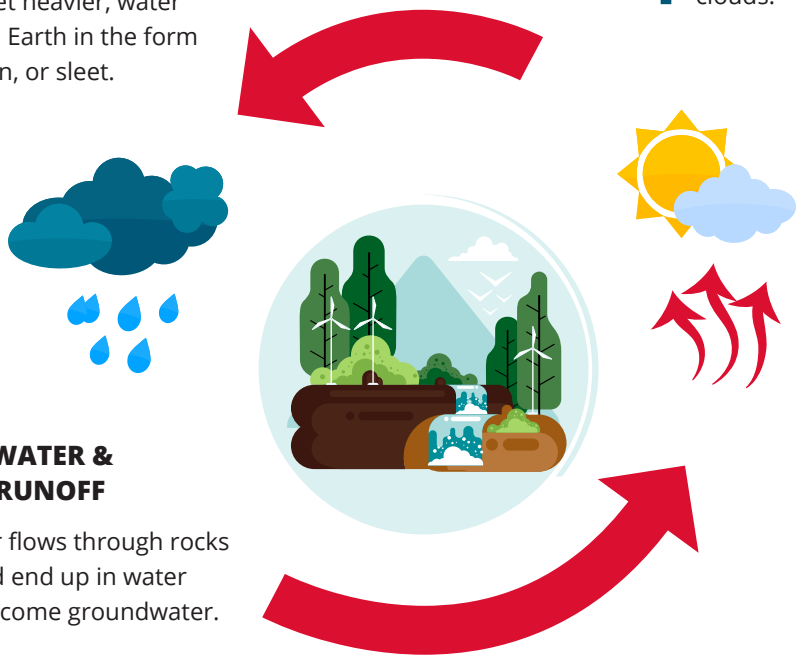
WATER CYCLE

PRECIPITATION

As clouds get heavier, water falls back to Earth in the form of snow, rain, or sleet.

CONDENSATION

Eventually, the water vapor condenses into clouds.



GROUNDWATER & SURFACE RUNOFF

Some water flows through rocks and soil and end up in water tables to become groundwater.

Some water flows above the surface and collect in streams, rivers, and lakes which eventually flow back to sea and oceans to complete the cycle.

EVAPORATION

The heat of the sun heats up the oceans and other bodies water that eventually evaporates water. The atmosphere transports these water vapor.

For Metro Manila

The main source of water is **Angat** and **Ipo Watershed**.
Dams are created to help capture water from watersheds; tunnels and pipes are built to convey water from watersheds to our homes. Ipo Dam was created specifically to provide water for Metro Manila. Water is channeled from Ipo Dam Reservoir to La mesa Dam Reservoir where concessionaires distribute it to the population.

Capture - Clean - Convey

Now that we know that water actually comes from nature and not from the faucet, we must also understand that it takes a lot to capture water. Cleaning water to satisfy the standards based on how we are going to use it is another complex process. After cleaning, it will eventually be conveyed to where the water is needed.

Everyday, when you turn the faucet on, keep in mind that the water coming out of it came from nature and has gone through a long process to be available in our homes or establishments. Then, once we are done using the water for our desired purpose, it must go through another rigorous process of cleaning before we put it back out to nature to complete the water cycle. It is mandatory to process dirty water before pumping it out back to the sea or to the ground.

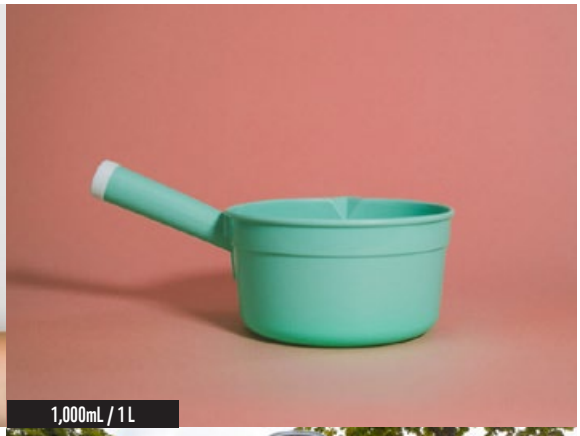
WATER MANAGEMENT

We often talk about how much water we need and what we need to do to increase the supply of water. However, these solutions sometimes require infrastructure that sometimes damage the environment. In this module, we will talk about Water Demand Management so we can make more out of our water supply.

WATER VOLUME

We will help you visualize water volume through these examples:

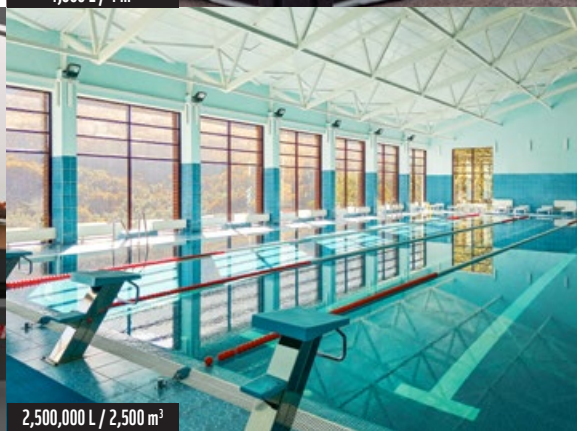

200mL


1,000mL / 1 L


20,000mL / 20 L


1,000 L / 1 m^3


30,000 L / 30m^3


2,500,000 L / 2,500 m^3

WATER DEMAND MANAGEMENT

Here are things that we can look at to ensure that we are using water wisely while still conserving the environment, our ultimate source of water.

Water Loss Reduction

You can reduce water loss by making sure that there are no leaky pipes and faucets in your facilities. An overlooked dripping faucet can lead to massive amounts of clean water being wasted.

Pressure Management

You can regulate your water consumption by assessing the pressure of your system or simply the amount of water that flows out of your faucet per second. The law imposes a minimum pressure level to avoid contaminants from entering the pipes. But if you need your water to reach high elevations (e.g. third or fourth floor of your building), explore the use of a separate pumping system to propel the water instead of relying on the water system alone.

Water Reuse

Water reuse is the strategy where, as much as possible, you try to re-use the water that you previously used. High quality water, after initial use, can be reused for other purposes that do not require very high-quality water.

Rainwater Harversting

Rainwater harvesting is the most famous recommendation for water harvesting. It is very cheap to integrate in existing roofing systems. The total amount of water you can harvest will depend on the size of your roof. This is an augmentation option and not a complete replacement of your existing water source.

Water Efficient Fixtures

These are technologies that can help you save water without or with minimal changes to behavior.

Water Conservation

This is a conservation measure where you collect all the water you used then later use it to flush the toilet (e.g. using water from washing machines to be used for cleaning cars). But you should also assess how much water is actually saved in the long run using conservation techniques.

Water-Use Restriction

Water-use restriction is possible especially in areas where water is scarce. For example, during times of water shortage crisis or in areas with water scarcity, there are certain facilities that can be banned like swimming pools or golf courses.

WATER CONSERVATION & MANAGEMENT TIPS FOR SUSTAINABLE DINERS

High Efficiency Toilets

You may explore investing in high efficiency toilets. Water efficient toilet designs allow you to flush using a smaller volume of water without changing the habit of just pushing the plunger.

Water Efficiency Rating for Appliances

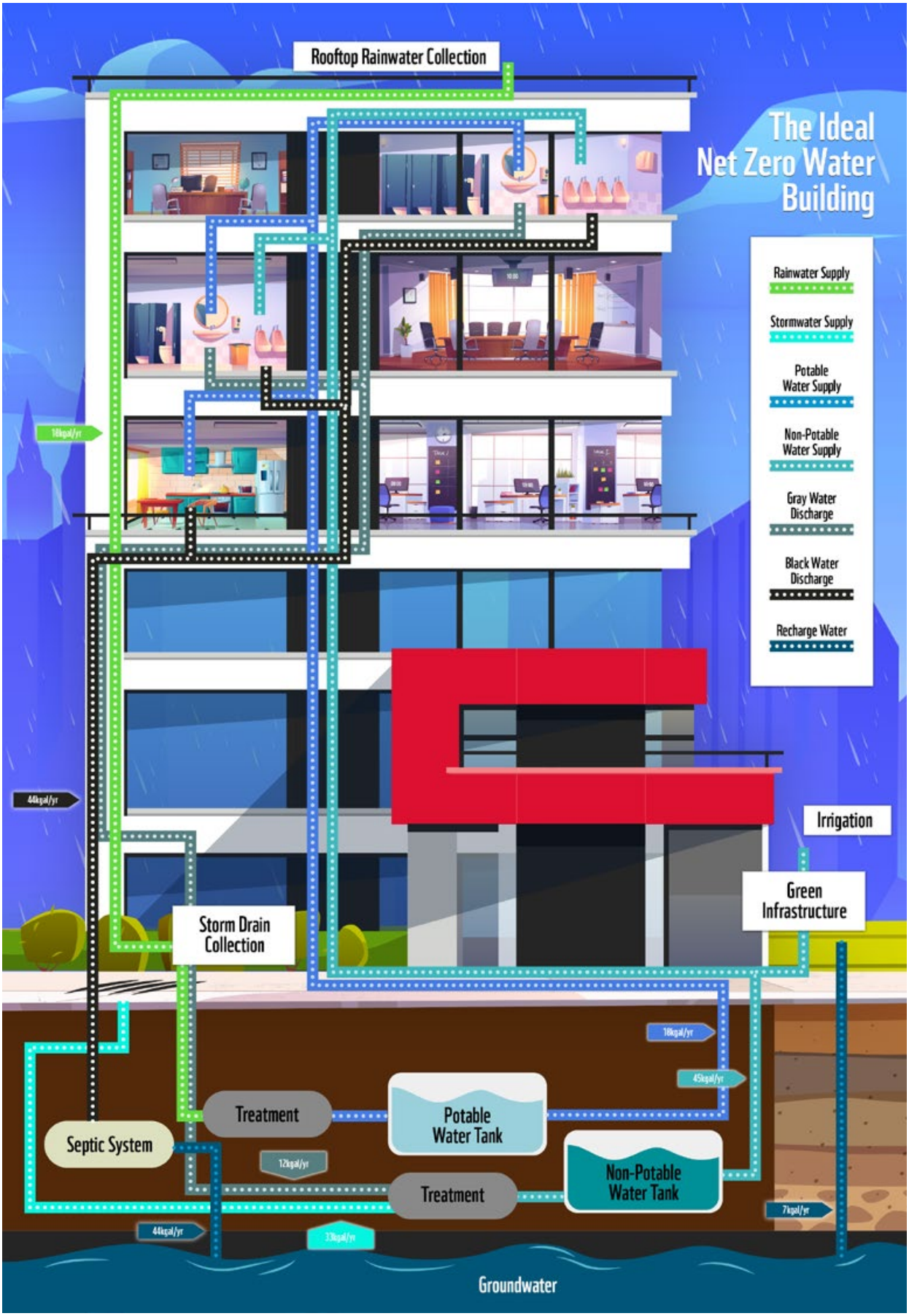
In the Philippines, we have an Energy Efficiency Rating (EER) which indicates how efficient an appliance is in terms of energy consumption. However, we currently do not have a water efficiency rating in the Philippines but other countries require this rating. So if you are looking for appliances that use water, you may search for the water rating of that appliance based on other countries' ratings.

Faucet Nozzles

Flow restrictors are nozzles that you can install in your faucet. Some designs allow water to cover a larger area so you could easily perform your tasks. Some designs also control the volume of water coming out of the faucet since sometimes, water only splatters due to high pressure.

Dual Piping

Dual piping is a system you may explore if your facilities haven't been built yet. This is a very useful system that maximizes the use of water within your entire facility. In general, this system allows you to use potable water where they are needed, and re-use treated water for other purposes like irrigation, flush, etc.


Rooftop Rainwater Collection
The Ideal Net Zero Water Building
Rainwater Supply
Stormwater Supply
Potable Water Supply
Non-Potable Water Supply
Gray Water Discharge
Black Water Discharge
Recharge Water
18kgal/yr
44kgal/yr
Irrigation
Green Infrastructure
Storm Drain Collection
18kgal/yr
45kgal/yr
Treatment
Potable Water Tank
Septic System
12kgal/yr
Treatment
Non-Potable Water Tank
7kgal/yr
44kgal/yr
33kgal/yr
Groundwater

WATER RISKS

There are business related risks that are brought by the presence, absence, or the quality of water. These are risks that businesses should know, mitigate, and manage to avoid losing customers and clients.

Physical Risks is the risk of not having enough clean water or having too much water in the case of flooding.

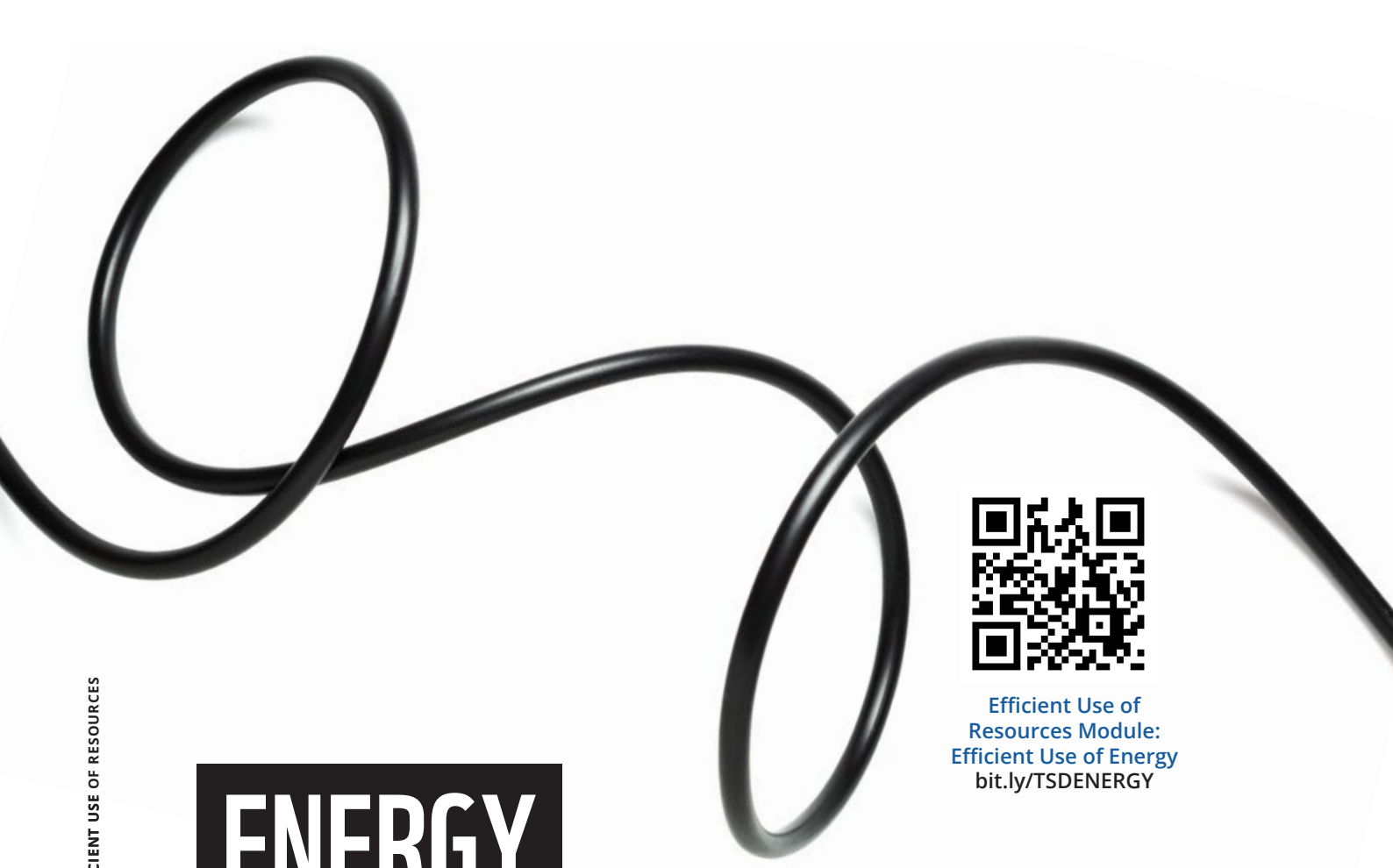
Regulatory Risk is the risk that regulations from the government will require to stop your operations due to water problems (e.g. 2018 Boracay closure).

Reputational Risk is the risk that the reputation of the business will be tarnished due to the quality of water in or around your facility.

Water Risk Filter

World Wide Fund for Nature (WWF) developed a tool to aid businesses in identifying water risks. This is called the Water Risk Filter and you can check the website ***waterriskfilter.panda.org*** to explore. This is a free tool that allows you to explore, assess, and value different risks associated with water in and near your establishments. It will also show some tips on how you can respond to some of these risks.

Water Risk Filter



Efficient Use of Resources Module: Efficient Use of Energy
bit.ly/TSDENERGY

ENERGY

This part of the module talks about energy, how it is transported to us, energy efficiencies in cities and some legislation around energy. We will also share tips on how you can be a more energy-efficient establishment. You can watch and learn all of these in the second video of the ***Efficient Use of Resources*** module – Efficient Use of Energy.

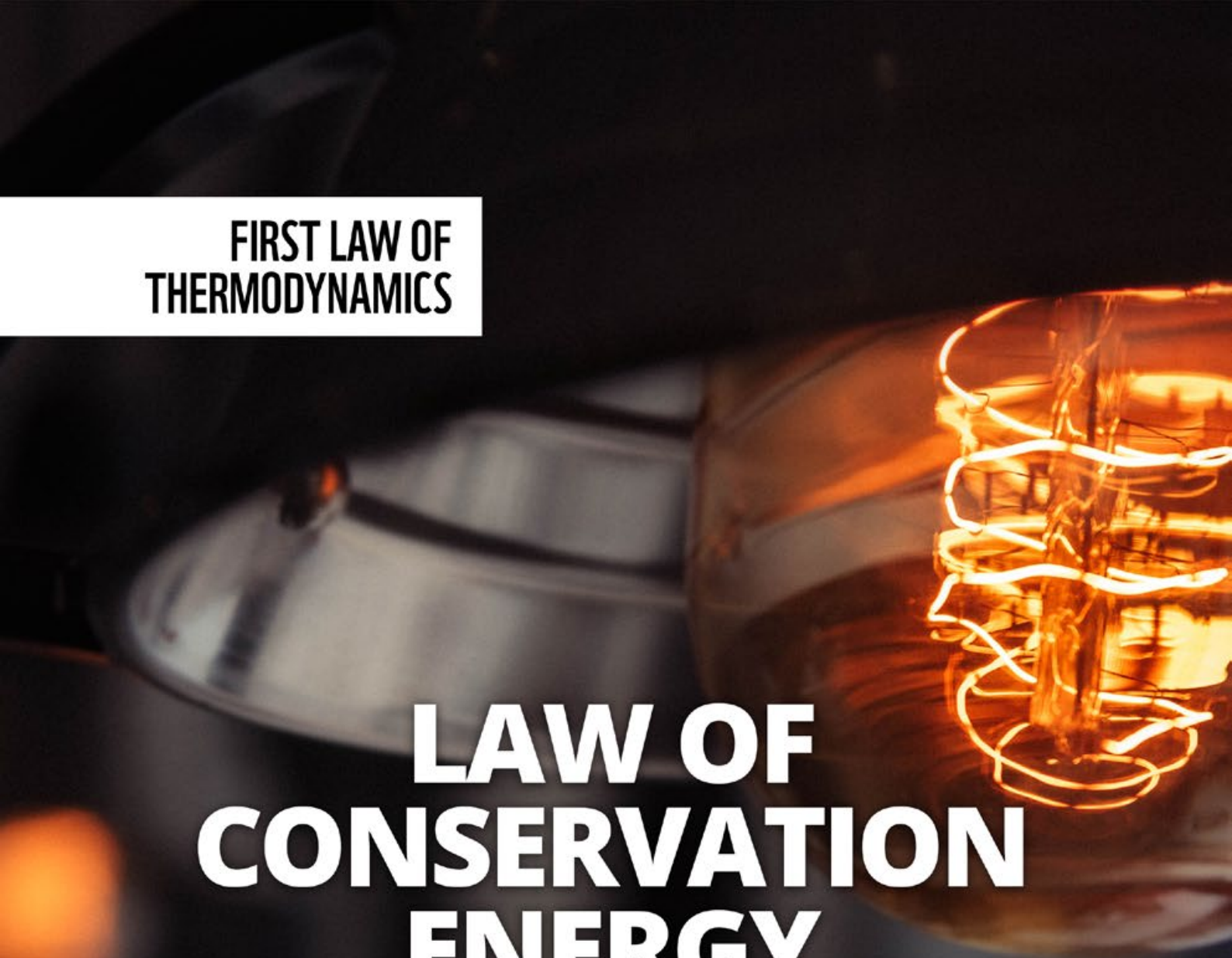
BASICS OF ENERGY

Energy is ubiquitous and we use it every day. From the moment your alarm goes off in the morning to the moment you switch off the lights before you go to sleep. During the pandemic, we were forced to transition to a more virtual mode of interaction and we became more dependent on the use of electricity. Like water, we use energy in our daily activities but have we ever wondered where it comes from?

Definition of Terms

Energy is defined as the capacity for doing work.
Work is causing a change, like a change in position, temperature, and form.

FIRST LAW OF THERMODYNAMICS



LAW OF CONSERVATION ENERGY

"ENERGY CAN NEITHER BE CREATED NOR DESTROYED, IT CAN ONLY BE CHANGED FROM ONE FORM TO ANOTHER."

- ZOHURI (2019)

TYPES OF ENERGY

As stated by the Law of Conservation of Energy, the total amount of energy in the universe is finite and constant. We harness and convert energy to do work for our specific purposes. This energy comes in different forms and we will share with you its basic categories.

State of Energy

Kinetic Energy - energy in motion
Potential Energy - stored energy, or waiting to be used

Forms of Energy

Mechanical Energy - energy that moves objects by applying force
Chemical Energy - energy released when chemical bonds of matter change
Radiant Energy - energy that travels in waves
Thermal Energy - heat energy which involves the vibration and movement of particles
Electrical Energy - flow of tiny charged particles called electrons through conductors like copper wires

Source: (Pochimcherla, 2016)

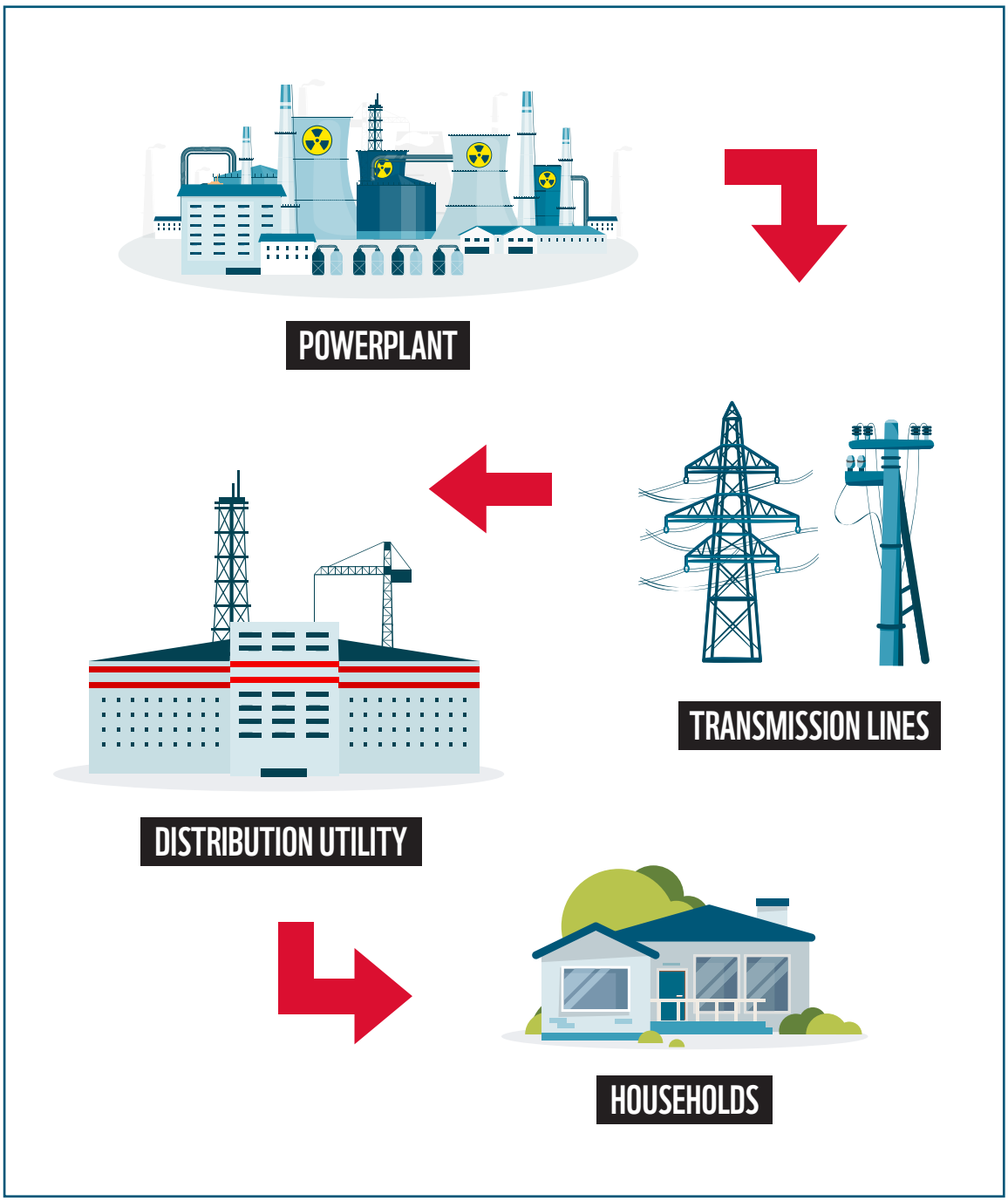
ENERGY AND POWER

	ENERGY	POWER
Definition	Energy is the capacity to do work	Power is the rate at which work is done or energy is transmitted, moved, used, or converted.
Unit	Joules (J) = Watt-seconds (Ws) kiloWatt-hour (kWh) MegaWatt-hour (MWh)	Watt (W) = Joules/second (J/s) kiloWatt (kW) MegaWatt (MW)
Equation	Energy = Power x Time	Power = Energy / Time
Features	✓ Save Energy ✗ Generate Energy	✓ Generate Power ✗ Save Power
Grid	Consumption and Production	Installed Capacity
Example	I left a 60W light bulb on for 30 days, which raised my electric bill by 43.2 kWh	My car's battery can provide 500 amps at 12 volts, which equals 6kW of power

WHAT IS ELECTRICITY?

One of the forms of energy is electrical energy. It is the energy from the flow of electric charge. The electric charge that can power our appliances, equipment, and gadgets is electricity. Electricity is traditionally generated by burning fossil fuels. The steam produced by burning spins turbines and this mechanical energy is transformed by generators into electricity. Electricity is then transmitted to the national grid and distributed by energy utilities to our homes and businesses.

How Do We Transport Electricity?



ENERGY EFFICIENCY IN CITIES

One Planet Cities is an initiative of the World Wide Fund for Nature with an Energy Efficiency Series aiming to offer transformative solutions to make cities energy efficient.

Benefits of Increased Energy Efficiency

ECONOMIC
Reduced energy costs, increased property value and stabilized energy grids.

ENVIRONMENTAL
Reduced greenhouse gas emissions, increased city resilience to climate change and clean air.

SOCIAL
Energy access, better health and greater disposable income.

Actions of Increased Energy Efficiency

1

RETHINK URBAN PLANNING

Work towards urban planning that aims to reduce climate impacts, building cities with integrated mobility plans and efficient cooling and heating measures.

- Work towards more compact cities
- Create integrated mobility plans
- Deploy district cooling/heating

2

OPTIMIZE BUILDING ENVELOPES

Optimize building envelopes to reduce emissions by improving insulation standards, optimizing natural ventilation, promoting green roofs, and encouraging the use of renewable energy.

- Improve insulation standards
- Promote green roofs
- Optimize window-to-wall ration

3

PRODUCE GREEN PRODUCTS AND SERVICES

The **Green Energy Option Program (GEOP)** provides a voluntary policy mechanism that allows electricity end users with an average peak demand of 100kW and above to source your electricity supply from renewable energy suppliers.

Net metering scheme allows electricity customers to install renewable energy facilities (<100 kW) in their own establishments to generate electricity. The excess electricity generated gets exported to the distribution medium so the distribution utility can give you a peso credit.

- Switch to LED in street & traffic lights
- Produce efficient appliances and products for municipal operations

4

RAISE AWARENESS AMONG URBAN DWELLERS

Raising awareness about the benefits of energy efficiency, providing concrete actions to take, and using devices to visualize how energy is used can prompt people to act.

- Run communications campaigns
- Install devices that visualize energy use

ENERGY EFFICIENCY & CONSERVATION ACT (RA 11285)

The Energy Efficiency Act institutionalized energy efficiency and conservation. It promotes and incentivizes efficient use of energy and conservation projects. It also covers performance standards and certifications for energy conservation officers and managers. It mandates local government units to develop their own local energy efficiency and conservation plans (EECP). (Official Gazette, 2019)

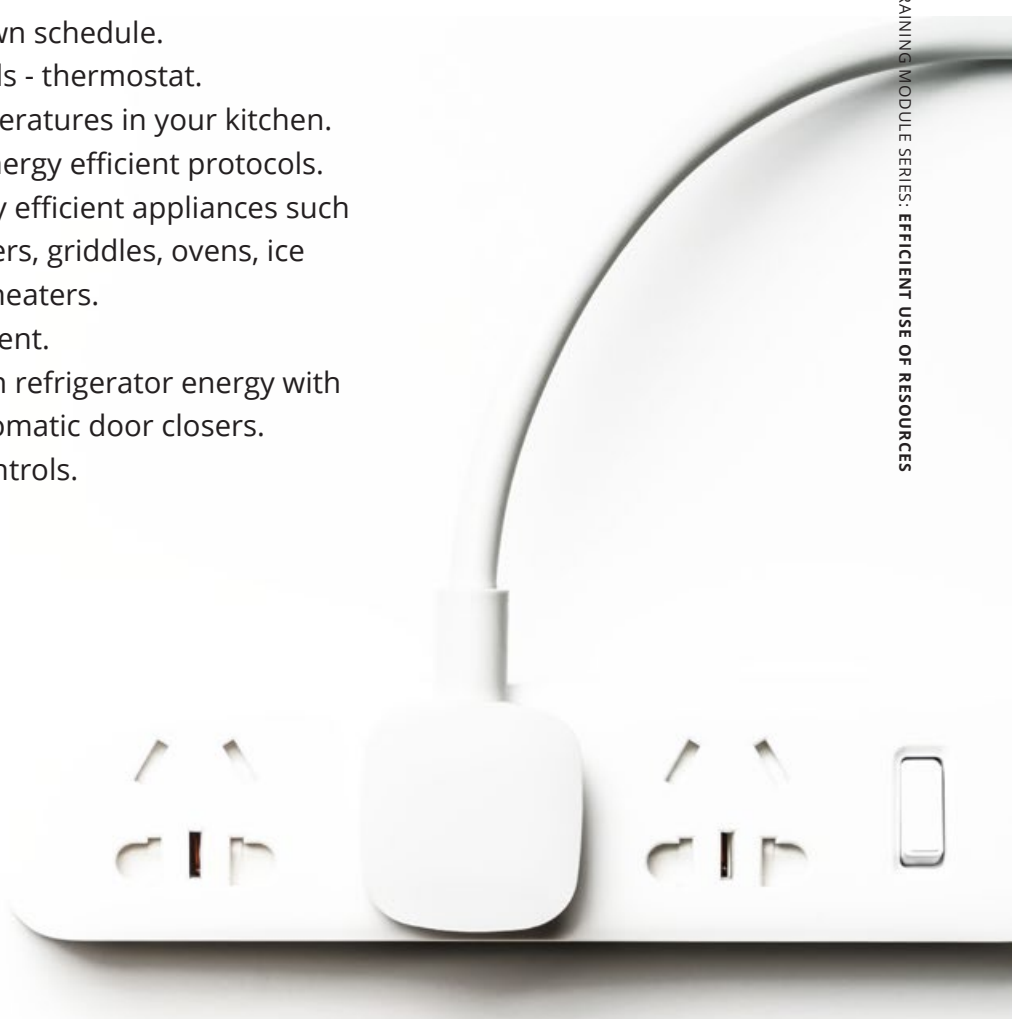
Other policies related to energy efficiency:

- **Department Circular (DC) DC2019-11-014 or the Implementing Rules and Regulations of RA 11285**
- **Department Circular (DC) DC2020-12-0026, or the "Adoption of the Guidelines on Energy Conserving Design of Buildings"**
- **Department Circular (DC) NO. DC2021-01-0001 on the "Guidelines for the Qualifications, Assessment, Registration, and Certification of Energy Conservation Officers, Energy Managers, and Energy Auditors"**

ENERGY CONSERVATION TIPS FOR SUSTAINABLE DINERS

Energy Efficiency and Conservation Tips

- Conduct a basic energy audit to calculate consumption.
- Make your kitchen layout more efficient.
- Insulate doorways, windows, walls and ceilings.
- Insulate your hot water tank.
- Reduce heating and hot water costs.
- Use good kitchen practices.
- Reduce water consumption. Fix leaks.
- Keep up the maintenance.
- Shut down idle equipment.
- Use a startup/shutdown schedule.
- Invest in smart controls - thermostat.
- Reduce ambient temperatures in your kitchen.
- Train staff to follow energy efficient protocols.
- Look into other energy efficient appliances such as energy efficient fryers, griddles, ovens, ice machines, and water heaters.
- Use induction equipment.
- Reduce wasted walk-in refrigerator energy with strip curtains and automatic door closers.
- Implement defrost controls.



Cooling Tips

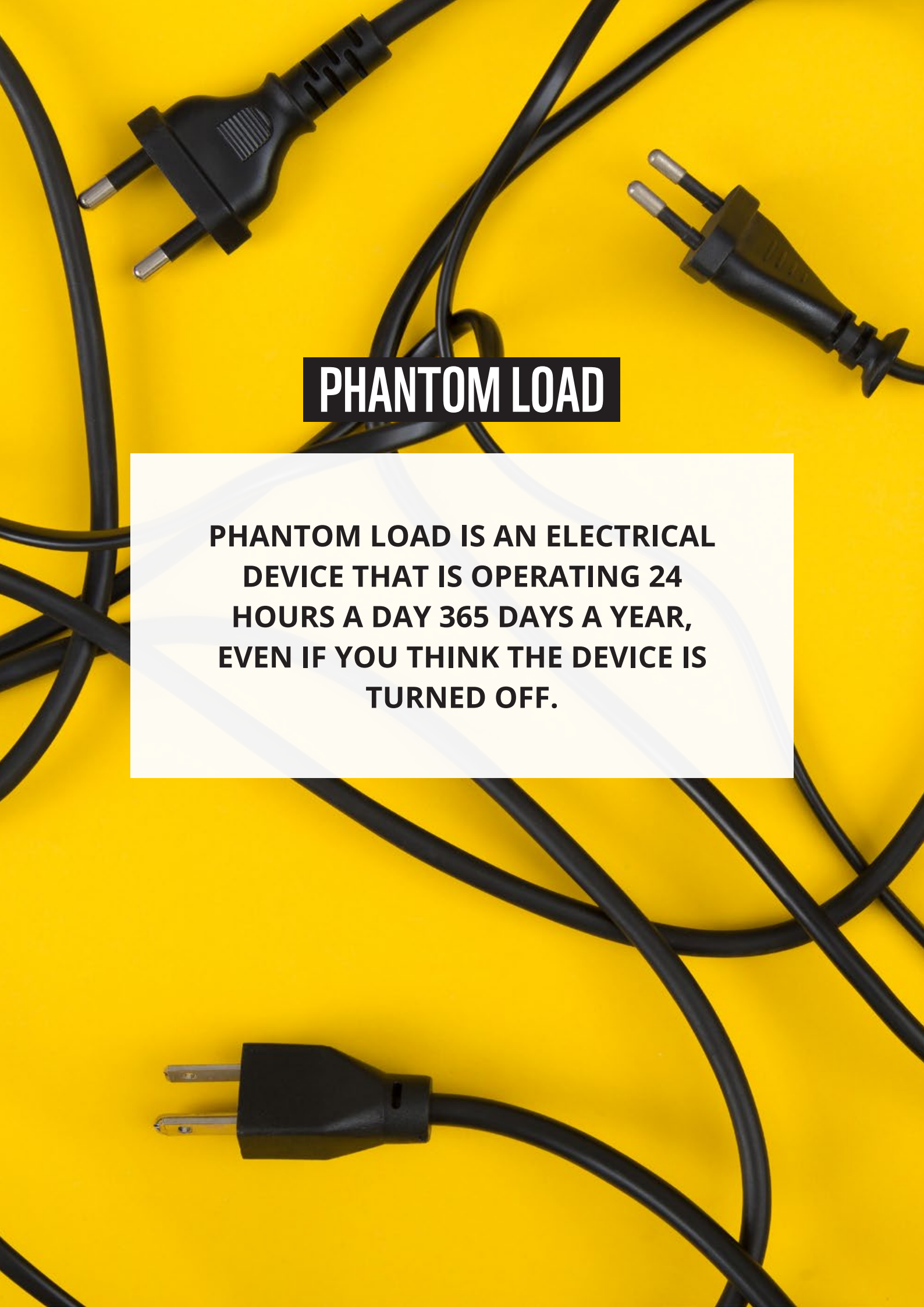
- Purchase air conditioning unit with higher Energy Efficiency Ratio (EER).
- Install in coolest and shady part of the room.
- Set the thermostat at comfortable temperature and use fans in conjunction with your air conditioning unit.
- Seal and insulate ductwork.
- Keep your air conditioning unit clean.
- Have your cooling system checked annually.
- Match your aircon horsepower (HP) to the size of your room.
- Adjust according to the amount of sunlight your room gets.
- Put into account the number of people using the room.

Freezing Tips

- Keep the coils clean.
- Don't keep the door open.
- Make sure the door seals are airtight.
- Set the temperature of the refrigerator between 3° and 4°C, set the freezer between -18° and -15°C.
- Keep the freezer full, even if you just fill it with containers of water.
- Defrost freezer when the ice is ¼" thick.

Lighting Tips

- Turn the lights off in any room you are not using.
- Use lighting controls.
- Use task lighting.
- Keep bulbs and luminaires clean.
- Take advantage of daylight.



PHANTOM LOAD

PHANTOM LOAD IS AN ELECTRICAL DEVICE THAT IS OPERATING 24 HOURS A DAY 365 DAYS A YEAR, EVEN IF YOU THINK THE DEVICE IS TURNED OFF.

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WWF-Philippines'

The Sustainable Diner Training Module Series:

PLANT OUR PLATE; URBAN CONTAINER GARDENING FOR SUSTAINABLE DINERS

WWF

The Sustainable Diner

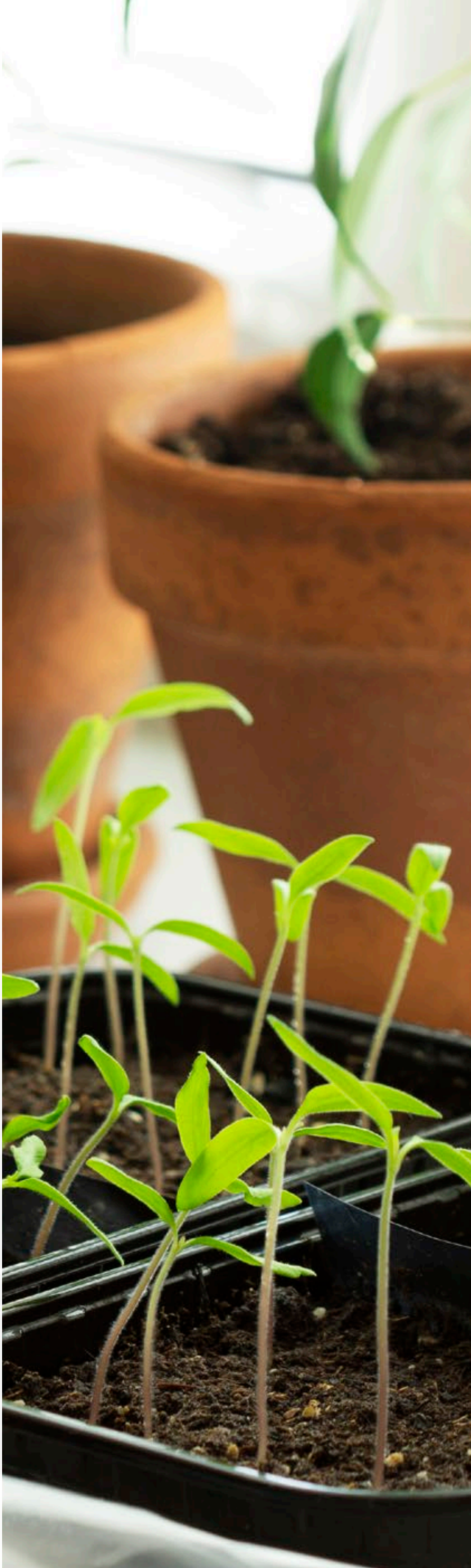
A Key Ingredient For Sustainable Tourism

CONTENTS

INTRODUCTION

OUR consumption patterns have been proven to be disruptive to our health and the environment (World Wide Fund for Nature, 2020). One of the things we can do to stop this is to be more involved in our food system. Knowing the nutritional, social, and environmental aspects of how our food is produced allows us to make conscious decisions for our health, communities and our planet.

Food service establishments can start making active and conscious decisions to help improve consumer health, support nearby communities, and help improve overall health of the planet by considering sourcing ingredients from local farmers that practice sustainable farming and fair pricing. If you have extra space and capacity, you may also explore setting up your own garden. Learn more about the procedure and advantages of setting up your own urban container garden in this module.



OBJECTIVES

This part of the series aims to:

- Educate restaurants about the benefits of having their own urban garden setup; and
- Introduce basic concepts of urban gardening, and how to start and maintain an urban garden.

At the end of this module, learners are expected to:

- Recognize the beneficial impacts of having an urban garden in or near restaurant facilities;
- Enumerate factors that are essential in starting and maintaining an urban garden;
- Assess possible areas fit for urban gardening; and
- Practice urban gardening.

FOOD SECURITY

> "Food security is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and preferences for an active and healthy life."
>
> *- World Food Summit (1996)*

Dimensions of Food Security

Food availability - The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

Food accessibility - Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet.

Utilization - Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

Stability - To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

Source: (Food and Agriculture Organization of the United Nations, 2006)

SUSTAINABLE LOCAL PROCUREMENT

"**SUSTAINABLE PROCUREMENT** means making sure that the products and services we buy are as sustainable as possible, with the lowest environmental impact and most positive social results."

- United Nations Development Programme (2015)

In the context of food...
"**LOCAL FOOD** refers to food that is produced near its point of consumption."

- Food and Agriculture Organization of the United Nations (2014)

"**SUSTAINABLE LOCAL PROCUREMENT** means that in addition to food produced near its point of consumption, other sustainability themes are also considered such as: food sovereignty, fair pricing, and environmental conservation."

- Food and Agriculture Organization of the United Nations (2014)

THE SUSTAINABLE DINER PROJECT

encourages food service establishments to practice sustainable local procurement whenever possible. We encourage you to source ingredients locally and utilize seasonal produce. It is preferable if ingredients are sourced in nearby communities, produced through sustainable farming and fishing practices, and are priced fairly. This gives a better chance of getting fresh and high-quality ingredients with less transport stress and damage. On top of that, it helps minimize carbon footprint due to transport and empowers local communities by supporting their livelihood.

Various Forms of Sustainable Local Procurement

1. Farmers' market
2. Community Supported Agriculture (CSA)
3. Local food box delivery schemes
4. Local food procurement programs by public institutions
5. Support to local products in supermarkets

To learn more about local food procurement initiatives of the government, visit the Department of Agriculture eKadiwa initiative for more details at ***www.ekadiwa.da.gov.ph***

OTHER ORGANIZATIONS THAT PROMOTE SUSTAINABLE LOCAL PROCUREMENT

Good Food Community
instagram.com/goodfoodcommunity/

Rural Rising PH
join.ruralrisingph.com

Sierreza Community Supported Agriculture
instagram.com/sierreza/

Plant Our Plate; Urban Container Gardening for Sustainable Diners
bit.ly/TSDGARDEN

URBAN GARDENING

If you have the capacity and space to produce some of your ingredients, you may consider setting up your own urban container garden.

Why Grow a Food Garden?

1. Passive income; decrease your costs across the board
2. Premium on hyperlocal food; increase overall profit
3. Food for all-season; menu flexibility
4. Quality control; source of good food supply
5. Lowers your carbon footprint

HOW TO START YOUR OWN URBAN CONTAINER GARDEN?

1. GARDEN SITE SELECTION

When choosing the appropriate garden site, consider the following:

- ✓ Access to enough water
- ✓ Access to enough sunlight and shade

Access to sunlight may dictate which crops can be grown in your site. Be creative and innovative! You may utilize idle spaces such as balconies, rooftops, and backyard.

It is also important to plan how you are going to utilize your available space. You can plant crops alongside companions that can be beneficial for natural crop protection.

Here's a list of vegetables that grow fast and easy:

- Alugbati
- Kamote
- Pechay
- Kangkong
- Onion
- Basil
- Lettuce

COMPANION PLANTING

SOURCE: INTERNATIONAL INSTITUTE OF RURAL RECONSTRUCTION (IIRR)

WWF

EGGPLANT, CORN, SITAO, RADISH

ONION, POTATO, CELERY, GARLIC

CABBAGE, CAMOTE, SQUASH, PECHAY

LETTUCE, BEANS, SQUASH, PEPPERS

SQUASH, ONION, LETTUCE, PECHAY

CARROTS, RADISH, CUCUMBER

CORN, PEAS, CUCUMBER, POTATO

CUCUMBER, UPO, AMPALAYA

2. GROWING THE SEED

To grow your seed, you need soil with a nurturing environment. Your soil is a good candidate for a soil mix if it has...

- ✓ Good porosity;
- ✓ Good water retention capacity;
- ✓ Nutrient rich organic matter; and
- ✓ No toxic chemicals.

Composition of Potting or Soil Mixes

- Equal parts of Rice Hull, Garden Soil, and Compost (1:1:1)
- Equal parts of River Sand, Garden Soil, and Compost (1:1:1)

You must sieve, mix, and solarize your potting mixes for eight (8) hours. Then, you can start sowing your seeds.

There are two (2) ways of sowing seeds

1. **Direct sowing** – you just directly plant your seeds in the soil, usually done for leafy vegetables and large seeds
2. **Indirect sowing** – usually with the use of a seedling tray. Seed packaging normally indicates if it needs to go through indirect sowing.

How to sow seeds that needs indirect sowing?

1. Partially wet the potting medium or soil
2. Put ample amount of soil in the seedling tray (or any container you may see fit)
3. Place one seed per hole
4. Partially cover the seeds with potting medium
5. Keep in a safe place (away from stray animals or birds)
6. Put a label. Indicate crop name and date of sowing.

Give attention to the health of your soil. You will have a greater chance of growing crops if your soil is enriched with nutrients and beneficial microbes.

Learn more about how you can integrate a soil enriching initiative in your facility through the ***Food Waste Diversion*** Module.

3. CHOOSING THE CONTAINER

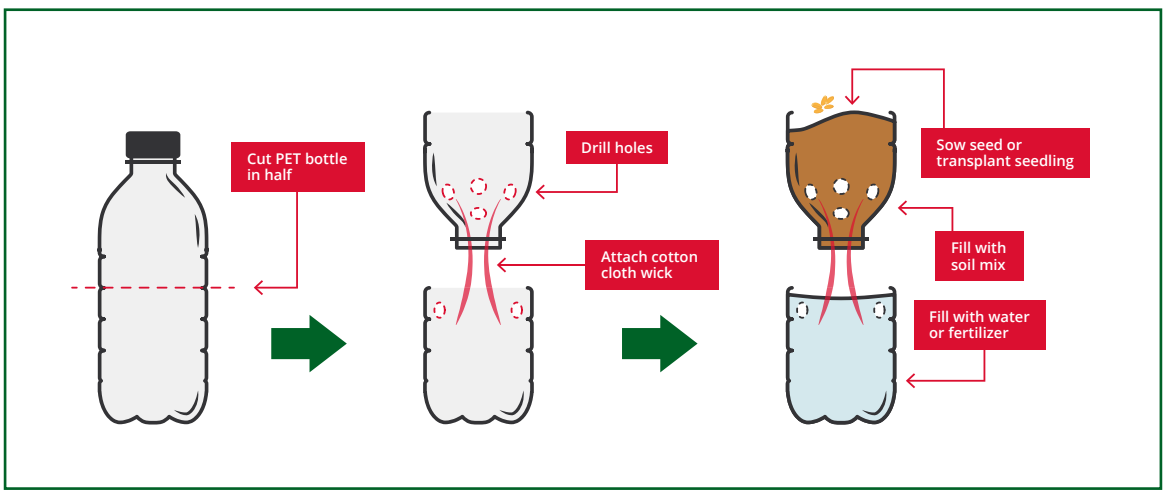
Container gardening offers a solution to the limited space available in urban areas. Utilizing single-use plastics as plant containers can also contribute to reduce the volume of plastics ending up in the environment.

Characteristics of a Good Urban Garden Container

- ✓ Enough to support the size of the plant while it is growing
- ✓ Have enough drainage for water and root pruning

Samples of Innovative Container

Self-Irrigating Bottles



Vertical Barrel Garden

4. TRANSPLANTING THE SEED

After allowing the seeds to grow and getting your containers ready, you are now set to transplant your seedlings.

When is the best time to transplant the seedlings?

- ✓ 21-28 days after sowing – tomato, eggplant, chili pepper
- ✓ 7-14 days after sowing – gourd (ampalaya, upo, squash), cucumber
- ✓ Transplant seedling in the late afternoon or early morning

How to Transplant?

1. Fill the container with soil mix.
2. Choose a good quality seedling from the seedling tray.
3. Make a hole for the seedling and slowly transplant it.
4. Sprinkle with water.

Mulching

Mulching should be done after transplanting. You can put a layer of a material on the soil surface to conserve soil moisture, improve soil fertility, and reduce weed growth. Materials may vary from wood chips, dried sawdust, dried grass clippings, rice hay, or nutshells.

5. WATERING AND FERTILIZATION

Watering Tips

- ✓ Water your garden in the morning and afternoon.
- ✓ Make sure the water penetrates the bottom of the container.
- ✓ Regularly water your container garden.
- ✓ Drain excess water from the container by raising it by 1-2 inches.

Supplying Plant nutrients – How to make your own Organic Fertilizer?

Formulation:

FERTILIZER AFTER TRANSPLANTING FOR PLANTS TO GROW BIG AND STRONG

2:1 KILOS

FPJ FERMENTED PLANT JUICE

FERMENT FOR 7 DAYS

2 KILOS INGREDIENTS:
BANANA TRUNK, CAMOTE TOPS, KANGKONG, PECHAY, OR ALUGBATI

1 KILO INGREDIENTS:
MOLASSES OR BROWN SUGAR

FERTILIZER TO PROMOTE FLOWERING AND FRUITING

1:1 KILOS

FFJ FERMENTED FRUIT JUICE

FERMENT FOR 7 DAYS

1 KILO INGREDIENTS:
RIPE FRUITS: BANANA, MANGO, OR AVOCADO

1 KILO INGREDIENTS:
MOLASSES OR BROWN SUGAR

Process

1. Mix the ingredients for FPJ and FFJ.
2. Ferment in a covered container for seven (7) days at room temperature.
3. After seven (7) days, strain the contents to separate the syrup (liquid) from the residue (solid).
4. Dilute two (2) tbsp of syrup in one (1) liter of water and mix well.
5. Apply it to the plant by drenching on the soil or spraying. Do it once or twice a week.
6. The residue can be composted.

6. NATURAL PEST CONTROL

Pests and diseases are always present in the environment, but you can manage them without harming the environment by growing your own natural pest control.

How to Manage Pests?

- ✓ Maintain good sanitation
- ✓ Practice companion cropping
- ✓ Grow flowers that have pest repelling properties and pollinator attractants (e.g. marigold, zinia, petunia, blue ternate)

Know Your Enemies – Most Common Pest Insects in Gardens

- **Aphid** – sucking insect attacking leaves and stems
- **Caterpillar** – chewing insect that feed on foliage and tender stems
- **Bug** – sucking insect that attach to plant parts and drains plant juice
- **Grasshopper** – feeds on foliage and is found in late summer when fields next to gardens become dry
- **Snail and slug** – chewing pests, they feed on the leaves of the plants and attack at night
- **Mealy bug**

How to make your own organic concoction or biopesticide?

Ingredients:

- 1 bulb garlic
- 1 medium onion
- 5-6 chili peppers
- 1 tablespoon dishwashing liquid
- 1 liter water

Procedure:

1. Chop garlic, onion, and peppers then add to water.
2. Sit for one (1) hour.
3. Add dishwashing liquid.
4. Spray on plants early in the morning or late afternoon.

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