

# Flood exposure assessment of the Environmental Heritage and Assets

Welcome.

Thank you for choosing to fill out this survey.

Estimated time needed: 10'

Master's Degree Thesis in Geoengineering - University of Florence

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## \*Campo obbligatorio

Cover image: Kareni @ Pixabay

If you want to know more about the framework in which this survey has been developed, please read this section. Otherwise, go straight to the next section and start filling the survey!

This survey was developed in the context of studies related to a Master's Degree Thesis in Geoengineering, at the University of Florence.

The aim of the study is to develop and test new methods for assessing the exposure of the environmental assets to floods.

It was decided to build an evaluation framework capable of assessing the significance of each single environmental asset.

The aim is to develop a non-economic assessment framework, to determine the significance of each asset as a function of a set of some selected, intrinsic and objective characteristics.

The survey was developed to determine which environmental assets characteristics are preferred and considered most relevant than others.

The results of this form will be properly transformed into weights to assign at each of the considered characteristics. Then, the weighted values of the characteristics will be included in the system, improving its results.



## Something about you

You are kindly asked to answer the following questions about you. No personal data are collected in this survey. This will just help us categorize the results. Thank you.

### 1. Select the category you belong to:

*Contrassegna solo un ovale per riga.*

	Selection
Professional	<input type="radio"/>
Master's degree student	<input type="radio"/>
Bachelor's degree student	<input type="radio"/>
Stakeholder	<input type="radio"/>

### 2. Age range

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	Selection
< 20 years old	<input type="radio"/>
20 - 29	<input type="radio"/>
30 - 39	<input type="radio"/>
40 - 60	<input type="radio"/>
> 60	<input type="radio"/>

### 3. Assigned sex at birth \*

\* according to the American Psychological Association guidelines for an inclusive language:  
<https://www.apa.org/about/apa/equity-diversity-inclusion/language-guidelines>

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	Selection
Female	<input type="radio"/>
Male	<input type="radio"/>
Prefer not to answer	<input type="radio"/>

## Environmental assets

What you really need to know to fill out the survey:



For all the following questions, you are asked to think about the SOCIAL significance of the environmental assets. Nothing about vulnerability. Do not judge in terms of the solely economic value of an asset or a service. Think and answer in terms of the environment in its wider definition (natural processes, life, biodiversity, ecosystems, human life - sure, somewhere the economy is considered, but here it is not the primary indicator -).

## Here are reported some of the most important environmental assets

- Parks
- Reserves
- Wetlands
- Water sources
- Forests
- Woods
- Landscapes
- Viewpoints
- Coasts
- Rivers
- Geologic sites
- Volcanoes
- Glaciers
- (+ other similar or strictly related categories, depending also on the dataset available)

Let's start!

Your expertise and judgement are essential.

### Quick reference

Assessing the status of an environmental asset is quite a huge task. Analyses on biomass production, nutrients, species, plants, chemical elements and pollutants must be conducted. Also assessing the trends of these elements turns to be an important tool.

4. According to you, it is more significant an environmental asset in GOOD status or one in BAD status? \*



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GOOD

BAD

Ecosystem services (ES)

### Quick reference

Ecosystem services (ES) are contributions (benefits, products, ...) of ecosystem structure and function – in combination with other inputs – to human well-being (Burkhard et al. 2012). PROVISIONING ES are the products obtained from ecosystems. CULTURAL ES are the non-material benefits obtained from ecosystems. SUPPORTING ES are the services necessary for the production of all the others ecosystem services. REGULATING ES are the benefits from regulation of ecosystem processes.

### Focus on: SUPPORTING ES

### Quick reference

SUPPORTING ES include basic natural, chemical processes and contributions to life. The PRIMARY PRODUCTION category refers to processes like the photosynthesis, or the production of atmospheric oxygen.

5. Please classify these SUPPORTING ES contributions from the most important to the least important. They are proposed to you in random order. \*



*Contrassegna solo un ovale per riga.*

	1 (the MOST important)	2	3	4 (the LEAST important)
Primary production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Soil formation and retention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat for species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Focus on: PROVISIONING ES

### Quick reference

PROVISIONING ES include products obtainable from ecosystems. Among these goods are listed the freshwater supply for human use, fuel stocks, wild food. Also the genetic resources (genetic sequences, nucleotide and amino acid sequence information, traits, molecular events, ...) are listed under this category.

6. Please classify these PROVISIONING ES contributions from the most important to the least important. They are proposed to you in random order. \*



*Contrassegna solo un ovale per riga.*

	1 (the MOST important)	2	3	4 (the LEAST important)
Water supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Timber, fuel, wild crops, wild food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biochemical, pharmaceuticals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Genetic resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Focus on: REGULATING ES

#### Quick reference

REGULATING ES are the benefits coming from the regulation of the processes related to the ecosystem itself and to other ecosystems, also on larger scales. Ecosystems have the capability to face a lot of pollutants and can provide us and the environment with water purification and waste treatment. Moreover, erosion and flood control, storm protection, and on large scales, also the climate regulation, are listed under this category. Ecosystems regulating services are also the pollination and the biological and disease control.

7. Please classify these REGULATING ES contributions from the most important to the least important. They are proposed to you in random order. \*



*Contrassegna solo un ovale per riga.*

	1 (the MOST important)	2	3	4 (the LEAST important)
Flood regulation, erosion control, storm protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate regulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollutant control (air, water), water purification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pollination, biological control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Focus on: CULTURAL ES

#### Quick reference

CULTURAL ES are the non-material benefits coming from the ecosystems. They include recreation, tourism, spiritual values and ethical values. Also inspirational value and educational values, knowledge information. The feelings when you visit a natural place or admire the nature in its forms.

8. Please classify these CULTURAL ES contributions from the most important to the least important. They are proposed to you in random order. \*



*Contrassegna solo un ovale per riga.*

	1 (the MOST important)	2	3	4 (the LEAST important)
Recreation for the community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spiritual values, aesthetic values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educational values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultural diversity, cultural heritage values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The last ones.

### Quick reference

Ecosystem services (ES) are contributions (benefits, products, ...) of ecosystem structure and function – in combination with other inputs – to human well-being (Burkhard et al. 2012). PROVISIONING ES are the products obtained from ecosystems. CULTURAL ES are the non-material benefits obtained from ecosystems. SUPPORTING ES are the services necessary for the production of all the others ecosystem services. REGULATING ES are the benefits from regulation of ecosystem processes.

9. Please classify these ES categories from the most important to the least important. They are proposed to you in random order. \*



*Contrassegna solo un ovale per riga.*

	1 (the MOST important)	2	3	4 (the LEAST important)
Supporting ES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provisioning ES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulating ES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultural ES	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Quick reference**

Ecosystem service potential is the hypothetical maximum yield of selected ecosystem services. (Burkhard, B.; Kroll, F.; Nedkov, S. & F. Müller2012a. Mapping supply, demand and budgets of ecosystem services. Ecological Indicators 21,17–29.)

10. According to you, it is more significant an environmental asset: \*



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- which is object of scientific research
- which has potential ecosystem services capabilities, not yet exploited

That's all!

## DID WE MISS SOMETHING IMPORTANT?

11. Please list here a couple of characteristics or ES categories which we didn't mentioned but according to you are not negligible!

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THANK YOU for your time and your opinion.

12. Would you like to know the results? \*

Just check the YES box and type your email address in the next paragraph, and we will send you the results once the survey will be closed! Please be aware that by checking YES, you agree to let us manage your email address for sending you the results. We will not use your email address for other purposes.

*Contrassegna solo un ovale.*

Yes, send me the results of the survey.

No.

13. Your e-mail address

skip if you don't want to know the results

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