

UNIVERSITY OF TRIESTE

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MASTER DEGREE IN

ECOLOGY AND SUSTAINABILITY OF GLOBAL CHANGES

BIOMONITORING FOR GLOBAL CHANGE DETECTION

**SURVEY ON THE PERCEPTION
OF SOCIO-ECOLOGICAL CHANGES**

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1. CLIMATE

Based on your perception, rate the following parameters or phenomena related to the climate giving a score, where 0 is no change, ± 1 – slightly increased/decreased, ± 2 – increased/decreased and ± 3 – significantly increased/decreased. Eventually, write a short note to describe the phenomenon (e.g., “stronger events but more erratic”), giving the appropriate score.

NB: we ask you to give your answers considering the area for which you have the longest (?)/prolonged experience, i.e. from the area where you lived continuously in the last 5-10 years

- Mean minimum temperatures -3 -2 -1 0 +1 +2 +3 no opinion

- Mean maximum temperatures -3 -2 -1 0 +1 +2 +3 no opinion

- Yearly rainfall -3 -2 -1 0 +1 +2 +3 no opinion

- Intensity of single rainfall events -3 -2 -1 0 +1 +2 +3 no opinion

- Thunderstorm frequency and intensity -3 -2 -1 0 +1 +2 +3 no opinion

- Hail -3 -2 -1 0 +1 +2 +3 no opinion

- Snow -3 -2 -1 0 +1 +2 +3 no opinion

- Snow cover duration -3 -2 -1 0 +1 +2 +3 no opinion

- Fog -3 -2 -1 0 +1 +2 +3 no opinion

- Mist -3 -2 -1 0 +1 +2 +3 no opinion

- Length of the dry season -3 -2 -1 0 +1 +2 +3 no opinion

- Length of the warm season -3 -2 -1 0 +1 +2 +3 no opinion

- Length of the cold season -3 -2 -1 0 +1 +2 +3 no opinion

- Wind intensity -3 -2 -1 0 +1 +2 +3 no opinion

- Summer sea temperature -3 -2 -1 0 +1 +2 +3 no opinion

- Winter sea temperature -3 -2 -1 0 +1 +2 +3 no opinion

- Maximum tide excursion -3 -2 -1 0 +1 +2 +3 no opinion

- Others _____ -3 -2 -1 0 +1 +2 +3 no opinion

2. POLLUTION

Is environmental pollution a matter of concern for you?

0 no opinion; 1 for nothing; 2 ; 3 ; 4; 5 very much.

How important is pollution monitoring to you?

0 no opinion; 1 totally ignored; 2 negligible 3 occasionally important; 4 important; 5 very important.

What kind of pollution have you experienced in the last month?

0 none; 1 air pollution; 2 acoustic pollution; 3 light pollution; 4 water pollution; 5 smell pollution; 6 electromagnetic pollution; 7 other (please specify) _____

In your opinion, can human health be affected by pollution?

0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes.

In your opinion, can the living components of ecosystems be affected by pollution?

0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes.

Please define empirically the pollution level of the place where you live

0 no opinion; 1 absent; 2 very low; 3 low; 4 medium; 5 high.

What is the level of pollution in your country since you were a child?

0 no opinion; 1 strongly decreased; 2 slightly decreased; 3 constant; 4 slightly increased; 5 strongly increased.

Which environmental matrix is most affected by pollution?

0 no opinion; 1 seas and oceans; 2 freshwaters; 3 soil; 4 air.

Select 3 items from the following list that you think are particularly important (otherwise check “no opinion”).

0 no opinion;

1 indoor pollution; 2 cigarette smoke; 3 electromagnetic fields; 4 microplastics; 5 NO_x;

6 ozone; 7 particulate matter; 8 persistent organic pollutants; 9 potentially toxic elements;

10 SO₂; 11 vehicular traffics; 12 others (....)

Do you check the pollution data provided online by the local Environmental Agency/Authority?

0 no opinion; 1 never; 2 yes, occasionally; 3; yes, at least once per month; 4 yes, at least once per week; 5 every day.

Do you trust in the data provided by your municipality/Environmental Agency ?

0 no opinion; 1 absolutely no; 2 basically no; 3 fifty/fifty; 4 basically yes; 5 absolutely yes.

3. LAND USE

Rate to what degree each of the following changes has affected the place where you lived in the last 5 to 10 years, giving a score from 1 to 7, where 1 is the lowest (extremely low impact) and 5 is the highest (extremely high impact)

- 1) Abandonment of mountain trails ____
- 2) Decrease in natural areas/green areas/agricultural areas____
- 3) Conversion of industrialized areas to other uses (e.g. recreational, farming, urban areas) ____
- 4) Abandonment of industrialized or urbanized areas _____
- 5) Reforestation of abandoned areas____
- 6) Increase in roads, roundabouts, and sealed areas____
- 7) Change of prevailing crops____
- 8) Urbanization____
- 9) other (to be specified) _____

4. NATURE

Based on your perception, give a score between 1 and 5 to changes related to plants and animals, where 1 is no change and 5 is maximum change. Eventually, write a short note to describe the phenomenon (e.g. “stronger events, but more erratic/irregular”), give the appropriate/corresponding score and add phenomena not considered by the authors of this survey.

Plant phenology (change in the timing of flowering/fruit ripening/leaf drop of a certain plant (please specify which one)

	Phenomenon	Plant
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	_____	_____

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____

Change in the timing of bird life (please specify which bird)

	Phenomenon	Bird				
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____

Change in the timing of mammals' life (please specify which animal)

	Phenomenon	Animal				
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____

Change in the timing of fishing

	Phenomenon	Fish				
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	_____	_____

Suggest other target organisms

The presence of alien or invasive species in the last ten years:

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 strongly increased.

The presence of alien or invasive species in the last twenty years:

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 strongly increased.

Do you think environmental pollution has a negative impact on the global change?

- 0 no opinion; 1 no effect; 2 slight; 3 medium; 4 heavy; 5 very heavy

Is blocking of vehicular traffic a valid solution when the threshold values for particulate matter are exceeded?

- 0 no opinion; 1 totally ignored; 2 negligible 3 occasionally important; 4 important;
- 5 very important.

In your opinion, what are the most important sources of pollution?

Please list them in a decreasing order of importance

.....

What is the contribution of common people lifestyle to the pollution level of the territory?

- 0 no opinion; 1 null; 2 almost negligible; 3 scarce; 4 slightly relevant; 5 very relevant.

Is the electrification of transportation a possible solution to decrease air pollution?

- 0 no opinion; 1 totally ignored; 2 negligible 3 occasionally important; 4 important;
- 5 very important.

5. SOCIETY

In your opinion, the involvement of European people in environmental issues...

(please select at least ONE time frame reference, compatible with your experience)

o **in the last five years had:**

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 strongly increased.

o **in the last 10 years had:**

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 strongly increased.

○ **in the last 20 years had:**

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 strongly increased.

Is sustainability an important item/factor in your decisions?

- 0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes

If you answered 4 or 5, for which items sustainability is most often considered? Multiple choices are possible, as follows:

- 1 packaging; 2 transportations; 3 clothes; 4 electrical devices; 5 energy use; 6 environmental temperature control in your home/office; 7 others (to be specified)_____

Do politicians take effective decisions to counter environmental emergencies/crises/disasters?

- 0 no opinion; 1 absolutely no; 2 no; 3 just a few, but still insufficient; 4 yes; 5 absolutely yes.

Do people choose public transportation over of private vehicles?

- 0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes

Do you think that environmental education is widespread and successful today?

- 0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes

In the last five years, the frequency of fruition of/access to natural sites (such as parks, reserves, wilderness)

- 0 no opinion; 1 strongly declined; 2 declined; 3 is the same; 4 increased;
- 5 strongly increased.

Is personal care becoming more important to you after Covid?

- 0 no opinion; 1 strongly declined; 2 declined; 3 is constant; 4 increased;
- 5 increased a lot.

The ethnic composition of the population in your region:

(please select at least ONE time frame reference)

○ **in the last five years**

- 0 no opinion; 1 is stable; 2 is changing; 3 is strongly changing.

○ **in the last ten years**

- 0 no opinion; 1 is stable; 2 is changing; 3 is strongly changing.

○ **In the last twenty years**

- 0 no opinion; 1 is stable; 2 is changing; 3 is strongly changing.

How do you live this phenomenon?

- 0 no opinion; 1 very negatively; 2 negatively; 3 indifferently; 4 positively; 5 very positively.

Why? (open answer)

.....
.....

6. INFORMATION ON GLOBAL CHANGE

In your opinion, how reliable is information about climate change?

- 0 no opinion; 1 totally unreliable; 2 unreliable; 3 problematic; 4 reliable; 5 totally reliable.

Do you do fact-checking on the information provided by the media?

- 0 no opinion; 1 never; 2 sometimes; 3 frequently; 4 very frequently; 5 always.

What are your sources for this type of information? (multiple answers are possible; list them in a decreasing order of importance, e.g. 5, 6, 2, 3, 4, 1)

- 0 no opinion; 1 books; 2 institutional web sites; 3 newspapers; 4 radio; 5 social media; 6 TV; 7 others

.....

Has the frequency of communication about these issues increased compared to the last five years?

- 0 no opinion; 1 absolutely no; 2 more no than yes; 3 fifty/fifty; 4 more yes than no; 5 absolutely yes

Has the frequency of communication about these issues increased compared to the last ten years?

- 0 no opinion; 1 absolutely no; 2 more no than yes; 3 fifty/fifty; 4 more yes than no; 5 absolutely yes

Have different opinions on global change helped you to take a position on this subject/issue?

- 0 no opinion; 1 No, because they increase confusion; 2 Yes, they help a lot; 3 other (please, specify)

Should scientists be more present on social media to improve the quality of the information provided?

0 no opinion; 1 no; 2 yes.

In your opinion, the time offered to advocates of “global change” is:

0 no opinion; 1 too much; 2 enough; 3 too scanty.

In your opinion, the time offered to advocates of “no global change” is:

0 no opinion; 1 too much; 2 enough; 3 too scanty.

7. FOOD

How do you consider environmental issues when choosing your food?

0 no opinion; 1 totally ignored; 2 negligible 3 occasionally important; 4 important; 5 very important.

Do you give importance to the production chain when choosing your food?

0 no opinion; 1 never; 2 sometimes; 3 frequently; 4 very frequently; 5 always.

Would you change your eating habits in order to reduce environmental costs of food production?

0 no opinion; 1 no; 2 sporadically; 3 partially; 4 almost totally; 5 totally.

Which of the following are always included in your food bag?

1 canned food; 2 fish; 3 frozen food; 4 fruit; 5 0 km food; 6 organic food; 7 pre-cooked food; 8 red meat; 9 seasonal food; 10 vegetables and its derivatives; 11 white meat; 12 other

Have you changed your eating habits in the last five years due to environmental issues/concerns?

0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes.

Have you changed your eating habits in the last five years for ethnic/religious reasons?

0 no opinion; 1 absolutely no; 2 no; 3 sporadically; 4 yes; 5 absolutely yes.

8. FINAL SECTION

Age (specify):

Sex: male female non-binary

Country and region of origin (place where you lived in your childhood)

Town size (n = inhabitants)

- n < 3.000
- 3.000 < n < 10.000
- 10.000 < n < 90.000
- n > 90.000

Typology of landscape (mountains, hills, plain, coastal, urban, etc.) of the place where you lived in your childhood (e.g., ten-year-old)

Present address

Town size (n = inhabitants)

- n < 3.000
- 3.000 < n < 10.000
- 10.000 < n < 90.000
- n > 90.000

Typology of landscape (mountains, hills, plain, coastal, urban, etc.) of the place where you lived in your childhood (e.g., ten-year-old)

Typology of academic engagement

Students

Course level: Bachelor Master PhD

Study sector/area: _____

Teaching Staff

Post-Doc Researcher Professor

Scientific sector: _____

Rate your interest toward topics related to the environment, its change and its conservation giving a score, where 1 is the lowest (extremely low interest) and 5 is the highest (extremely high interest)

Rate your appreciation for this survey

- 0 no opinion; 1 very negative; 2 negative; 3 indifferent; 4 positive;
- 5 very positive.

Is there any further items and/or topic that could have been included? Please specify

****** THANK YOU FOR YOUR COOPERATION ******