

Test your (lack of) knowledge of environmental indicators - SOLUTIONS

Instructions

Circle one from the multiple choices in each question. Positive answer gets a 1 point, negative answer gets -1 point, neutral answers get 0 points. This means that you should not answer the question if you are NOT sure. If you collect > **15** points, your background knowledge is SATISFACTORY. Normally, everybody fails; otherwise it would not make sense to have you in this course.

Participant

Name of participant:	
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Participant:	
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Questions

1. **“A single measurement result may be used as an indicator”.** Circle the correct statement:

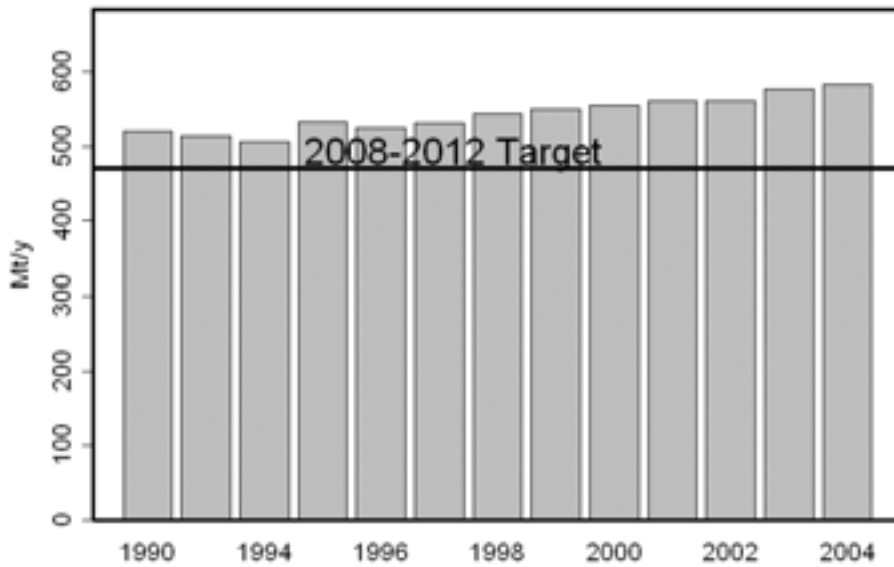
- a) The above statement is true if the single measurement can be related to an environmental standard for what is good or bad.
- b) The above statement is false because an indicator is always an aggregation of single measures.
- c) The above statement is false, because a single measure can be associated to a unit of measurement while an indicator is a scalar value
- d) The above statement is false because a single value would result in a low quality indicator

2. **What is the difference between statistics and indicators? Choose the right answer:**

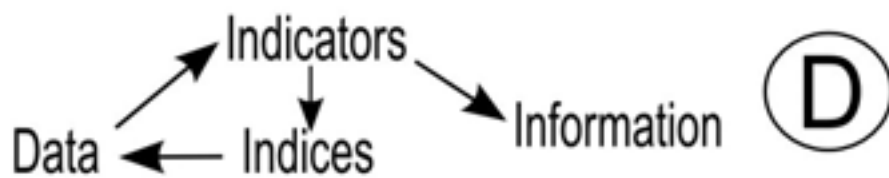
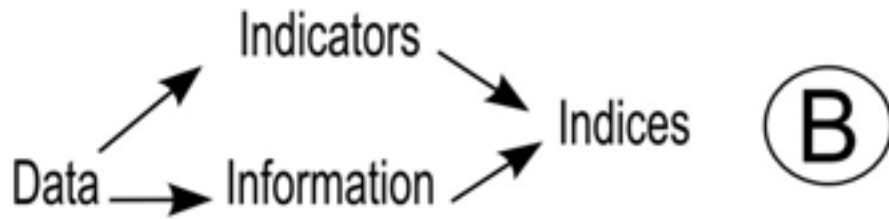
- a) Indicators have a unit of measurement, while a statistics is scalar measure.
- b) Statistics and indicators are different terms for the same concept.
- c) An indicator is a statistics if associated to a baseline, that is, a reference value.
- d) A statistics is an indicator when its value provides a basis for assessment on conditions and trends of a particular environmental issue.
- e) Indicators provide more condensed information than statistics.
- f) An indicator is a statistics standardized.

3. **The figure below shows the Italian Greenhouse Gas Emissions (1990 –2004) compared with the Kyoto target for 2008 –2012. Select the correct assessment:**

- a) Positive trend, the 1990 – 2004 period did not see a significant increase in greenhouse gas emissions. Emissions are not far from the 2008 – 2012 target.
- b) Neutral (no relevant development), the 1990 – 2004 saw a non-significant increase in greenhouse gas emissions
- c) Unfavourable trend, the 1990 – 2004 period saw an increase in greenhouse gas emissions. Emissions are getting far from the 2008 –2012 target.
- d) No assessment is possible, because the data are not sufficient to describe the future trend of emissions.



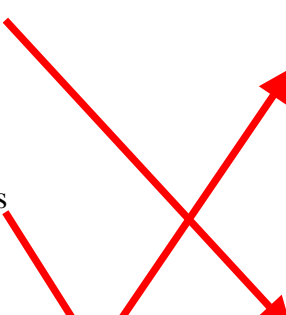
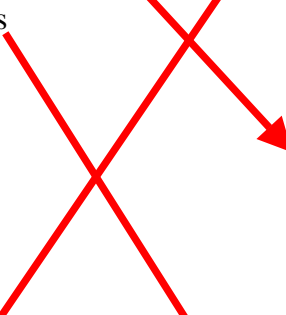

4. Data, Indicators, Indices and Information are usually represented as elements of a hierarchical structure, known as information pyramid. The diagrams below have the same meaning of such pyramid. Select the correct one:
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5. The DPSIR framework is a conceptual model based on the concept of:

- ~~a) Causality~~
- b) Mutual dependency
- c) Headline indicators
- d) Decoupling
- e) Sustainable development

6. Join each kind of indicator to its description

a) Descriptive Indicators		They relate environmental pressures to human activities. These indicators provide insight in the efficiency of products and processes.
b) Performance Indicators		They describe the actual situation with regard to the main environmental issues, such as climate change, desertification, toxic contamination and wastes in relation to geographical levels at which these issues manifest themselves.
c) Efficiency Indicators		They compare actual conditions with a specific set of reference conditions. They measure the distance between the environmental situation and the desired situation (target) These indicators are relevant if specific groups or institutions may be held accountable for changes in environmental pressures or states

7. For each indicator define if it is Descriptive, Performance or Efficiency

	Indicators	Descriptive	Performan	Efficiency
1	Greenhouse gas emissions (CO ₂ , CH ₄ , N ₂ O, HFC _s , PFC _s , SF ₆)		X	
2	Utilized Agricultural Area	X		
3	Farms implementing ecologically oriented			X
4	Eco-efficiency in agriculture			X
5	Vehicle fleet	X		

8. A successful framework for sustainable development must reflect the linkages between all dimensions, themes, and sub-themes. What are the four key dimensions of sustainable development indicators?

- ~~a) Social~~
- b) Transportation
- ~~c) Environmental~~
- ~~d) Economic~~
- e) Instruction
- f) Biodiversity
- ~~g) Institutional~~
- h) Sanitation

9. Join each index to its description

- | | |
|------------------------------|--|
| a) Ecological Footprint (EF) | It considers the fact that the accounting tool compares demand and supply. |
| b) Biocapacity (BC) | It measures the bioproductive supply that is available within a certain area (e g of arable land, pasture, forest, productive sea). |
| c) EF/BC accounting | It measures how much bioproductive area (whether land or water) a population would require to produce on a sustainable basis the renewable resources it consumes, and to absorb the waste it generates, using prevailing technology. |
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10. Four different kinds of relationship are usually identified between an indicator and its target: causal, component, statistical and conditional. What kind of relationship exists between:

Check the right answer (boxer).

CO2 emissions and global warming.

Causal Component Statistical Conditional

Traffic injuries and Road Traffic.

Causal Component Statistical Conditional

Road length and road traffic volumes.

Causal Component Statistical Conditional

Levels of air pollution and traffic noise.

Causal Component Statistical Conditional

Water erosion and physical soil degradation.

Causal Component Statistical Conditional

Final energy consumption and less energy use.

Causal Component Statistical Conditional

Municipal waste generation and waste prevention.

Causal Component Statistical Conditional

CH₄ emissions and GHG emissions.

Causal Component Statistical Conditional

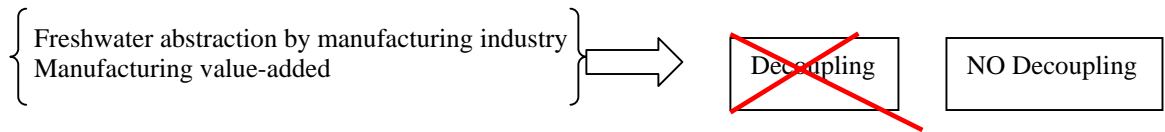
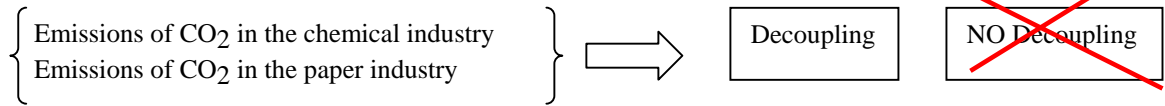
11. Decoupling indicators describe the relationship between two of the five components of the DPSIR framework. Which?

Check the right answer (boxer).

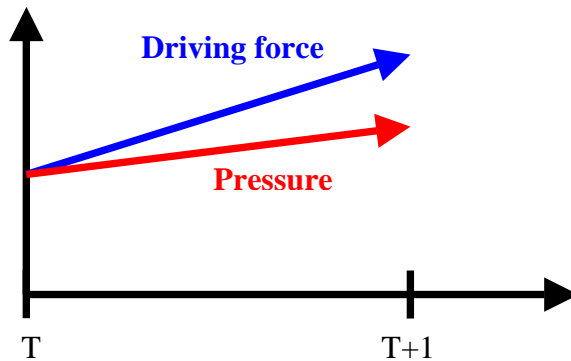
Driving force Pressure State Impact Response

12. Recognize the correct couples of variables useful to evaluate the decoupling:

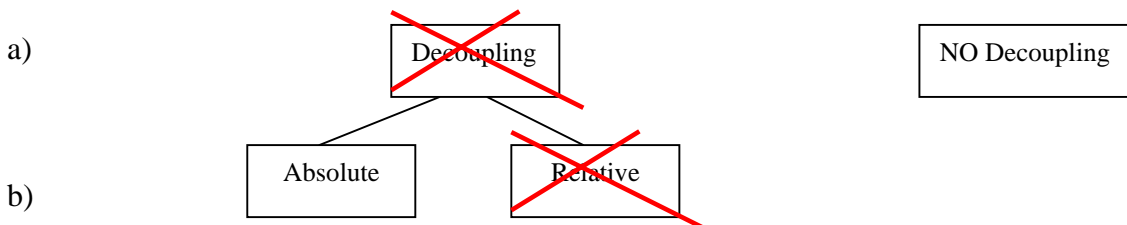
Check the right answer (boxer).



13. Establish if the decoupling is present in the period [T – T+1] and qualify it (absolute o relative decoupling) by the only graphic help. Check the right answer (boxer).



Check the right answer (boxer).



14. Which is the correct decoupling ratio “definition” ?

Check the right answer (boxer).

a) ~~Ⓒ~~ **Decoupling Ratio** = $\frac{(EP/DF)\text{at the end of study period}}{(EP/DF)\text{at the beginning of study period}}$

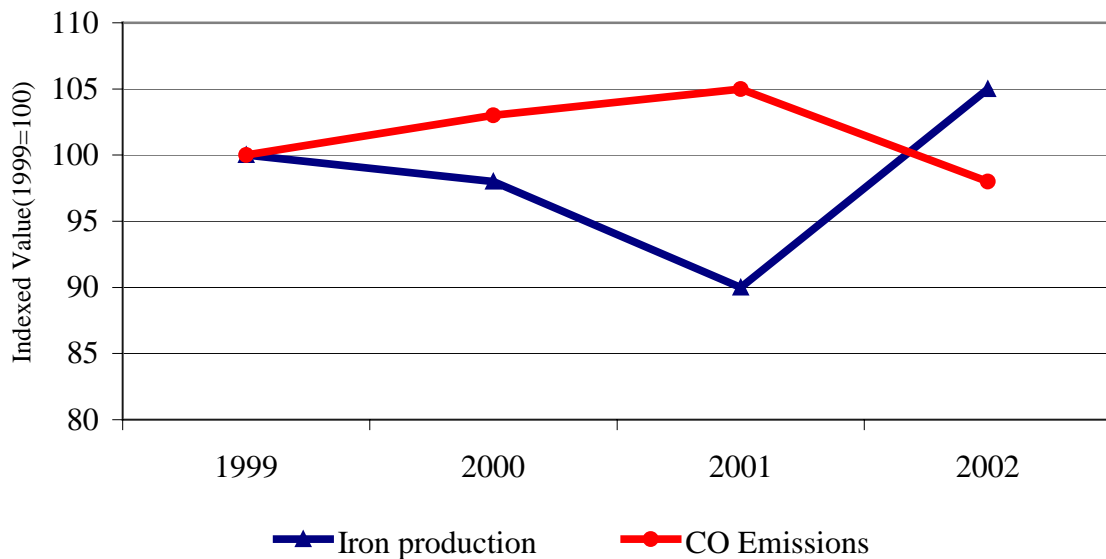
b) **Ⓓ Decoupling Ratio** = $\frac{(EP/DF)\text{at the beginning of study period}}{(EP/DF)\text{at the end of study period}}$

*where EP = Environmental Pressure
and DF = Driving Force.*

15. Based on the following graph, for what periods does not have sense investigate the decoupling presence and why?

Check the right answer (boxer).

Ⓒ 1999-2002 Ⓒ 1999-2000 Ⓒ 2000-2001 ~~Ⓒ~~ 2001-2002



16 “To monitor the state of the environment”, has been the first aim which inspired the core set development. True or false?

True False

17 “Integration indicators” give a knowledge of environmental conditions. True or false?

True False

18 What does “TERM” mean? **Transport and Environment Reporting Mechanism**
And which kind of indicators it includes? **Integration Indicators**

19 “Sustainable development indicators” assist decision-makers at all levels to adopt sound national policies. True or False?

True False

20 “Headline indicators” and “key indicators” are used in order to enlarge the audience. True or false?

True False
