SustainComp

Teachers guide for learning activity 1

Module: Sustainable Diet 2,5 ECTS

Title	Environmental impact of food groups
Relevant SustainComp modules	Module
Pre-requisites	None
Introduction	26% of global greenhouse gas emission comes from the food chain in addition to claiming half of the world's habitual land and 70% of global freshwater usage. Food, therefore, lies at the heart of trying to tackle climate change, reducing water stress, pollution, restoring lands back to forests or grasslands, and protecting the world's wildlife (Hannah Ritchie and Max Roser (2020) - "Environmental Impacts of Food Production". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/environmental-impacts-of-food' [Online Resource]
Learning goals	After this learning activity, the students will have basic knowledge on the environmental impact of different food groups. They will also gain knowledge on how to assess the environmental impact of food and where in the food chain the emissions are the greatest.
Pedagogical principle for the activity	Problem-solving Discussion in groups Critical thinking Communication skills Collaboration
Digital facilitation	Computer and internet COIL (optional)
Subject specific terms	Sustainable diets= "D*iets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable, nutritionally adequate, safe and healthy while optimizing natural and human resources".* (United Nations. *Shifting to sustainable diets*. Available from: https://www.un.org/en/academic-impact/shifting-sustainable-diets)
Use of time (total)	285 minutes (5 hours approx.)

Preparation and equipment	Printed pictures of 6-8 different foods preferably representing different parts of the food chain. Here are some options to choose from: Beef (beef herd) Fish (farmed) Root vegetables Rice Nuts Coffee See appendix for example pictures.		
Implementation	Schedule	Time	How
	Part 1a Introduction and group work	45 min	Teacher introduces on the activity and the learning goals. The students are then divided into groups of three to five and are set to arrange the pictures (see appendix) from which they believe is the most to least sustainable. The students must think of, and prepare, arguments for their specific order. After the students have agreed on an order, the teacher goes through every picture and asks the class which order they have placed the picture and why. It is important that the students present their arguments for the order they have chosen.
	Part 1b Working in *Our World in Data* (as a group)	60 min	After discussing all pictures and their placement, the students work in *Our World in Data (https://ourworldindata.org/environmental-impacts-of-food#citation)* and explore data in the Environmental Impacts of Food chart. Choose Commodity. Here, the students insert and explore the different food products according to usage of fresh water and land, and greenhouse gas emission (carbon footprint). Each group visualizes the differences between the food products in excel or similar. Based on these findings, the students can go back to their initial arrangement and see if they would change their order. It is also relevant to discuss local versus global conditions relating to food production and sustainability.
	Part 1c Lecture	45 min	Presentations of the findings from part 1b followed by a lecture on sustainable diets relating to definitions, environmental impact of food groups.
	Part 1d Discussions and wrap up	45 min	Finally, based on their findings related to environmental impact of the different food groups, the students evaluate the level of

			sustainability of their own national dietary guidelines, including social, economic and environmental aspects relating to sustainable development. The teacher discusses with the class what they have learned and some key take home messages. If students work in COIL, classes can work parallel on the same activity and have shared discussions. Students can compare their national dietary guidelines across countries, considering their level of sustainability.
	Recommended	45 min	Lecture or student work on sustainable development, the impact of diets, food and food production relating to sustainable development, and discuss different actions one can take to lower once own dietary environmental impact.
Evaluation of the activity	Formative		Ongoing discussions with the students
	Summative		None
Readings/references	**Semantic:** 1. UN Sustainable Development goals. Available from: https://sdgs.un.org/goals 2. Ritchie, H. and Roser M. (2020) - "Environmental Impacts of Food Production". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/environmental-impacts-of-food' [Online Resource] 3. Ranganathan, J., Vennard, D., Waite, R., Searchinger, T., Dumas, P., & Lipinski, B. (2016). Shifting diets: Toward a sustainable food future. In *Global Food Policy Report* (pp. 67–79). INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE (IFPRI). https://www.ifpri.org/publication/shifting-diets-toward-sustainable-food-future (12 pp) 4. EAT Lancet report summary report: https://eatforum.org/content/uploads/2019/07/EAT-Lancet_Commission_Summary_Report.pdf (32 pp)		