



# SWAP

Sustainable solid WASTE management and Policies

## D3.2: Training material on Sustainable Solid Waste Management for TVET

Project Acronym	SWAP
Work Package	Work Package 3
Deliverable	D3.2: Training material on Sustainable Solid Waste Management for TVET
Deliverable Lead	CMU
Type	Report
Dissemination Level	Confidential
Contractual delivery date	M15 (March 2022)
Actual submission date	M26 (14 Feb 2023)
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## Versions

Version	Date	Main Author	Summary of updates
1	14 Feb 2023	PATIROOP PHOLCHAN	FILL IN IF NEEDED

## ABSTRACT

Overviews and descriptions of the training material on sustainable solid waste management for TVET are explained in this report. Contents of TVET materials are constructed in order to fulfil the expectations and gaps of knowledges obtained in WP 1. The development of TVET materials focuses mainly on the practical side so that the main purpose of TVET education is served.

## KEYWORDS

TVET; Training Materials, Solid Waste Management

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## ACKNOWLEDGEMENT

This document is a deliverable of the SWAP project. This project is co-funded by the Erasmus+ Programme of the European Union under the call for proposals EAC/A02/2019 and carries the project n° 618723-EPP-1-2020-1-DE-EPPKA2-CBHE-JP.

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## 1 Overview

According to the results and information gained from WP1, the required TVET materials have been developed by the European partners, i.e. EUROTRAINING, TUHH, POLIBA and IFOA. Contents of materials have been constructed in order to be in line with the gaps and expectations of the pertinent stakeholders, especially the waste management companies and industries in Cambodia, Thailand and Vietnam. The developed materials for each topic include the slide presentation giving the main idea/ steps/ guidelines of the proper measure for solid waste management and suggestions of hands-on activities or case studies showing examples gathering from different countries. In addition, descriptions of each topic are also provided so that trainers can systematically understand the detailed idea of the slide presentation. All these materials have been prepared with a main focus to provide more of the practical approach and exclusively deal with developing and enhancing the technical skills of the trainers.

## 2 Topics of TVET materials and descriptions

In total, the developed TVET materials comprise 8 topics as shown in Table 2.1. All materials can be viewed and downloaded from the project's cloud; <https://cloud.tuhh.de/index.php/s/cCCTqBajGLAJbCx> in Folder WP3.

Table 2.1 Topics of the developed TVET materials

Topics	Developers	Descriptions
1. Health and Safety at the Workplace	EUROTRAINING	Health and safety risks are explained along with the hazard of working in all steps of solid waste management. Training to avoid any accidents and hazards by utilizing proper working measures and protective equipment are illustrated. Activities and case studies are also provided.
2. Solid Waste Characterization and Sorting	TUHH	General knowledges of solid waste compositions are provided. Examples of solid waste collection and sorting in Germany are then explained along with the sorting results. Activities and possible site visits are also recommended.
3. Recycling E-Waste	TUHH	Overall introduction of WEEE, e.g. description, generation rate and possible recyclable components are explained. Step by step process of WEEE recycling is illustrated followed by the flow diagram of WEEE treatment/decontamination/dismantling. The hands-on practice for some WEEEs, such as screen monitor, computer are proposed along with the safety measure for manual dismantling.
4. Bio-waste treatment	TUHH	Principles of organic wastes and options for utilization are explained. Details, both in theory and practice, of organic waste composting and anaerobic digestion are elucidated. Also, steps of practical task for composting are recommended.
5. Integrated solid waste management	POLIBA	Types of waste and Municipal Solid Waste (MSW) composition are explained. The European Municipal Solid Waste (MSW) Management Strategy is, then used as the example. The approach of MSW Management Systems and case studies of those used in the European countries are provided.
6. Introduction to waste management and circular economy	POLIBA	Explanations of Linear and Circular Economy (CE) models are made and compared along with the progress of CE in EU. Commodity analysis is, then illustrated using the case in Italy as an example.
7. Employment and Entrepreneurship Opportunity in The Solid Waste Management Sector	IFOA	Opportunities in waste management are thoroughly explained using various case studies, especially those conducted in Africa. Detailed explanations of the contents are also provided in the separated file.

8. Stakeholder Engagement	IFOA	Meanings of stakeholders and stakeholder analysis/identification/characterization are explained. The proper way to engage stakeholders are described along with some case studies.
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