

EXERCISE 4 - ANALYSIS OF ENVIRONMENTAL PROBLEMS



Co-funded by
the European Union



GREEN
INDUSTRY
FOUNDATION

BAB
HUSKY



Instructions for the educator

You are given 3 methods to identify the problems needed for this task. First present them to the group/ You can use the ppt presentation or the content below.

SWOT method (Strengths, Weaknesses, Opportunities, Threats)

Explain that this method can be used to analyse environmental problems, identifying the strengths and weaknesses as well as the opportunities and threats associated with a problem.

LCA – Life Cycle Assessment

Discuss how LCA is used to assess the environmental impact of a product or process at each stage of its life cycle, from raw material extraction to disposal.

Environmental Risk Assessment

Outline that an environmental risk assessment identifies potential risks to the environment from human activities and how these risks can be minimised.

Case study

Choose one environmental problem that is currently relevant (e.g. plastic pollution, climate change, deforestation, air pollution) and briefly introduce it to the participants. Discuss what decisions have been made in the past in relation to this problem and what the consequences have been.

Discussion

- Ask participants for their thoughts on the case presented.
- Encourage them to ask questions and share their observations on the effectiveness of the measures taken.

Group work – analysis of a selected environmental problem

- Divide participants into groups of 4-5.
- Each group chooses or is given a different environmental problem to analyse (it could be water pollution, waste management, soil degradation, biodiversity loss, etc.).

Group tasks

- ➔ **Carrying out a SWOT analysis**
Identify the strengths, weaknesses, opportunities and threats associated with the chosen problem.
- ➔ **Life Cycle Assessment (LCA)**
Evaluate the environmental impact of the chosen issue at different stages of its life cycle.
- ➔ **Environmental risk assessment**
Analyse potential environmental risks and propose actions that could minimise them.

- Each group should prepare a short report with the results of the analysis and recommendations for action to mitigate or solve the problem
- Each group has 30 minutes to analyse and 5 minutes to present the results of their analysis
- After each group's presentation, open a discussion by asking questions and asking other groups for comments and suggestions.
- During the discussion, highlight the key elements presented by the groups, drawing attention to the diversity of approaches and perspectives.
- Summarise the main conclusions of the problem analysis, emphasising the importance of critical and analytical thinking in environmental decision-making.

Materials needed

- Flipcharts or whiteboards for recording group results
- Examples of environmental problems analysed



Scenarios of environmental problems analysed

SCENARIO I

Plastic Pollution in Oceans

Plastic waste in the oceans poses a serious threat to the marine ecosystem. Microplastics are consumed by marine organisms, leading to poisoning of the food chain, and macroplastics threaten larger animals such as turtles and seabirds.

Tasks for the group: SWOT analysis

Strengths

increased public awareness of the problem, growing recycling initiatives

Weaknesses

difficulties in collecting and recycling plastics from the oceans, high cost of alternative materials

Opportunities

technological innovations in biodegradable materials, new regulations limiting the use of single-use plastics

Threats

increasing amounts of plastic waste, lack of global cooperation in the fight against pollution

Environmental risk assessment

identifying risks to marine species and humans and assessing impacts on public health through contamination of the food chain

LCA Analysis of the life cycle of plastics

from production (from petroleum raw materials) to their degradation in the marine environment

Scenarios of environmental problems analysed

SCENARIO II

Climate change and biodiversity loss

Climate change is causing increasingly rapid changes in ecosystems, leading to species extinction and loss of biodiversity. Changes in temperature, rising sea levels and changes in rainfall are affecting the natural habitats of plants and animals.

Tasks for the group: SWOT analysis

Strengths

global climate protection initiatives, development of renewable energy

Weaknesses

lack of a coherent biodiversity conservation policy, low commitment from some countries

Opportunities

development of new technologies that can help protect the environment, international cooperation to protect biodiversity

Threats

accelerated rate of species extinction, lack of attention to local ecosystems in climate policy

Environmental risk assessment

Identifying threats to key species and ecosystems and assessing the implications of biodiversity loss for humanity

LCA Analysis of the life cycle of plastics

analysing the impact of human activities on biodiversity in different phases of the life cycle - from deforestation to urbanisation

Scenarios of environmental problems analysed

SCENARIO III

Air Pollution in Cities

High levels of air pollution in large cities lead to serious health problems among residents, such as respiratory diseases, heart disease and reduced life expectancy. The main sources are emissions from transport, industry and home heating.

Tasks for the group: SWOT analysis

Strengths

development of filtration technology, increase in popularity of electric vehicles

Weaknesses

high cost of infrastructure upgrades, public resistance to vehicle traffic restrictions

Opportunities

increased investment in public transport, development of green urban spaces

Threats

deterioration of quality of life in cities, increase in air pollution related diseases

Environmental risk assessment

assessing the health effects on the population and the impact on the urban environment, including vegetation and animals

LCA Analysis of the life cycle of plastics

Life cycle analysis of emissions from different sources from energy production to fuel combustion in transport

Scenarios of environmental problems analysed

SCENARIO IV

Soil Degradation and Intensive Farming

Intensive agriculture leads to soil degradation, depletion of mineral resources, reduction of biodiversity and contamination of groundwater by fertilisers and pesticides. The result is reduced crop yields and increasing instability of food systems.

Tasks for the group: SWOT analysis

Strengths

increase in agricultural productivity, development of precision farming technology

Weaknesses

soil degradation, chemical dependency, depletion of water resources

Opportunities

development of sustainable agriculture, dissemination of agro-ecological practices

Threats

further destruction of soil, deterioration of food quality, threat to food security

Environmental risk assessment

assessing the long-term effects of soil degradation and chemical pollution on human health and ecosystem stability

LCA Analysis of the life cycle of plastics

Analysis of the environmental impact of intensive agriculture in different phases of the life cycle, from land preparation to harvesting and processing