



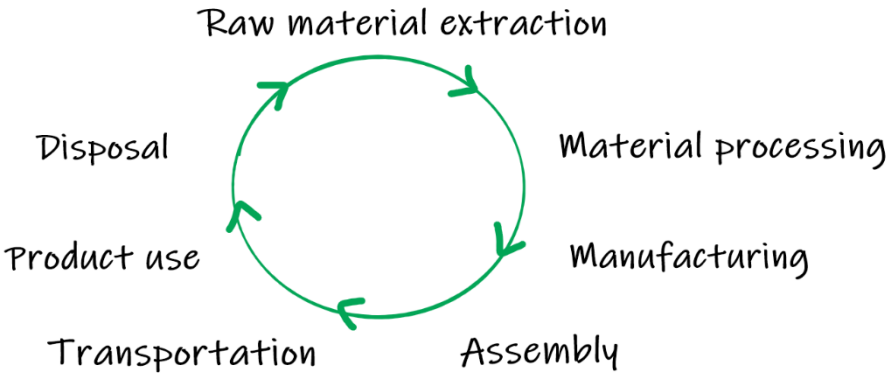
# **Train2Sustain – developing capacity to teach sustainability in VET**

Learning Activity nr. 09

## **Lifecycle analysis**

Projektnummer: 2020-1-FI01-KA202-066632

<b>ACTIVITY NAME</b>	A09 <b>Lifecycle analysis</b>
<b>OBJECTIVES</b>	<ul style="list-style-type: none"> <li>▪ Define life cycle for a product (or service).</li> <li>▪ Understand the various phases a product (or service) goes through and how much they consume raw materials, energy or water.</li> <li>▪ Understand the elements of circular economy and how the chosen product (or service) can be reused, recycled or repaired.</li> </ul>
<b>DESCRIPTION</b>	<ol style="list-style-type: none"> <li><b>1. Explain the activity to the students (briefing)</b> <ul style="list-style-type: none"> <li>▪ Divide into groups of 2-4 students (or work individually).</li> <li>▪ Choose a product (or service) from your own field and find out the lifecycle of the product.</li> <li>▪ Try to think if it is following the circular economy and if it's not, how can this be changed so that the lifecycle gets more circular.</li> </ul> </li> <li><b>2. Run the activity</b> <ul style="list-style-type: none"> <li>▪ Project can be done in a group or individually.</li> <li>▪ Students can make a presentation (with mind map, PowerPoint, Prezi...) about their project.</li> <li>▪ When the projects are ready students can keep short presentations to each other.</li> </ul> </li> <li><b>3. Evaluation (debriefing)</b> <ul style="list-style-type: none"> <li>▪ What are the main raw materials used to make the product?</li> <li>▪ How and where are raw materials acquired and what are their environmental impacts?</li> <li>▪ Are the raw materials rapidly renewable?</li> <li>▪ Does the product have to be transported long distances or are there several transport steps in the production chain?</li> <li>▪ Is the product imported by car, ship, plane or all of them?</li> <li>▪ Assess the environmental impact of transport processes.</li> <li>▪ How long does the product last? Could it be extended?</li> <li>▪ What happens to the product after use?</li> <li>▪ Can it be recycled?</li> <li>▪ How is the product disposed of?</li> <li>▪ What are the environmental impacts of the disposal process?</li> <li>▪ Is the products lifecycle following the circular economy?</li> <li>▪ Could the lifecycle be changed to follow more the circular economy?</li> <li>▪ There are lots of different answers, so it's impossible to know are they correct.</li> <li>▪ Evaluation can be done by peer reviewing among students. Teacher and students can assess together that are the answers reasonable.</li> </ul> </li> </ol>
<b>TIME TO PLAY</b>	<b>Total time:</b> 90-120 min. -----

	<p><b>Preparation time:</b> 5 min  <b>Briefing time:</b> 5 min  <b>Activity time:</b> 50 min  <b>Evaluation time:</b> 30-60 min depending on how many students are in the group.</p>
<b>INDIVIDUAL or GROUP</b>	<p>Done in a group or individually</p> <p>Number of groups: as many as needed          Number of students per group: 2-4</p> <p>Roles: Teacher gives the questions and students do all the work.</p>
<b>MATERIAL FOR TEACHER</b>	<ul style="list-style-type: none"> <li>Video for showing what the lifecycle analysis is <a href="#">Product lifecycle assessment (CC)</a></li> </ul>
<b>MATERIAL FOR STUDENT</b>	<ul style="list-style-type: none"> <li>Computers or other smart devices.</li> <li>Picture if they are doing a mind map:</li> </ul> <hr/> <p style="text-align: center;"><i>Name of the product</i></p>  <pre> graph TD     A[Raw material extraction] --&gt; B[Material processing]     B --&gt; C[Manufacturing]     C --&gt; D[Assembly]     D --&gt; E[Transportation]     E --&gt; F[Disposal]     F --&gt; A     </pre>
<b>LAY OUT</b>	n. a.