



**LAND MANAGEMENT, ENVIRONMENT & SOLID-WASTE:
INSIDE EDUCATION AND BUSINESS IN CENTRAL ASIA
ERASMUS-EDU-2023-CBHE Project Number: 101129032**

MICRO-CREDENTIAL

**CIRCULAR ECONOMY FOR LAND AND WASTE
MANAGEMENT**

6.- Recycling and Material Recovery

Activity 2

MCQ quiz: recycling limits and trade-offs



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1. What is one of the main environmental advantages of recycling?

- A. It always eliminates all environmental impacts
- B. It can reduce demand for virgin raw materials and landfill disposal
- C. It guarantees zero energy consumption
- D. It removes the need for waste collection

2. Which statement best describes recycling?

- A. Recycling is always impact-free
- B. Recycling may generate environmental benefits but also consume energy, water and land
- C. Recycling removes all need for final disposal
- D. Recycling is only relevant for metals

3. What is a recycling trade-off?

- A. A situation where one environmental benefit may be accompanied by another environmental cost
- B. A complete elimination of all waste
- C. A legal ban on material recovery
- D. A method for measuring landfill depth

4. Why can source separation improve recycling?

- A. It reduces contamination and improves material quality
- B. It increases mixing of incompatible materials
- C. It makes all materials biodegradable
- D. It eliminates transportation needs

5. What happens when recyclable materials are heavily contaminated?

- A. Recycling may become technically difficult or economically unattractive
- B. Material quality always improves
- C. All contamination disappears during collection

D. No additional treatment is required

6. Which material generally provides major environmental benefits when recycled because primary extraction is highly energy-intensive?

- A. Aluminium
- B. Mixed food waste containing glass
- C. Contaminated soil
- D. Untreated hazardous waste

7. What is downcycling?

- A. Recycling a material into a product of lower quality or value
- B. Complete destruction of all waste
- C. Reuse of a product without processing
- D. Conversion of waste directly into electricity only

8. Why can paper fibres only be recycled a limited number of times?

- A. Fibres become shorter and weaker during repeated processing
- B. Paper becomes metal after several cycles
- C. Ink always increases fibre strength
- D. Water is never used in paper recycling

9. Which factor can reduce the environmental benefit of recycling?

- A. Very long transport distances
- B. Efficient source separation
- C. High-quality recycled material
- D. Reduced use of virgin resources

10. Why is mixed plastic waste difficult to recycle?

- A. Different polymers, additives and contamination can reduce compatibility and quality
- B. All plastics have identical chemical composition
- C. Plastic recycling never requires sorting
- D. Mixed plastic automatically becomes high-quality raw material

11. Which environmental issue can arise during plastic recycling?

- A. Wastewater generation and possible microplastic release
- B. Complete elimination of all residues
- C. No energy use
- D. Permanent increase in virgin fossil fuel extraction

12. What is a recycling residue?

- A. A material remaining after the recycling process that may still require treatment or disposal
- B. A virgin raw material
- C. A fully recyclable product only
- D. A type of renewable energy source

13. Why can glass recycling require significant transport energy?

- A. Glass is relatively heavy
- B. Glass has no mass
- C. Glass is always recycled locally
- D. Glass cannot be collected separately

14. What is one possible environmental cost of metal recycling?

- A. Air emissions and generation of slag or dust during melting
- B. Increased mining of virgin ores
- C. Elimination of all energy use
- D. Zero infrastructure requirements

15. Why is compost quality important?

- A. Poor-quality compost may contain plastics, metals or other contaminants
- B. Compost cannot affect soil quality
- C. All organic waste is automatically safe for agriculture
- D. Compost quality is irrelevant for land application

16. What is a major limitation of recycling construction and demolition waste?

- A. Hazardous materials such as asbestos may require separate management
- B. All construction waste is clean
- C. Crushing generates no dust
- D. Large treatment areas are never needed

17. Which statement about recycling facilities and land use is correct?

- A. Recycling facilities require no land
- B. Recycling can reduce landfill land demand but still requires land for collection, sorting and processing
- C. Recycling always occupies more land than mining
- D. Land use is irrelevant to recycling assessment

18. What is burden shifting?

- A. Reducing one environmental impact while increasing another elsewhere
- B. Eliminating all environmental impacts
- C. Transporting waste without environmental consequences
- D. Replacing all environmental assessment with economic analysis

19. Which example best illustrates environmental burden shifting?

- A. Reducing landfill waste but creating heavily polluted wastewater during recycling
- B. Improving sorting efficiency

- C. Reducing virgin raw-material extraction
- D. Recovering aluminium with lower energy demand than primary production

20. Why is market demand important for recycling?

- A. Recycled materials need stable outlets and buyers to remain economically viable
- B. Recycled materials do not need users
- C. Markets never affect circular economy systems
- D. All recycled materials have identical value

21. What is contamination threshold in recycling?

- A. The maximum level of impurities that can be accepted without making recycling technically or economically unviable
- B. The minimum amount of virgin material required in every product
- C. The point where all waste becomes hazardous
- D. A measure of landfill height

22. Why can recycling rates alone be misleading?

- A. A high recycling rate does not automatically prove low environmental impact
- B. High recycling rates always mean zero emissions
- C. Recycling rates measure soil quality
- D. Recycling rates directly measure biodiversity

23. Which factor should be considered when comparing recycling with virgin-material production?

- A. Energy, water, land use, emissions, transport and residual waste
- B. Only the colour of the product
- C. Only the number of workers
- D. Only collection cost

24. What is closed-loop recycling?

- A. Recycling a material back into the same or similar product with comparable function
- B. Sending waste directly to landfill
- C. Reusing wastewater without quality control
- D. Converting all waste to energy

25. Which example best represents open-loop recycling?

- A. Plastic bottle material converted into lower-grade construction products
- B. Aluminium can recycled into another aluminium can
- C. Glass bottle reused without processing
- D. Organic waste sent to landfill

26. Why may chemical recycling of plastics be controversial?

- A. It can require high energy input and may produce additional emissions or residues
- B. It requires no infrastructure
- C. It always has lower environmental impacts than mechanical recycling
- D. It eliminates the need for sorting

27. Why should life-cycle thinking be used when assessing recycling?

- A. It considers impacts across collection, transport, processing, use and final management
- B. It focuses only on the recycling plant
- C. It ignores upstream extraction
- D. It excludes residual waste

28. Which situation may make recycling less environmentally attractive?

- A. Very low material quality combined with long transport distances and high processing energy
- B. High-quality source-separated material processed locally
- C. Avoided virgin raw-material extraction

D. Reduced landfill disposal

29. What is the main purpose of eco-design in recycling systems?

- A. To make products easier to repair, reuse, disassemble and recycle
- B. To increase unnecessary material complexity
- C. To prevent all reuse
- D. To maximise hazardous additives

30. Why can multi-layer packaging be difficult to recycle?

- A. Different materials are strongly bonded and difficult to separate
- B. It contains only one pure material
- C. It requires no processing
- D. It always has high recycled content

31. Which statement about recycling and the circular economy is most accurate?

- A. Recycling is important, but prevention, reuse and product design are also essential
- B. Recycling alone solves all circular economy challenges
- C. Waste prevention is less important than disposal
- D. Reuse has no environmental value

32. Why is recycling usually lower in the waste hierarchy than prevention and reuse?

- A. Recycling still requires processing, energy and infrastructure
- B. Recycling generates no environmental impact
- C. Reuse always requires more raw materials
- D. Prevention increases waste generation

33. What is one main risk of sending contaminated organic waste to composting?

- A. Contaminants may be transferred to compost and eventually to soil

- B. All contaminants are automatically destroyed
- C. Compost cannot interact with land
- D. The process always produces pure fertiliser

34. Why can recycling wastewater be both beneficial and risky?

- A. It conserves water but may spread salts, pathogens or chemicals if quality is not controlled
- B. Recycled water is always identical to drinking water
- C. Wastewater reuse never affects soil
- D. It eliminates all need for monitoring

35. What is one reason recycling systems may fail economically?

- A. Collection and processing costs exceed the value of recovered materials
- B. Recycled materials always have unlimited demand
- C. Sorting is never necessary
- D. Market prices are irrelevant

36. Why should local conditions be considered when selecting recycling technologies?

- A. Waste composition, infrastructure, markets, energy supply and transport distances differ between regions
- B. All regions generate identical waste
- C. Recycling technology performance is independent of context
- D. Land availability never matters

37. What is the best response when recycling generates a contaminated residue?

- A. The residue should be safely treated, recovered where possible, or disposed of appropriately
- B. It should always be spread on land
- C. It should be ignored
- D. It automatically becomes a recyclable product

38. What is one important indicator of recycling quality?

- A. The percentage of recovered material that can actually replace virgin material
- B. The number of collection trucks only
- C. The total weight of contaminated rejects
- D. The number of landfill workers

39. Which material recovery system is generally more efficient?

- A. One based on clean source-separated streams
- B. One based entirely on heavily mixed contaminated waste
- C. One without any quality control
- D. One that sends all rejects to uncontrolled disposal

40. Which statement best summarises the main lesson of this quiz?

- A. Recycling should be maximised regardless of environmental cost
- B. Recycling should be assessed using technical feasibility, material quality, environmental impacts, residuals and local conditions
- C. Recycling is always environmentally superior in every circumstance
- D. Recycling eliminates the need for prevention and reuse