

Future pathways of forest ecosystem services

– a stakeholder analysis in four European regions

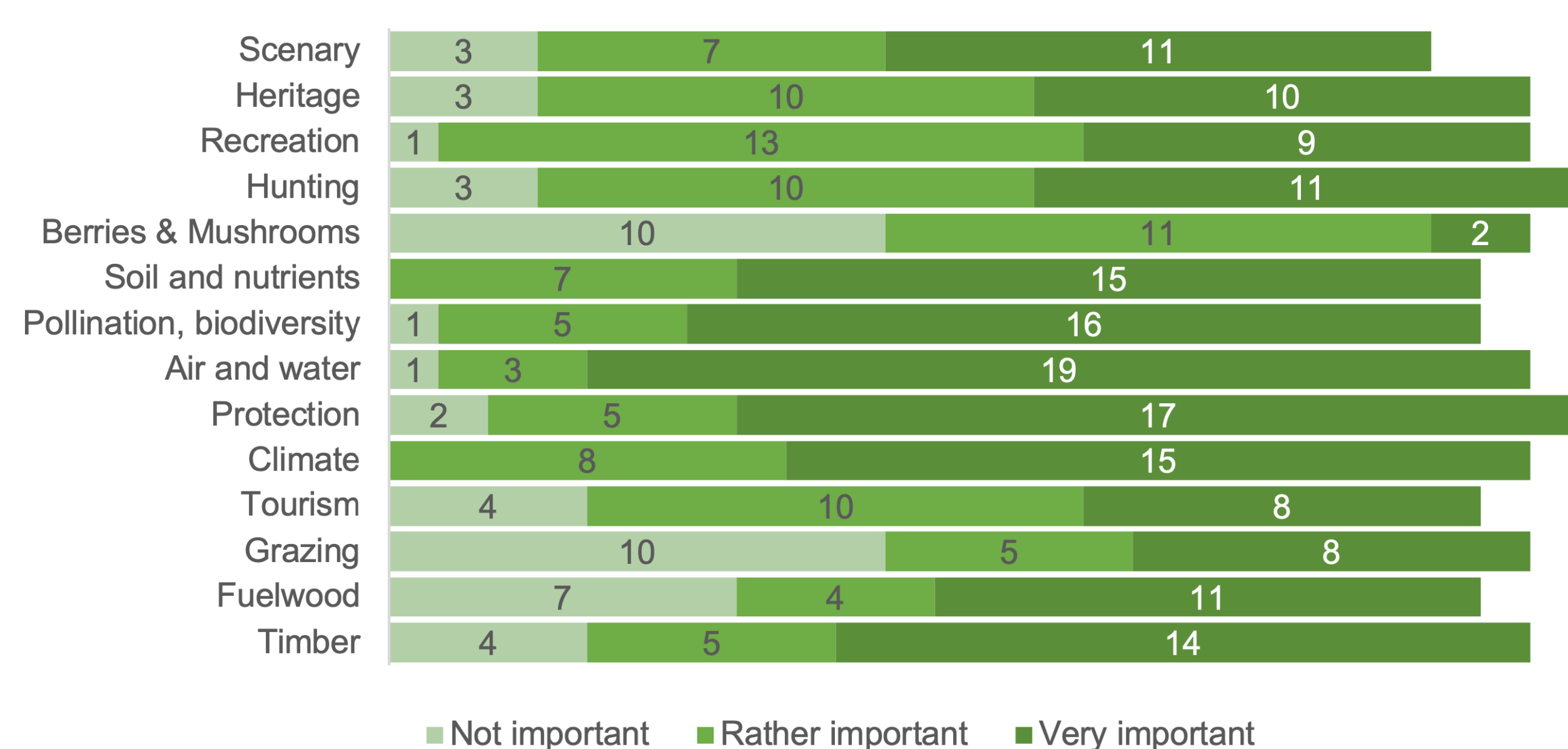
- The aim of the study was to understand stakeholder's perceptions of forest ecosystem services in the four case study regions Catalonia (Spain), Estonia, Grisons (Switzerland), and Hesse/ Thuringia (Germany).
- Stakeholders in the four European regions value clean air and clean water high together with climate change mitigation. These are forest ecosystem services that benefit not only locally but also internationally.
- Regional differences reflect the need and the focus of stakeholder's land use priorities. Production oriented stakeholders tend to value the providing services high in regions that have strong forest industry traditions. Protective functions are valued high in areas that are sensitive to disturbances.
- EU and national regulations are key factors affecting use of forest ecosystem services.

Which forest ecosystem services are important?

The most important forest ecosystem services according to stakeholders are supporting and regulating services (e.g., pollination, clean air and water, and climate change mitigation). Biodiversity was also mentioned.

Providing services, e.g., timber, fuelwood, berries and mushrooms were more contested – both more and less important.

Among the cultural values, scenery and heritage together with recreation was important with few stating them to be less important.



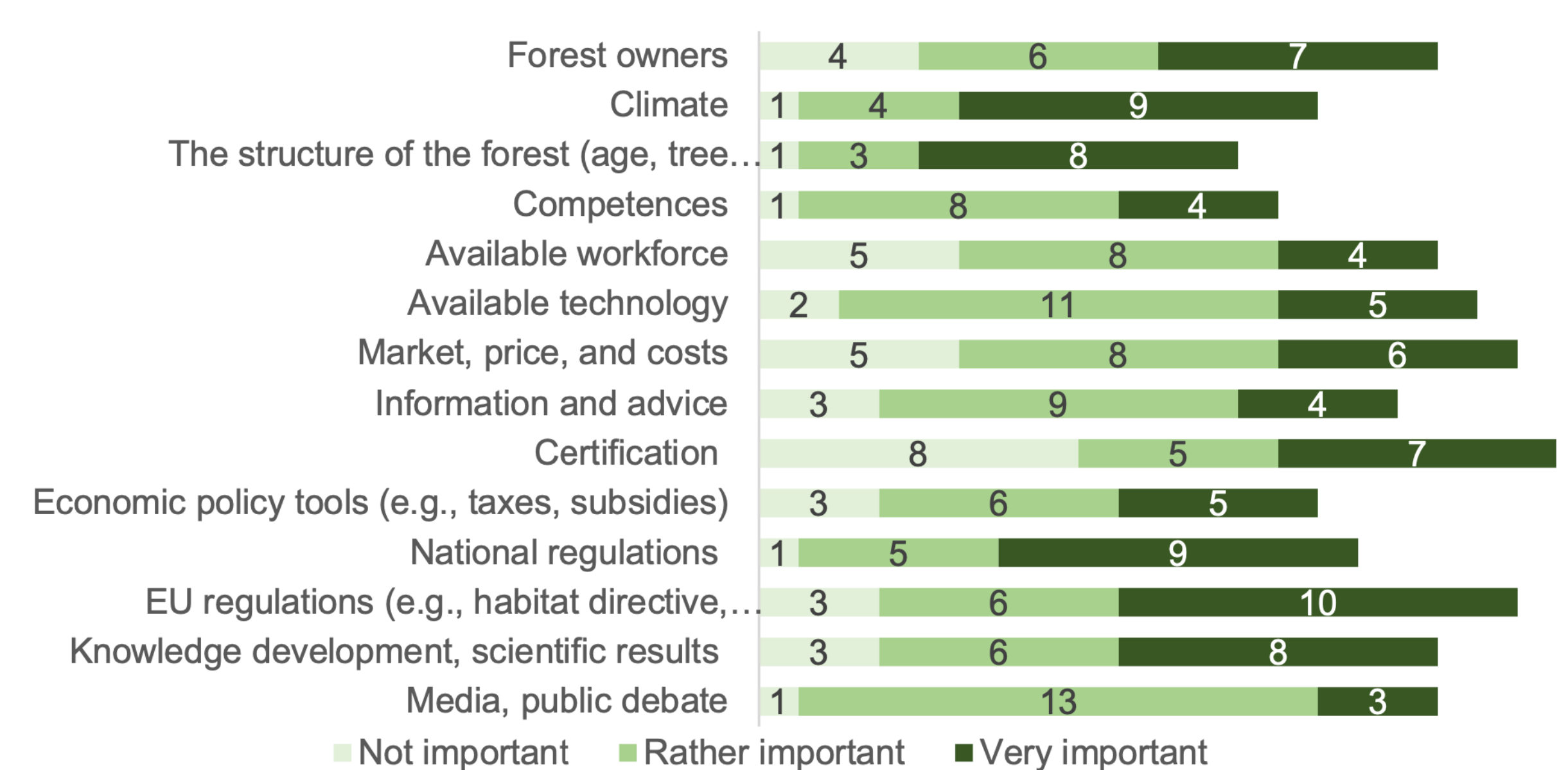
What affects decisions?

Stakeholders were asked what factors affect decision on using forest ecosystem services.

The most important factor mentioned are EU and national regulations together with climate.

Among the factors that were of less importance, stakeholders mentioned certification.

Factors of rather importance were media and available technology.



Are there conflicts between services?

The stakeholders identified both synergies and conflicts between different groups of forest ecosystem services.

The most frequent synergy was found between providing and cultural services entailing that these services support each other. The single largest synergy mentioned was between production of timber and bioenergy, as well as hunting of game and cultural environment.

The most frequent mentioned conflict was between providing services and cultural services, e.g., public recreation and timber harvest. Another frequently mentioned conflict was between providing and supporting services, i.e., timber harvest and climate change mitigation.

	Providing services	Regulating services	Supporting services	Cultural services
Providing services	59	32	64	94
Regulating services	86	16	4	28
Supporting services	130	105	43	35
Cultural services	168	80	110	96

Note: green indicates synergies, red indicates conflicts. Squares indicate synergies and conflicts between forest ecosystem services within the same category.

Regional differences?

Supporting and regulating services was important to most stakeholders, especially clean air and clean water and climate change mitigation. This is also in line with current national and international policies.

Stakeholders show a more diverse view of providing and cultural services, e.g., timber was considered important in Estonia, Grisons, and Hesse/Thuringia, while not important in Catalonia. Only Estonia mention bioenergy production as important.

Stakeholders rather agree on identifying that the most conflicts between forest ecosystem services are found between providing and supporting services. However, Grisons emphasis conflicts between providing services and protective functions, explained by the need of protection against avalanches.

Method: case study based upon semi-structured interviews with selected stakeholders (total 24) representing each of the four categories of forest ecosystem services; providing, supporting, regulating and cultural.



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