Activity 4.2

Title: Developing a Causal Loop Diagram

Learning outcome: to gain an understanding and experience on how to build Causal Loop Diagrams and apply it in the area of circular economy

Applicable: it can be used in the second lecture of the Systems Thinking module

Green skills: discussion, collaborative planning, co-creation, systems thinking

Instructions: Ask the students to develop the CLD of the following description

Raw materials/resources are being excavated/used and inserted in a process of *processing the resources.* Following that, the *complete products/services* are inserted in the market. However, the more the *Raw materials/resources* are being excavated the more *processing of the resources* occurs and the more *completed products/services* are developed. But, the act of *processing the resources* more and more means that the *Raw materials/resources* themselves are steadily emptying since we assume that they cannot be re-generated. Moreover, there is a *demand for products/services* that acts in a positive way on the *completed products/services.*

The *completed products/services* become either *recycled products/services after lifetime* or *non-recyclable waste.* As it was implied in the previous sentence, the products have a *lifetime of product/service,* which affects negatively both types of waste (recyclable and non-recyclable). Furthermore, it is assumed that the value of the *lifetime* also affects the *demand for products/services* since the larger the lifetime, the smaller the demand for that particular products.

Finally, the *recycled products/services after lifetime,* can enter in the *processing the resources* (the more the better) and used instead of the *raw materials/resources.* This process however, depends on the *recycling level,* which acts in a positive way also in the *processing the resources.*

Correct CLD