E-LEARNING COURSE

FOOD WASTE PREVENTION

SYLLABUS

INTRODUCTION

According to the U.N. Food and Agriculture Organization, 30% of food is wasted globally across the supply chain, contributing 8% of total global greenhouse gas emissions and generating economic losses of around 990 billion USD per year (FAO, 2015). At the same time, almost half a billion of the world's poorest suffer from malnutrition[1] (WHO, 2020).

In light of the tremendous environmental, social and economic impact of food waste, Swedish EPA and UNITAR have joined forces to develop and deliver a free, self-paced e-learning course on food waste prevention. The course forms part of UNITAR's growing portfolio of trainings that promote resource efficient production and the adoption of sustainable lifestyle.

Reducing food waste and improving resource efficiency in the food supply chain is a priority area in Sweden's National Waste Plan and a key focus of The Swedish Environmental Protection Agency (EPA) Waste Prevention Programme. The Swedish EPA is also responsible for implementing a government commission aimed to reduce food waste together with other Swedish stakeholders. With this goal, the Swedish EPA cooperates with a large number of actors to reduce food waste in Sweden, the European Union, and globally (SEPA, 2017).

OVERALL GOAL AND LEARNING OBJECTIVES

The course aims to raise awareness and build capacities for effective food waste prevention at different stages of the food chain, including processing and manufacturing, retail, restaurants and other food services, and - last but not least – households. After completing the course, learners will be able to:

- Explain the magnitude of the issue and its impact on people, the environment, and the economy.
- Define the role various stakeholders can play in food waste prevention
- Identify ways to measure and account for food waste at various stages of the food chain

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[1] *And this number is rising due to the COVID 19 pandemic.*

- Describe effective measures to prevent food waste throughout the food chain
- Outline measures to minimize food waste, wherever prevention is not possible.

Ultimately, by creating capacities for food waste prevention, the course aims to contribute to achieving Sustainable Development Goal 12.3: Halve food waste by 50% by 2030.

TARGET AUDIENCE

We all participate in the food system, and everyone has a role to play to prevent food waste. The target audience for the course includes:

- **Public officials at national, regional, and local level**, who have the mandate to set, implement, and monitor the frameworks, regulations, and incentives that impact the behavior of households, consumers, producers, employees, and all other stakeholders across the food chain.
- **Business and trade associations**, who engage in discussing, designing, and applying food waste prevention strategies and produce sector specific guidelines/roadmaps.
- **Consumer associations and influencers**, who influence household and consumer behavior.
- **Environmental NGOs and journalists**, who work to influence other stakeholders in society.
- **Managers of food processing and manufacturing companies**.
- **Retailer companies** on the management level.
- **Chefs and owners** of restaurants and food service establishments.
- **Interested consumers**.

The course is especially geared towards learners from emerging economies, such as China, Brazil, South Africa, and India, where consumption habits are quickly changing and setting up food waste prevention systems can have a great impact in the short and long run.

COURSE SCOPE & STRUCTURE

The focus of the course should be food processing and manufacturing, retail and food distribution, restaurants and food services and households[2] .

The following structure of the course is proposed:

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[2] *Food loss generated at post-harvest, storage, transportation stages are equally important but are different in nature and stakeholder groups. Those aspects are covered in so far, they relate to the manufacturer and retail stages of the value chain.*

Module 1: The State of Play

This module provides an overview of the magnitude of the problem, its various sources and impacts, as well as strategies at the national level to tackle it.

After completing Module 1, participants will be able to:

- Discuss food waste from a historic, regional, cultural, and socio-economic perspective
- Define key concepts, such as food loss and waste, avoidable and unavoidable waste
- Identify the economic, social, and environmental challenges and opportunities related to food waste
- Discuss commitments by countries at national and international level to tackle food waste.

Module 2: Food Waste in Manufacturing

Module 2 looks at why and where is food wasted during the processing stages and what can food manufacturers do to prevent this.

After completing Module 2, participants will be able to:

- Identify the causes of food waste during manufacturing processes
- Discuss challenges and opportunities around food processing, packaging, and labelling
- Outline approaches for measuring and reducing food waste at manufacturing sites
- Identify solutions that food manufacturers can apply to reduce/prevent food waste

Module 3: Food Waste in Retail

Module 3 explores food waste retailers, i.e. shops, supermarkets and markets, and what can be done to measure and prevent it.

After completing Module 3, participants will be able to:

- Discuss the connecting role retailers play within the food chain
- Identify the various ways in which retailers contribute to food waste
- Outline approaches for measuring and reducing food waste at retail facilities
- Identify ways for retailers to collaborate with supplies and consumers to prevent food waste

Module 4: Food Waste in the Service Industry

Module 4 focuses on restaurants and other food services: why and how the generate food waste and what can be done to prevent and reduce it.

After completing Module 4, participants will be able to:

- Discuss the various types of food services and the waste they generate
- Identify methods to measure and analyses food waste in food services
- Identify measures to reduce kitchen waste, serving waste, and plate waste
- Discuss how the service industry can nudge consumers to reduce food waste.

Module 5: Food Waste in Households

The last module tackles food waste at the household levels and what we - the consumers, as well as other food system stakeholders, can do to minimize and prevent it.

After completing Module 5, participants will be able to:

- Explain how, why, and what type of food waste is generated by households
- Identify methods to measure food waste generated at home
- Identify measures to motivate consumers to change behaviour and reduce food waste
- Discuss the role of public policies to stimulate food waste reduction in households

Relevant tools and techniques are demonstrated in each module, including approaches to effective measurement, and monitoring of food waste, assessing, and prioritizing effective solutions. Recommendations for public policies, measures and incentives that can create the enabling conditions for producers and consumers are interwoven into the food waste journey. Emphasis is placed on the interconnectedness of the various stages of the food chain and how the actiony by stakeholders at one stage can impact the food waste generation at another.

COURSE METHODOLOGY

The course is self-paced and takes a total of 4-5 hours to complete.

As adults learn in a variety of ways, course elements are varied and interactive. The assessment of the preferences of the target audience has shown that the majority preferred to learn through videos, which is the main means of instruction in the course. The course features man examples, case studies and real-life stories that demonstrate the application of food waste solution and their results from both developing and developed countries.

Each of the Modules has similar flow, as shown in the table.

SECTION		PURPOSE	TOOL
1	About this Module	Introduce learners to the topic and main issues in the module	Food Journey Map Learning objectives
2	From theory...	Convey main concepts and issues	Video lectures (core materials)
		Develop broader understanding and appreciation	Additional reading materials (additional)
3	...to practice	Give practical advice, apprise of practical tools and methods	Interactive textbook (core materials)
		Exemplify best practices	Map of examples featuring national expert videos and best practices (core) Links to case studies (additional)
		Test knowledge and engage with peers	Module quiz (core) Discussion boards, polls (additional)

MODALITY:
Self-paced

TARGET AUDIENCE:
Public officials, food manufacturers & retailers, civil society, consumers

COST:
Free of charge

TIME:
4-5 hours, 45 - 50 min per learning block

SUBJECT:
Circularity, consumer behaviour, sustainable production and consumption, SDGs, Climate change

LANGUAGE:
English and Portugese

PLATFORM:
UN CC: E-Learn

CERTIFICATION:
Certificate of completion

COGNITIVE LEVEL:
Awareness & Knowledge creation, basic skill built

DIFFICULTY LEVEL:
Introductory, intermediary

ASSESSMENT:
Completion of all course activities 1 final quiz (70% min) and Scenario Pre & post intent-to-use survey

LEVEL OF INTERACTION:
High (videos, Scenarios, quizzes, Polls, discussion boards, exercises)

COMPLETION AND CERTIFICATION

The wrap-up section at the end of the course features a final quiz and an interactive problem-solving scenario. A certificate of completion is awarded to learners who complete:

- Interactive problem-solving scenarios
- Final quiz with 70% or higher score

The certificate will be available upon completion of the course. Once conditions are met, the certificate will become available to download automatically.

COURSE EVALUATION

At the start of the course a short survey measures participants motivation and "intent-to-use" course knowledge.

At the end of the course learners can complete the course evaluation survey which measures their satisfaction with the course and intent to use knowledge and skills acquires. The "intent to use" at the beginning and at the end of the course can be compared to assess changes in motivation and abilities.

An impact survey 1 year after the course completion can be carried out to evaluate impact from the course.

TECHNICAL REQUIREMENTS

The course is available for online completion only. UNITAR recommends the following as minimum hardware and software to take this e-learning course:

- Platform: any modern version of Windows (7/8/10) or Mac OSX (10.9 Mavericks (2013) onwards).
- Browser: any modern version of browsers such as Google Chrome, Mozilla Firefox, or Internet Explorer. Java, cookies, and pop-ups must be enabled.