

GNSS satellites and commons

What do public green spaces, sea fish and a lighthouse have in common? In this unit you will learn about the important term "commons" and its relation to Global Navigation Satellite Systems (GNSS).

1 Since ancient times, fires and lighthouses have been used as navigation aids for maritime
2 infrastructure. For example, fires at the seacoast show merchant ships as well as fishing or
3 pirate boats the right way on their journeys. However, who is responsible for the construction
4 and maintenance of these navigation aids? In the end, generally the coastal inhabitants, who
5 do not necessarily profit from safe navigation, have to pay.

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7 The old English term "commons" (latin *res communis*) describes the common use of meadows,
8 pastures, and forests in a rural village. Everyone is allowed to let their cattle graze there and
9 everyone is allowed to collect firewood. Figuratively speaking, this is the use of a public good
10 by a community. In the age of the Internet, one also speaks of "digital commons". The best-
11 known example is Wikipedia. All Internet users can obtain information free of charge and use
12 this knowledge for their own purposes.

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14 To understand the idea in more detail, it is worth taking a closer look at two examples and
15 comparing them with the categories of economic science. Someone buys a *loaf of bread* and
16 eats it. Someone picks *mushrooms* in the forest and eats them. At first sight two similar
17 processes, but they differ in one essential point.

18 Bread is a typical example of how something is used as a private good. Economists say that
19 private goods are characterized by two features: a) someone can be excluded by simple
20 means (high bread prices, "bread box" or similar) and b) the users compete for the scarce
21 good (bread disappears when consumed, there is less for the individual if bread is shared).

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23 However, this does not apply for public goods in economics, for example *sunlight*. At first
24 glance, it appears here that use by consumer 1 does not affect use by consumer 2 (no user
25 competition/consumer rivalry). Sunlight does not diminish when we share it (free good).

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27 Applied to forest mushrooms these characteristics mix: Collectors cannot simply be
28 discouraged from collecting (\approx no exclusion / public property), but the number of mushrooms
29 is limited, the collectors compete for use (\approx private property). Much depends on the behavior
30 of the users: too many mushroom pickers, who harvest huge quantities of mushrooms and
31 devastate the forest, would result in a common nobody benefits from anymore. The problem
32 of overexploitation, for example overfishing of the oceans, due to lack of sustainability or
33 excessive profit-seeking, is called the "tragedy of the commons".

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35 On the other hand, if used sensibly, the number of mushrooms will be sufficient, if
 36 the forest is large enough and the weather plays along. Also, usage rules can help to ensure
 37 that things are sustainable and fair, for example that everyone collects only for own
 38 consumption.

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Shortened and adapted:

Silke Helfrich et al., Was sind Commons/Gemeingüter? CC BY-SA 4.0,
<https://commonsblog.files.wordpress.com/2007/08/schulservice-1-was-sind-commons.pdf>

Weitere Quellen: [alle Links mit Abrufdatum 08.11.2020]

- <https://en.wikipedia.org/wiki/commons>
- <https://en.wikipedia.org/wiki/Goods>
- Bundeszentrale für politische Bildung, <https://www.bpb.de/apuz/33204/elinor-ostrom-und-die-wiederentdeckung-der-allmende?p=all>

Task:

Describe the opportunities and challenges associated with the use of GNSS as a common resource. Proceed as follows:

- a. Define the terms "private good" and "public good" and assign the examples from the text and two examples of your own to each term.
- b. Find out what is meant by "anticommons" and describe GNSS satellites as "commons" or "anticommons".
- c. Compare the advantages which arise from the goods type of GNSS and the difficulties which have to be overcome simultaneously. Record your results in a table.
- d. Research life and work of the economist Elinor OSTROM. Describe which conditions Ostrom names for the successful use of common goods and discuss to what extent these conditions could also apply to the operation and use of GNSS?