

Cultural ecosystem services (CES) provided by the Baltic Sea marine environment

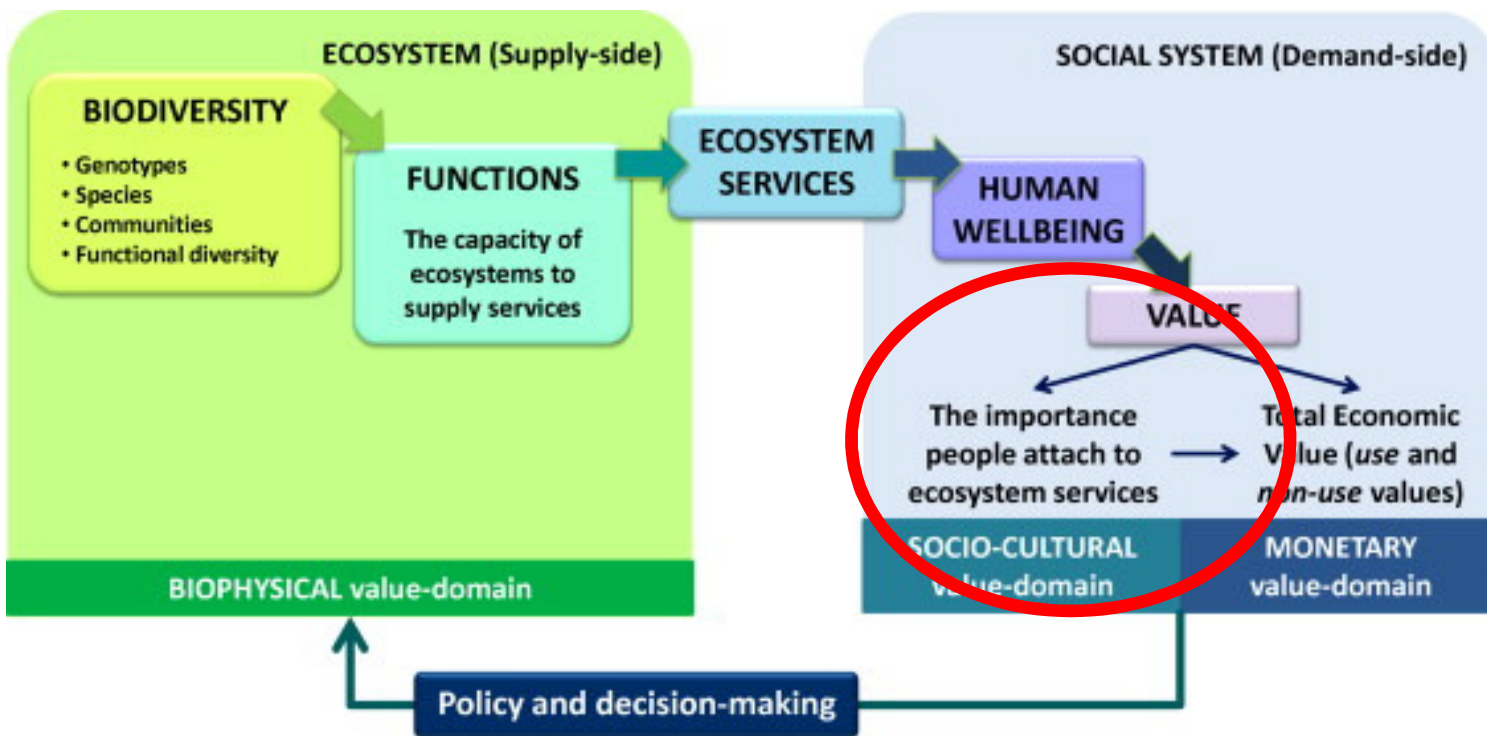
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Cascade of ecosystem services



CES from Marine environment

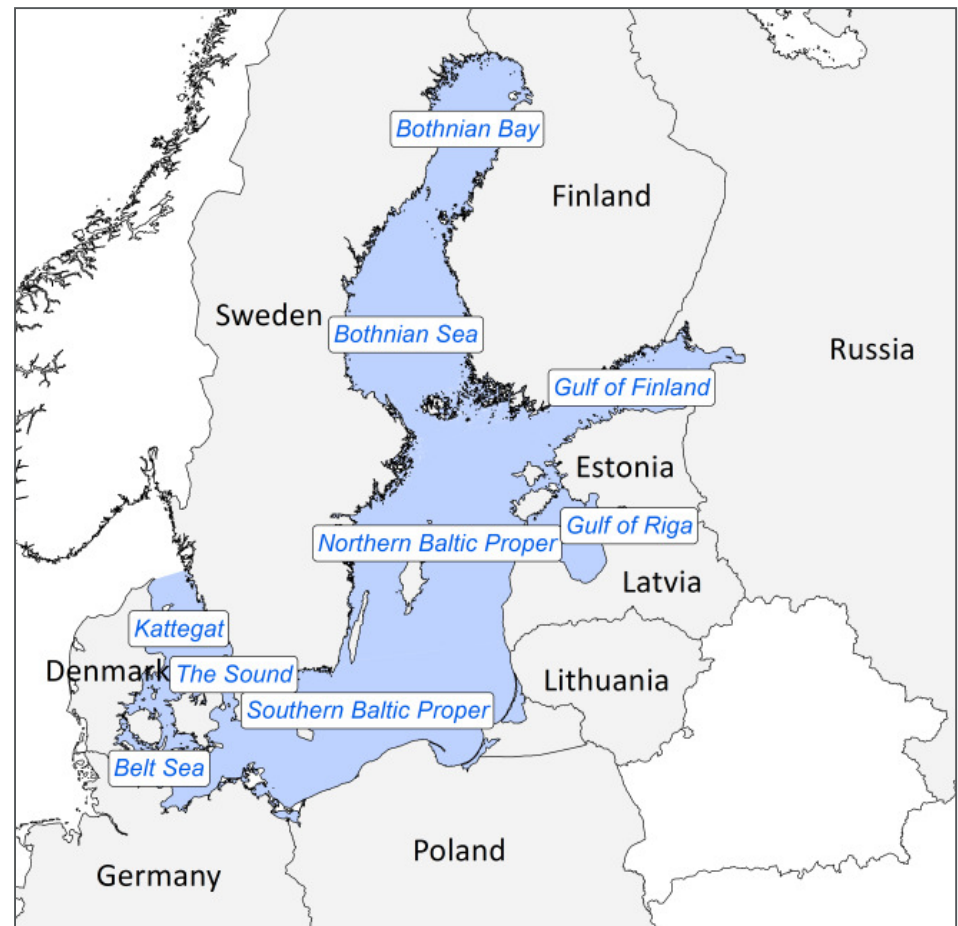
- "life-enriching and life-affirming contributions to human well-being “
- “cover all the non-material, and normally non-consumptive, outputs of ecosystems that affect physical and mental states of people”
- importance of coastal areas as 40% of the world's population lives within 100 km of the coast
- Focus has been only in few cultural services
 - recreation

Aims

- To develop measurement of CES for marine environments
- Identifying relative importance of various CES
- Defining the variables that explain the individual perception of CES
- to identify groups of CES that cluster with each other
- Identifying homogenous groups of people carrying similar CES composition

Methods

- Coordinated surveys in Finland, Germany and Latvia
- Late 2016 – early 2017
- Representative sample of the population
- Altogether 4800 respondents
- Response rates: 15-35%



Measure of CES: from CICES to survey

Class	Applications to Baltic Sea	Survey measure
Experiential use of land-/seascapes in different environmental settings	Bird watching, diving, snorkelling	Habitats for many animals and plants.
Physical use of land-/seascapes in different environmental settings	"beaching", walking, hiking, boating, angling, hunting, bird watching, photographing	Opportunities for recreational activities (e.g. swimming, fishing, walking, boating, bird watching).
Social	Diving, fishing, boating, bird watching communities, social relation related to research, environmental actions (nature conservation)	
Scientific and other knowledge formation	Ecological, social and cultural research on Baltic Sea environment, other "hobby" based knowledge generation	An environment for learning and gaining new information.
Educational	Environmental education: literature, lessons, camps, excursions	
Heritage, cultural	Literature on culture of Baltic sea, museums, ruins, cultural landscape	Experiencing historically and culturally important places.
Cultural diversity	Diversity of local livelihoods (e.g. fishing, tourism, handicrafts) affected by ecosystems	
Entertainment	TV programmes, multimedia, literature on Baltic sea	N
Aesthetic	Paintings, music, performances inspired by the Baltic Sea ecosystems	Inspiration for artistic work (photographing...).
		Enjoyment from landscapes.
Sense of place	Places such as sea shores, fishing villages that people attach themselves	Spiritual experiences, sense of belonging, and symbolic meaning.
Symbolic	Charismatic species (seals, fish species, birds) or other objects such as visual image, belief, action that represent, stand for, suggest an idea linked to Baltic Sea environment	
Sacred and/or religious	Spiritual, ritual identity, holy places, or sacred plants of animals and their parts	
Existence	Enjoy knowing that the site/Baltic sea is existing	Habitats for many animals and plants.
Bequest	Other people in my generation and future generation able to enjoy t...	N

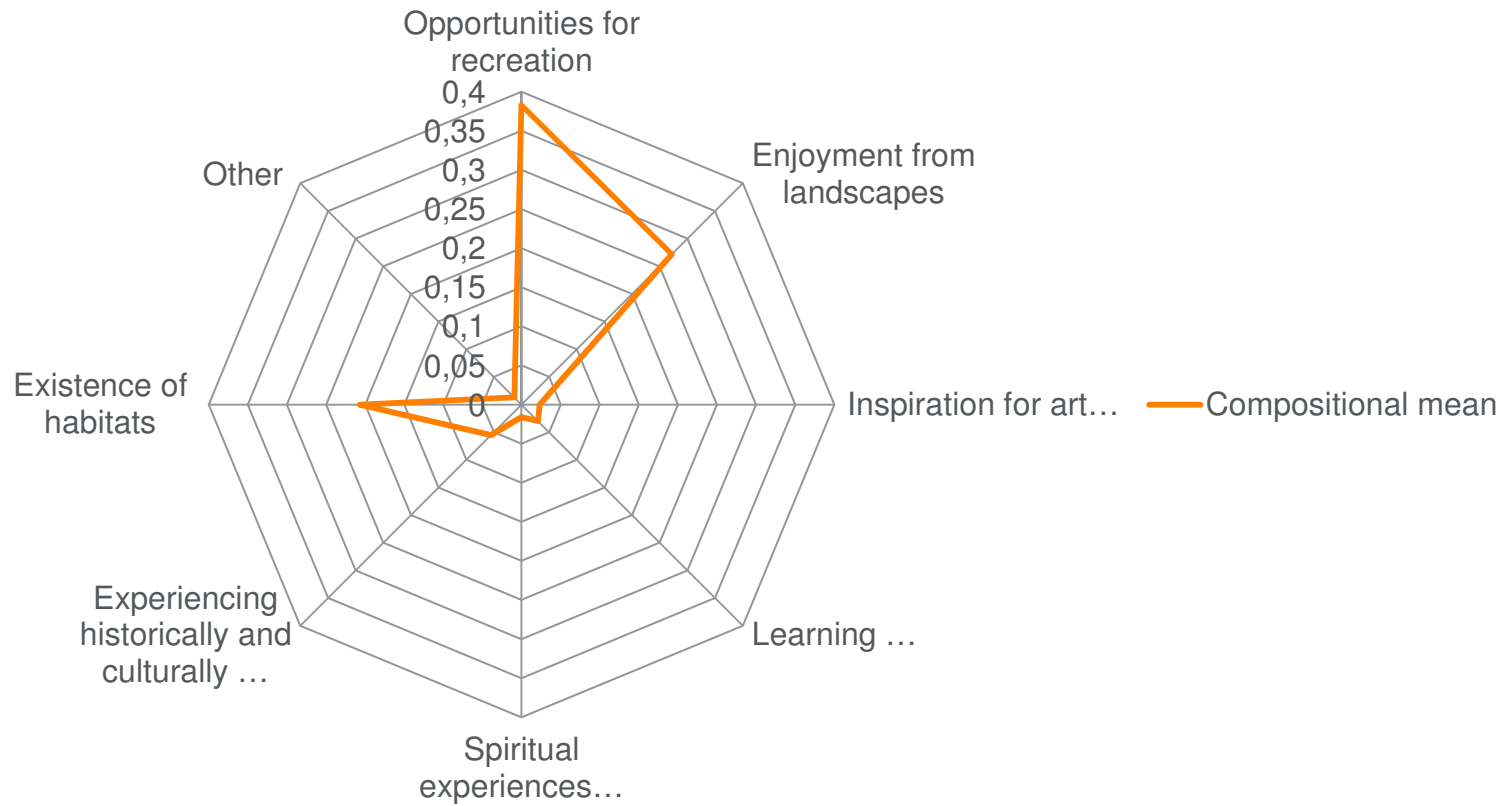
Measure: Importance of cultural ecosystem services

- Respondents were asked to allocate 100 points between different cultural ecosystem services based on their importance to them personally

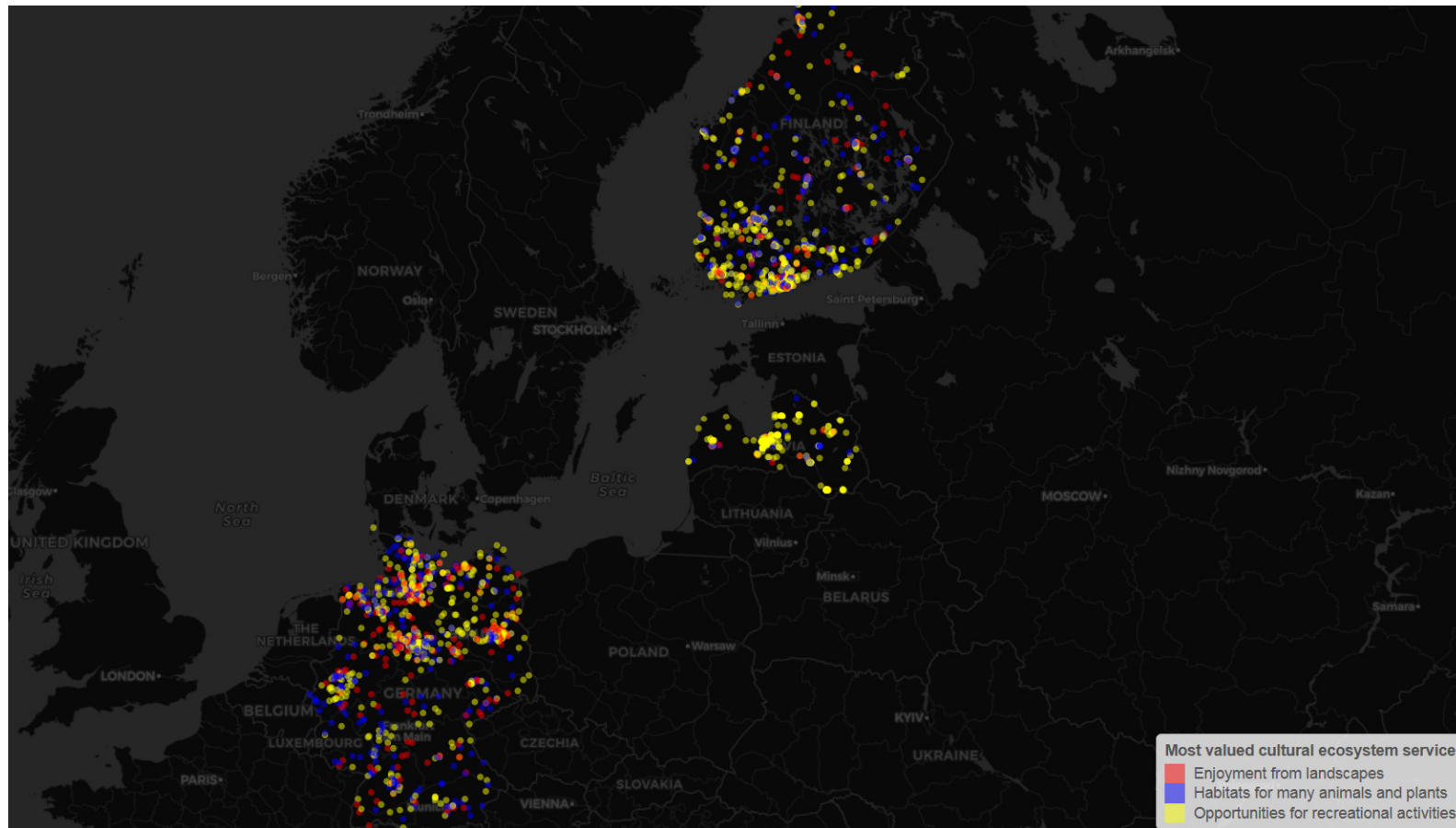
Compositional nature of CES-measure

Please distribute points	Points
Opportunities for recreational activities (e.g. swimming, fishing, walking, boating, bird watching).	—
Enjoyment from landscapes.	—
Inspiration for artistic work (photographing...).	—
An environment for learning and gaining new information.	—
Spiritual experiences, sense of belonging, and symbolic meaning.	—
Experiencing historically and culturally important places.	—
Habitats for many animals and plants.	—
Other reasons not mentioned in the list above.	—
Sum	100

Results



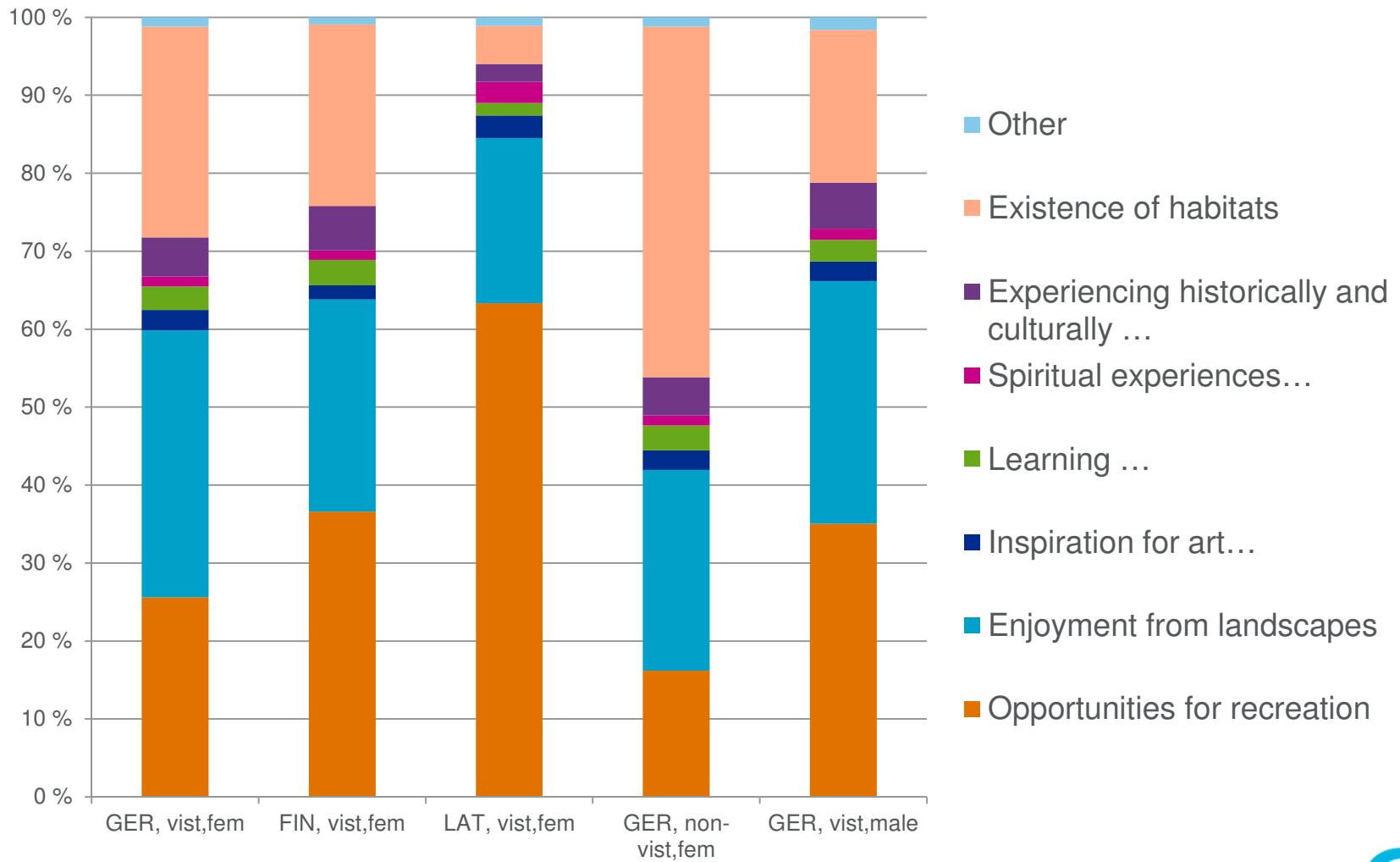
Spatial aspects of CES



Variables associating with CES composition

- **Visits to coast and sea**
- Distance to coast
- Urbanization of home environment
- **Country**
- **Gender**
- Education
- Occupation
- Income
- Age
- **Nature relationship**

Predictions



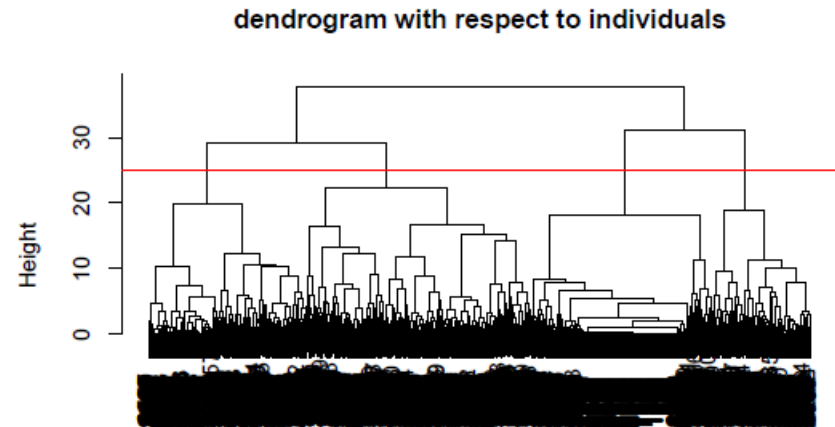
Grouping people based on CES perceptions

C 1. (49%): existence of habitats, historically and culturally important places

- Finns and Germans
- stronger environmental orientation

C 2. (18%): inspiration for art, learning, spiritual experiences and sense of belonging, experiencing historically and culturally important places

- Germans



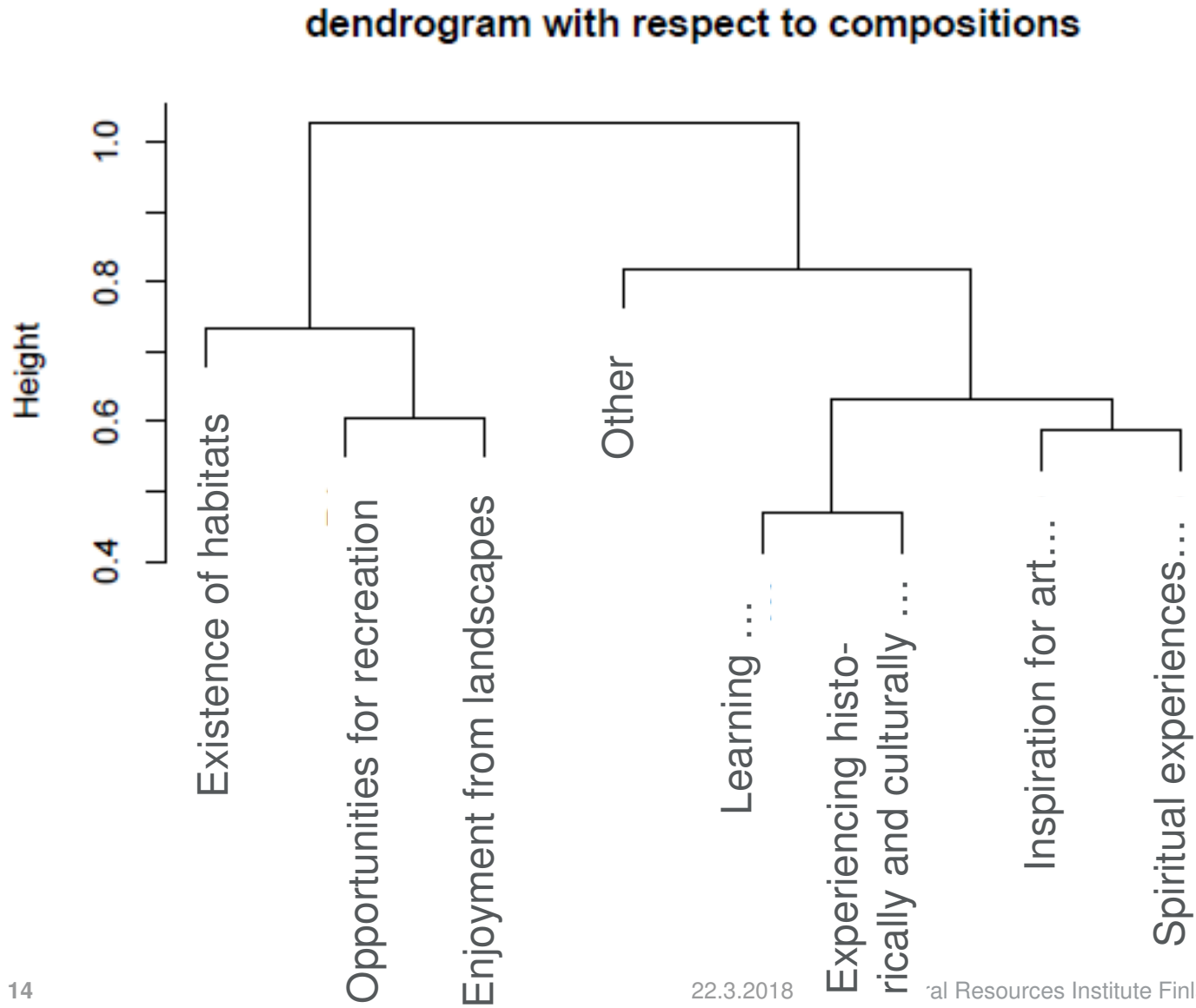
C 3. (20%): recreation services, landscape and the existence of habitats

- Finns
- stronger environmental orientation

C 4. (14%): recreation

- users
- Latvians
- lowest environmental orientation

Clustering cultural ecosystem services



Discussion and conclusions

- Recreation, landscapes and habitats most important CES
- CES composition associates significantly with several variables but is not easy to predict
- Considerable country wise differences in CES composition
- Actual use of coastal areas define the CES composition
- Several subcategories of CES have minor importance and cluster together -> need to develop the classification

Acknowledgements



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<http://https://blogs.helsinki.fi/balticapp/>

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