

# A Deep Dive Into Few Public Participation Methods

This module explores and analyzes participatory approaches for recognizing key actors. It presents methods to reveal actors' spatial relationship with nature and local environment to increase deliberation and empowerment.

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# Learning Objectives

**Section 1:** To become familiar with participatory methods for recognizing key actors and their relationships to a given sustainability challenge

**Section 2:** To gain insights into approaches for eliciting how people value nature and their local environment

**Section 3:** To learn how to capture the spatial relationships between a community and their local environment to identify potential land use conflicts and support informed land planning decisions

**Section 4:** To become aware of different means of expression to allow participants to communicate through visual images in an impactful way and increase deliberation and empowerment in the process

# Module Structure

## Module section

Achieving representation. Stakeholder analysis

Breakpoint activity

Eliciting values. Freelisting

Breakpoint activity

Including the spatial component. Participatory mapping

Breakpoint activity

Allowing various ways of expression. Photovoice

Breakpoint activity

# Section 1

To become familiar with participatory methods for recognizing key actors and their relationships to a given sustainability challenge

# Achieving Representation: Stakeholder Analysis

1. Importance of stakeholder analysis
2. Introduction to stakeholder analysis
3. Net Map. Introduction
4. Net Map. How-To
5. Net Map. Example
6. Practice

# The Importance of Stakeholder Analysis

- Addressing sustainability land management challenges requires considering and involving the people that have a stake in the process and the outcome of the decision being made: the stakeholders.
- It is also important to understand and take into consideration how they relate to each other: the social networks.



# Introduction To Stakeholder Analysis

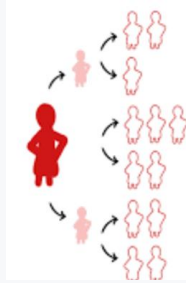
- Helps in “recognizing who the key actors are and the type of connections between them, relevant to the issue at stake”.
- Refers to “a range of tools for the identification and description of stakeholders on the basis of their attributes, interrelationships, and interests related to a given issue or resource”.
- Allows addressing questions such as:
  - Which are the most influential actors? What makes them influential? What are their agendas?
  - Are there marginalized actors? How can they be reached and empowered?
  - How to increase cooperation and communication? Which actors can help the communication?

Source: [Reed et al, 2009](#)

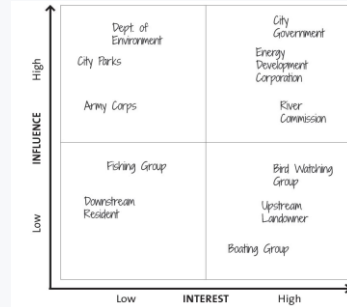


# Introduction To Stakeholder Analysis

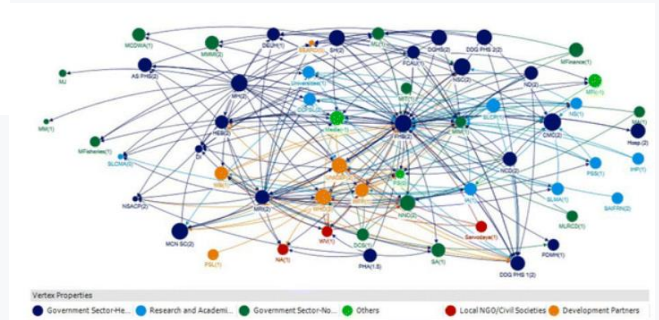
1. Stakeholder identification



2. Stakeholder categorization



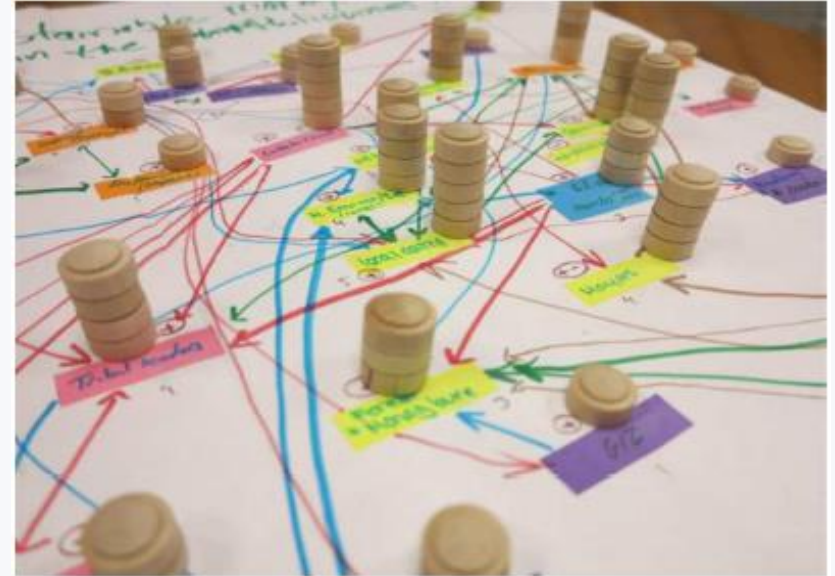
3. Investigation of relationships between stakeholders



# Net Map: Introduction



- Method for identification and visualization of stakeholders, their (inter) relations, their goals and their “influence”
- Interview/workshop-based
- Low-tech and low-cost
- Tool for discussion and learning



Reference: [Dr. Jennifer Hauck, CoKnow Consulting](#)

# Net Map: How-To



## Net Map interview process

- Who has influence in the issue? List all the relevant actors.
- In which category do they fit (types, levels, sectors)? Use colors and symbols.
- Draw links and networks of ... (e.g. information, finance)
  - Different networks - different colors
  - Bidirectional link - two headed arrow
- Set influence towers.
- What are their goals?

Reference: [Dr. Jennifer Hauck, CoKnow Consulting](#)

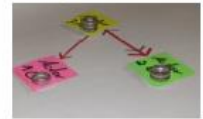
### Step 1



### Step 2



### Step 3



# Net Map: Practice



Schiffer E and Hauck J. (2010)

**Net-Map: Collecting Social Network Data and Facilitating Network Learning through Participatory Influence Network Mapping.**

*Field Methods 22(3):231-249.*

# Net Map: Practice



White Volta Basin Board, Ghana -consultative multi-stakeholder organization to improve coordination towards economic and environmental sustainability.

Net-map exercise to understand the influence and goals of different actors in the network to push recommendations towards sustainability.

1. “Who will influence the achievement of the basin board’s goals?”
2. Links: line of command, flow of funds, giving advice, flow of information
3. “How strongly can these actors influence the achievements of the basin board’s goals?”
4. Interviewees were asked whether actors had developmental or environmental goals or both.



Source: [Eva Schiffer and Hauck 2010](#)

# Net Map: Practice



Visualization and discussion of the resulting map to facilitate participant exchanges and social learning. Understand diverse perspectives on the issue.

Collectively address questions such as

- Which network links should be strengthened to address the governance challenge?
- How can marginalized stakeholders be empowered or link up with other actors in the networks?
- Are there actors in a position to serve as knowledge hubs or mediate in a conflict?
- Which network actors could work against specific goals or cause conflict?



Source: Eva Schiffer, IFPRI, CGIAR Challenge Program for Water and Food, Washington, November 2007

# Net Map: Practice



## Practice Net Map with your colleagues, friends or family!

1. Gather in a small group with a big sheet of paper, post-its in different colors, pens of three different colors and coins (for the towers)
2. Define a Net Map question. E.g. Who can influence/help us achieve our goal of (reducing the consumption of plastics at home / reducing the amount of food waste we produce / ... ) in (our household / our neighborhood / ...)?
3. Decide the linkages between the actors you want to investigate (2 to 4). E.g. line of command, advice, flow of funds...
4. Carry out the mapping process and visualize the resulting map asking the questions presented in the previous slide (links that need to be strengthened, actors that are marginalized, actors that can impede the goal...?)

### Step 1



### Step 2



### Step 3



# Breakpoint Activity

1. There is a wide range of studies using Social Network Analysis. You can start learning more about it by reading the following:
  - Reed, MS; Graves, A; et al. (2009). Who's in and why? A typology of stakeholder analysis methods for natural resource management. *J Environmental Management* 90(5):1933-49
  - Colvin, RM.; Witta, GR.; Lacey, J. (2016). Approaches to identifying stakeholders in environmental management: Insights from practitioners to go beyond the 'usual suspects'. *Land Use Policy* 52: 266–276
  - Vogler, D.; Macey, S.; Sigouin, A. (2017). Stakeholder Analysis in Environmental and Conservation Planning. *Lessons in Conservation* 7:5–16
2. Watch this video on how social network analysis can help manage watersheds:  
<https://www.globalwaters.org/resources/videos/SWS/sustainable-wash-systems-social-network-analysis>





# Section 2

To gain insights into approaches for eliciting how people value nature and their local environment

# Eliciting Values: Freelisting

1. Importance of Eliciting Values
2. Introduction to Freelisting
3. Freelisting: How-To
4. Freelisting: Example
5. Practice

# Importance of Eliciting Values

- Valuation, in its broad sense of ‘assigning importance’, is inherently part of most decisions on natural resource and land use.
- Understanding the plural values that people attribute to nature aids in
  - Aligning management interventions with people’s values,
  - Identifying consensual and conflicting values associated with management approaches.
- Eliciting these values requires participatory approaches.

Sources: [Jacobs et al 2016](#); [Arias-Arevalo et al 2017](#)

# Freelisting: Introduction



- Freelisting interviews investigate the various ways in which people with different cultural backgrounds interpret and value aspects of a specific domain (e.g., favorite foods, landscapes, medicinal plants).
- In an interview, people are asked to list all the items they can think of in regard to a specific domain in whatever order they come to mind.
- Since all cultures use some system of categorization to order experience, the researcher tries to determine what categories are important to people, how they are arranged, and what values are attached.

Source: Newig and Puri 2010

# Freelisting: Introduction



Freelisting rests on three assumptions:

1. When people freelist, they tend to list items in order of familiarity,
2. Individuals who know a lot about a subject list more items than those people who know less,
3. Items that most respondents mention indicate locally prominent items.

# Freelisting: How-To



Structured interview through which the interviewee provides a list of items in connection to a specific topic.

e.g. “How does the landscape here contribute to your well-being? Please briefly report everything that comes to your mind”.

## Box 8.1 Instructions: How to do a freelist exercise

Freelists are conducted with individuals, either orally or by asking respondents to complete the freelist themselves in writing.

1. Ask the same question of all respondents: “Please tell me (or write down) as many *X* (domain name) as you can think of” or “Please list all the *X* (domain name) you know”.
  - a. If they come to a stop, encourage them to remember more items by reading over the list they have produced so far.
  - b. You may wish to limit the list to 10, 15 or 25 items depending on your goals.
  - c. Please note that a freelist asks people for what they *know*, not what they *use* or *do*! Those are different questions, often asked later.
2. Write down or record answers in the order they are given and in the language being used, exactly as they are spoken (this is where the translator may help). Tape or digital recordings allow you to check your transcriptions. Do not “correct” the list yourself - you must do that with informants (see main text).
3. Follow up the freelist with an interview to discuss in greater detail the items they have mentioned, collecting synonyms, descriptions, uses, and the significance of each item to the informant.

Source: Newig and Puri 2010

# Freelisting: How-To



The list of items is analyzed to identify:

1. Which are the items mentioned within that domain?
2. Which are most important: frequency, mean rank and salience?
3. How much variation is there in the knowledge or values among the group?

# Freelisting: How-To



Example of the analysis of a freelisting of ecosystem services (ES) provided by orchard meadows. Colours indicate the ES category. Source: Ana Smaranda Stephan.

ES	Frequency (Nr. of respondents)	Frequency (% of respondents)	Mean rank	Salience	Rank salience
Aesthetic	34	52,31	1,94	0,269	1
Recreation and mental and physical health	33	50,77	2,18	0,233	2
Food for humans	31	47,69	2,32	0,205	3
Biodiversity	31	47,69	2,71	0,176	4
Habitat	18	27,69	2,72	0,102	5
Other	8	12,31	2,13	0,058	6
Environmental protection	8	12,31	3,00	0,041	7
Food for animals	9	13,85	3,38	0,041	8
Air quality regulation	7	10,77	3,14	0,034	9
Work/income for regional farmers					
Landscape diversity					
Enjoyment					

$$\text{Salience} = \frac{\text{Frequency}}{\text{Number of respondents} \times \text{Mean rank}}$$



# Freelisting: Example



Bieling, C.; Plieninger, T.; Pirker, H.; Vogl, CR. (2014).

**Linkages between landscapes and human well-being: An empirical exploration with short interviews**

*Ecological Economics 105: 19–30*

# Freelisting: Example



The study investigates

- the linkages that people perceive between a landscape that they are attached to and their well-being,
- how these linkages differ across social variables.

262 face-to-face interviews in four areas in Germany and Austria asking:

*“How does the landscape here contribute to your well-being? Please briefly report anything that comes to your mind”.*



# Freelisting: Example



Percentage of respondents mentioning, mean rank and salience for landscape value types (for each type, the ten items with highest salience are indicated; n = 262).

		% of informants mentioning	Mean rank	Salience (Sutrop index)	Rank salience
Forms	Mountains	21.8	3.98	0.0546	3
	Forest, woodland	17.9	4.45	0.0403	5
	Water bodies	10.3	2.85	0.0361	9
	Trees	6.1	3.25	0.0188	17
	Meadows	9.9	6.50	0.0153	21
	Hills	3.8	2.70	0.0141	23
	Valley	5.0	3.92	0.0127	26
	Trails and other infrastructure	6.5	5.35	0.0121	28
	Animals	10.7	9.43	0.0113	30
	Flat topography	1.9	2.00	0.0095	35
Practices (including processes)	Hiking	30.2	7.48	0.0403	6
	Cycling	12.6	5.15	0.0245	12
	Walking	15.3	7.18	0.0213	16
	Cultivating	9.5	5.92	0.0161	20
	Seasons, natural rhythms	9.5	8.08	0.0118	29
	Jogging, Nordic walking	4.6	5.17	0.0089	36
	Being active, doing sports	5.7	6.47	0.0089	37
	Working	6.1	6.94	0.0088	38
	Consciously perceiving	5.3	9.14	0.0058	59
	Mountaineering, climbing	6.1	10.81	0.0057	62
Relationships	Beauty	36.6	3.59	0.1020	1
	Naturalness, nature	31.3	4.17	0.0750	2
	Tranquility	23.3	4.74	0.0491	4
	Place attachment, feeling at home	17.2	4.53	0.0379	7
	Unspoiltness, integrity	16.0	4.36	0.0368	8
	Recreation, relaxation	19.1	5.40	0.0353	10
	Green	9.5	3.48	0.0274	11
	Diversity, variedness	7.3	3.05	0.0238	13
	Good air	13.0	5.62	0.0231	14
	Space for doing and experiencing things	10.7	4.79	0.0223	15

Farmers

Visitors

# Freelisting: Example



- Interviews were carried out in very little time, willingness to participate was high, and people appeared to have no difficulties with the question posed.
- The approach delivered abundant and relevant data on the topic.
- Several people reported that they found it interesting and stimulating to reflect on the topic raised.

# Freelisting: Practice



## Practice Freelisting interviewing your colleagues, friends or family!

1. Think of a topic/domain to investigate (e.g things that people like about your city).
2. Decide what will be the format of the interview (oral or written) and additional questions that might be relevant in interpreting the results (e.g. area where they live? time they have lived in that city?).
3. Ask your respondents to list everything that comes to mind.
4. Analyse the results to identify
  - a. Which aspects have been mentioned? Was there something you did not expect? Who mentioned it?
  - b. Which aspects have been mentioned by most of the people?
  - c. Are there differences among your respondents (e.g. people living longer mentioned most often this or that than people that just moved in)?
  - d. How could all this information inform the planning of your city?

# Breakpoint Activity

## 1. If you want to know more about the importance of eliciting values read:

- Arias-Arévalo, P.; B. Martín-López; Gómez-Baggethun, E. (2017). Exploring intrinsic, instrumental, and relational values for sustainable management of social-ecological systems. *Ecology and Society* 22(4): 43.
- Jacobs, S; Dendoncker, N.; Martín-López, B; et al . (2016). A new valuation school: Integrating diverse values of nature in resource and land use decisions. *Ecosystem Services* 22(B):213-220,

## 2. If you want to become an expert on freelisting read:

- Newing, H. and Puri RK (2011). Documenting local environmental knowledge and change. In Newing, H., Eagle, C., Puri, R., Watson, C. *Conducting Research in Conservation*. London: Routledge, Chapter 8: 126-152

## 3. If you want to get some inspiration you can start with:

- Fagerholm N, Martín-López B, Torralba M, et al. (2019). Perceived contributions of multifunctional landscapes to human well-being: Evidence from 13 European sites. *People and Nature* 2: 217–234.



# Section 3

To learn how to capture the spatial relationships between a community and their local environment to identify potential land use conflicts and support informed land planning decisions

# Including The Spatial Component: Participatory Mapping

1. Importance of considering the spatial component
2. Introduction to Public Participation GIS
3. Public Participation GIS: How-to
4. Public Participation GIS: An example
5. Practice



# Importance of The Spatial Component



Most of the decisions taken in the management of the land and the natural resources are based on spatial information.

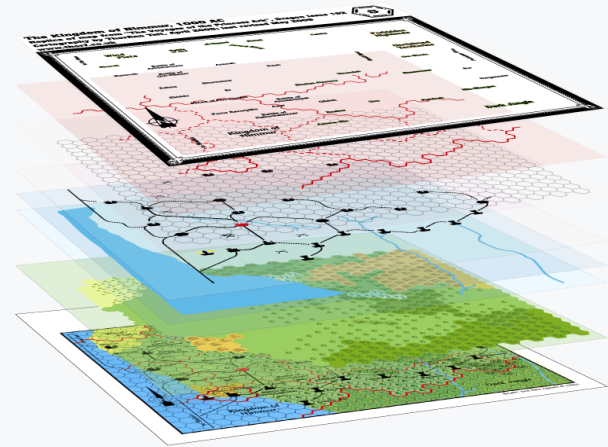
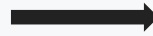
- Topography, hydrology, infrastructures network, etc... based on experts knowledge (geographers, geologists, planners...),
- But what about the socio-cultural spatial aspects, such as places that are important for the local population and that contribute to their wellbeing and the local ecology? This information can be elicited by experts with great difficulty. It needs to be provided by the people.

Participator mapping aims to integrate the experiential spatial knowledge and aspirations of local communities and individuals in decision making.

# Introduction to Public Participation GIS



Public Participation GIS is a participatory mapping approach that makes use of Geographic Information Systems to collect, analyze and visualize the data provided by stakeholders.



# Introduction to Public Participation GIS



It has been applied in several contexts

- Community and neighborhood planning
- Environmental and natural resource management
- Values and preferences of local actors identification
- Ecosystem services mapping
- Traditional ecological and local knowledge preservation
- Future scenario planning

# Public Participation GIS: How-To



## Choosing the format

- In face to face individual surveys, online, by post...
- In the context of a workshop

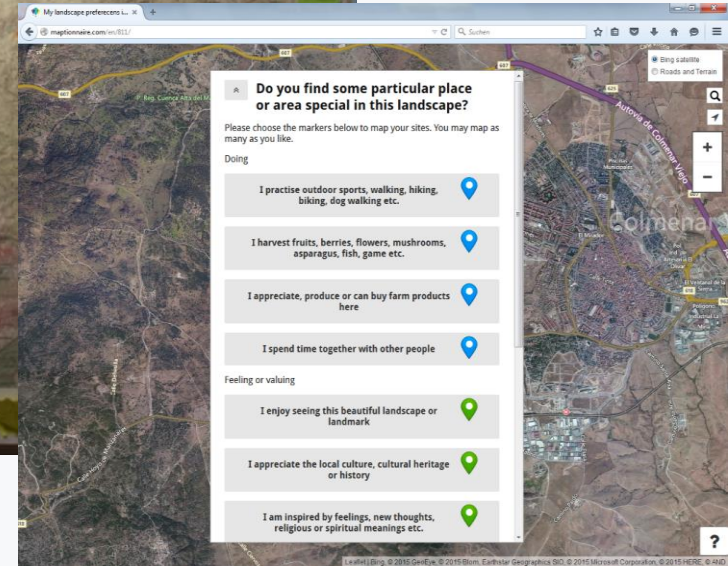
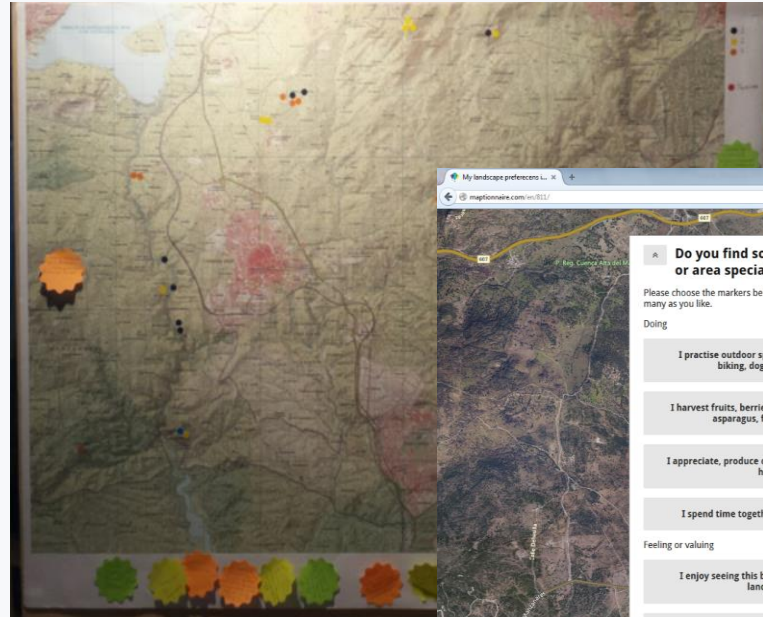


# Public Participation GIS: How-To



## Choosing the format

- Using an online survey and map
- Using a paper map and stickers

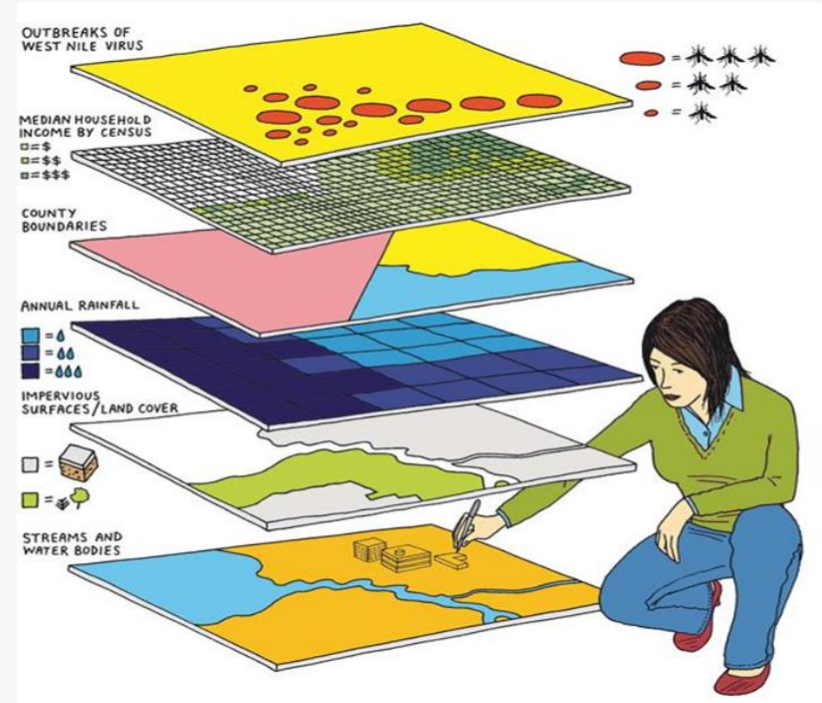


# Public Participation GIS: How-To



## Deciding on the spatial attributes to map

- landscape values and special places
- ecosystem services
- development preferences
- national park experiences
- perceived environmental impacts
- climate change risks
- knowledge of landscape conditions
- recreation resources



(Brown 2012)

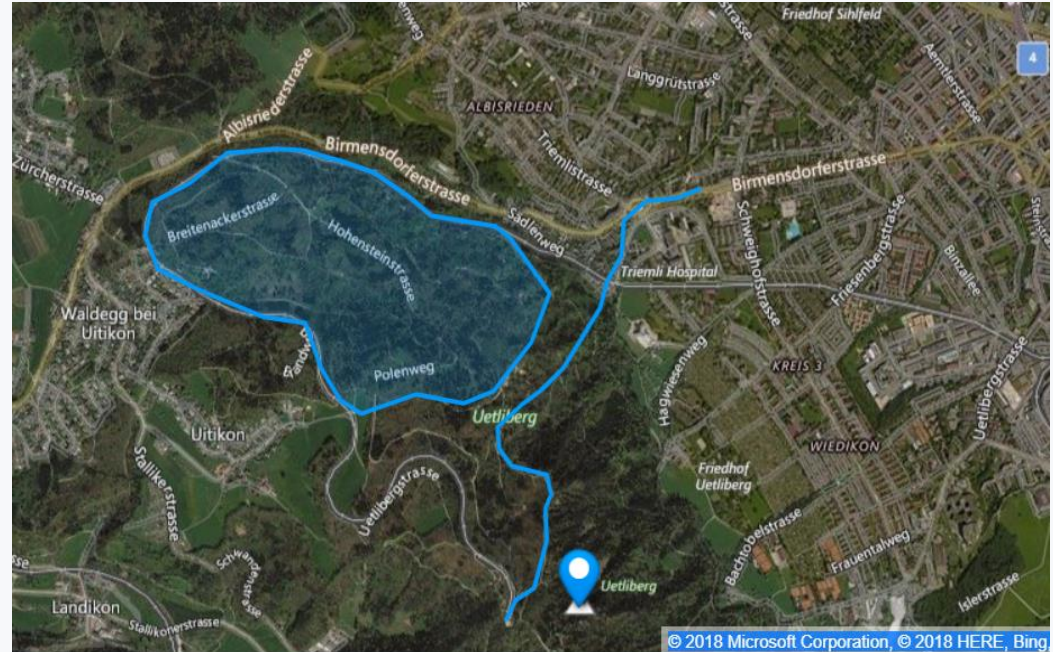
Source: [zuerawalkscape.blogspot.com/2010/05/narrativas-espaciales-para-una.html](http://zuerawalkscape.blogspot.com/2010/05/narrativas-espaciales-para-una.html)

# Public Participation GIS: How-To



Deciding how to represent the spatial attributes to map

- Lines
- Points
- Polygons

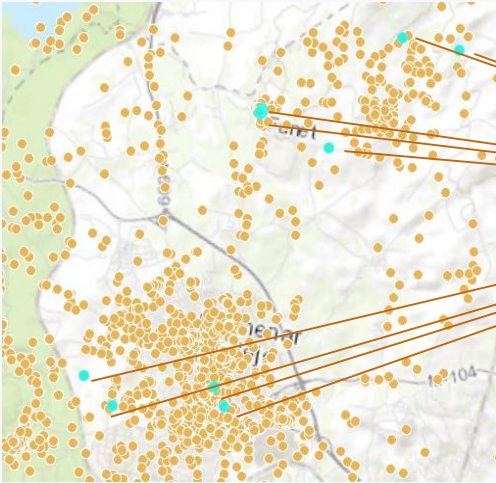


# Public Participation GIS: How-To



## Public Participation GIS database

Spatial data of attributes (shapefile)



Respondent info (excel file)

	A	F	CS	CT	CU	CV	CW
1	respondent	Gender	Year of birth	We ne	We ne	We ne	We ne
227	8	Female	1987	0	0	0	0
228	13	Male	1962	0	0	0	1
229	23	Female	1971				
230	34	Female	1952				
231	36	Male	1962				
232	50	Male	1946	0	0	0	1
233	60	Female	1957	0	0	0	1
234	68	Female	1966	0	0	0	0
235	70	Female	1952	0	0	0	0
236	84	Female	1982	0	0	0	0
237	87		1948	0	0	0	0
238	88	Male	1988	0	0	0	0
239	94	Male	1954	0	0	0	1
240	95	Male	1957	0	0	0	1
241	101	Female	1971				



# Public Participation GIS: How-To



## Analysis

- How are the mapped places spatially distributed? Do they concentrate in specific areas or are they scattered all over the place?
- What biophysical information can help explain these spatial patterns? (e.g. accessibility, land cover...)
- What socio-cultural variables or respondent characteristics can explain these spatial patterns?



# Public Participation GIS: Example

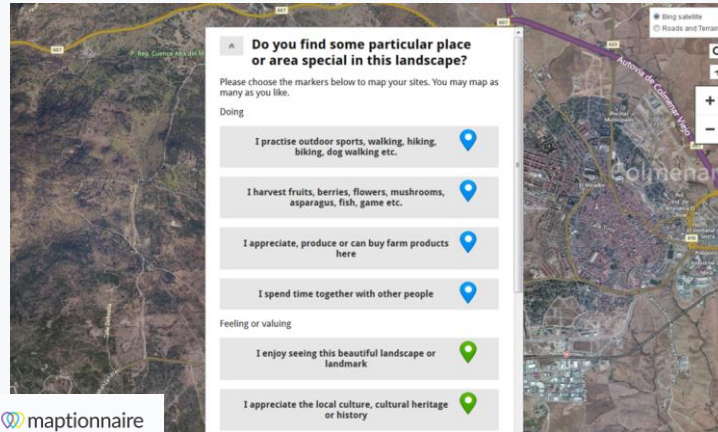


García-Martín, M.; Fagerholm, N.; Bieling, C.; ... and Plieninger, T. (2017).  
**Participatory mapping of landscape values in a Pan-European perspective.**  
*Landscape Ecology, 32(11): 2133–2150*

# Public Participation GIS: Example



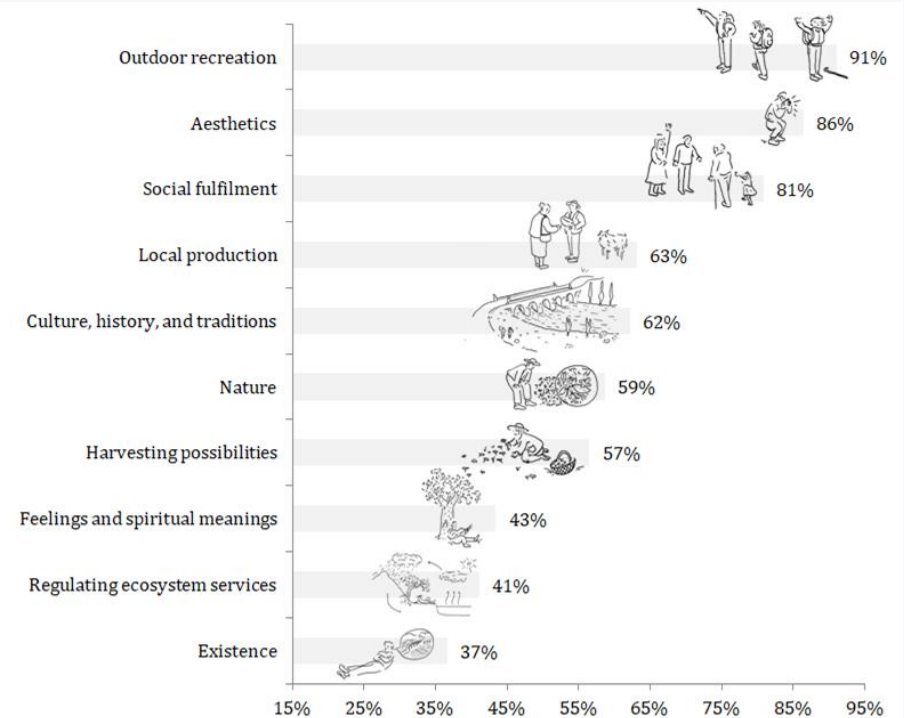
The aim was to analyse how landscape values are perceived across European rural landscapes and how these perceptions are connected to bio-physical landscape features and socio-economic backgrounds.



# Public Participation GIS: Example



Most and least commonly mapped  
landscape values



Drawings: Luis Antonio Martín Muñoz

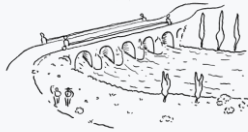
Figure 12. Percentage of respondents ( $n = 844$ ) that perceived each landscape value type.

# Public Participation GIS: Example



## Spatial patterns in the perception of landscape values

Spatially clustered / perceived collectively



Cultural heritage



Outdoor recreation



Local production



Social interaction

Dispersed / perceived individually



Inspiration



Existence

Drawings: Luis Antonio Martín Muñoz

# Public Participation GIS: Example

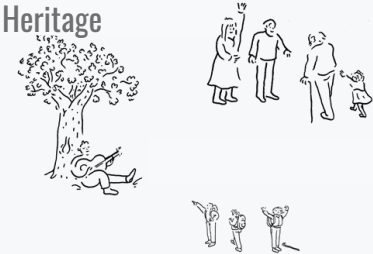


Preferred biophysical landscape characteristics and elements

Urban Centers



Cultural Heritage



Natural Environment



Public Paths



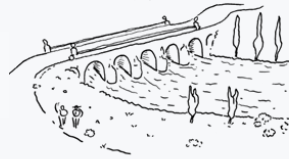
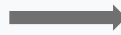
Drawings: Luis Antonio Martín Muñoz

# Public Participation GIS: Example



Connection between the perception of landscape values and the respondents' characteristics

Older respondents perceive more



Culture

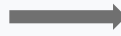


Local production



Harvesting

Landowners perceive more



Drawings: Luis Antonio Martín Muñoz

# Public Participation GIS: Example



Presenting the results in a local workshop triggered an interesting discussion on how to better preserve those places that are important for the wellbeing of the population.

Interesting approach for taking into account the knowledge, experiences and aspirations of the local population and engaging them in decision making.





# Breakpoint Activity

1. There is a wide range of studies using Public Participation GIS. You can start learning more about it by reading the following:
  - Brown, Greg (2012). Public Participation GIS (PPGIS) for regional and environmental planning: reflections on a decade of empirical research. *Journal of Urban and Regional Information Systems Association* 25 (2) 7-18.
  - Wolf, I.; Wohlfart, T.; Brown, G.; Lasa, AB (2015). The use of public participation GIS (PPGIS) for park visitor management: A case study of mountain biking. *Tourism Management* 57: 112-130
2. Watch this video on how participatory mapping GIS can help bring change and empower local communities: <https://vimeo.com/6537312>



# Section 4

To explore different means of expression to allow participants to communicate through visual images in an impactful way and increase deliberation and empowerment in the process

# Allowing Various Ways of Expression: Photovoice

1. Importance of allowing various ways of expression
2. Introduction to photovoice
3. Photovoice: How-to
4. Photovoice: An example
5. Practice

# Importance of Allowing Various Ways of Expression



Using channels different to the written or spoken word can enhance creativity and self-expression of the local community.

A powerful channel for expression, communication and empowerment is using the visual image:

- Accessible for people that cannot write or read,
- Photos are self-explanatory and can record settings and moments,
- Photos are a very appealing outcome that can be easily shared.

Allow the “possibility of perceiving the world from the viewpoint of the people who lead lives that are different from those traditionally in control of the means for imagining the world”

Source: Wang and Burris 1998)

# Introduction To Photovoice



“Photovoice is a process by which people can identify, represent, and enhance their community through a specific photographic technique. It entrusts cameras to the hands of people to enable them to act as recorders, and potential catalysts for change in their own communities”

## Goals

1. Enable people to record and reflect their community's strengths and concerns
2. Promote critical dialogue and knowledge about important issues
3. Reach policymakers

Source: Wang and Burris 1998)

# Photovoice: How-To



Participants are asked to take photographs of specific aspects related to the issue at stake that are then discussed in a deliberative process.

## Steps

1. Establishment of the community issue to investigate
2. Participant recruitment
3. Participant training and consent
4. Photo taking activity
5. Photo-discussion with participants
6. Data analysis
7. Dissemination of the findings (photo exhibitions)



Source: Rodríguez-Morales 2020

# Photovoice: Example



Berbés-Blázquez, M. (2012)

**A Participatory Assessment of Ecosystem Services and Human Wellbeing in Rural Costa Rica Using Photovoice**

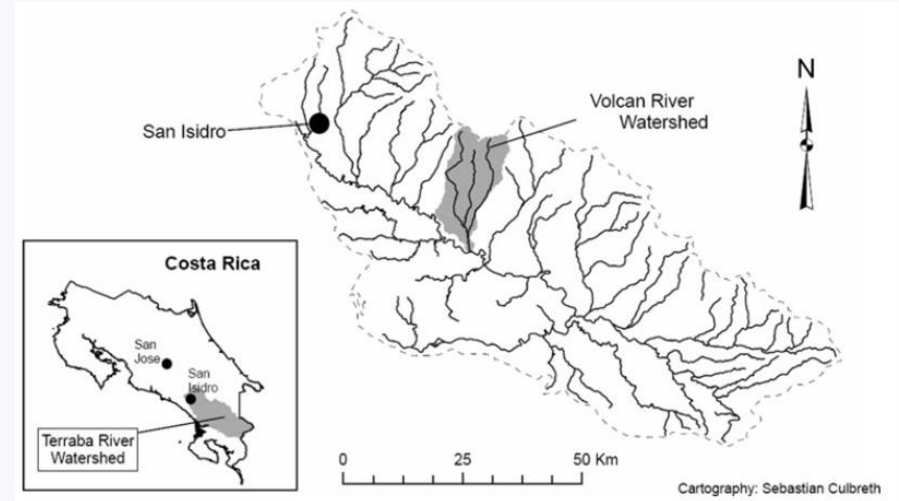
*Environmental Management, Vol. 49, pp. 862-875.*

# Photovoice: Example



Photovoice exercise carried out in the Volcán River watershed in Costa Rica

1. Community-level assessment of ecosystem services in a watershed dominated by pineapple monoculture
2. Evaluation of the strengths and the limitations of photovoice as a tool for mapping the relationship between ecosystems and people





# Photovoice: Example



## Preparatory process

- Researcher spent 5 months living with and observing the community
- Researcher organized a meeting open to everyone to introduce the project and recruit photovoice volunteers

## Photovoice activity

- 11 groups of 2 to 4 participants
- Participants decided on a route (3-4 hour walk, ca 70 photos)
- Participants were given a digital camera, the researcher accompanied

## Discussion in semi-structured format

- Meaning of what was represented in the photos
- Ranking

# Photovoice: Example



## Analysis

Identification of 21 common themes categorized into different types of ecosystem services

- Which bio-physical aspects were mentioned more often?
- To which services were they associated?
- To which aspects of well-being were they more often associated to?

*\* In the photo, examples of photographs of ecosystem services taken by participants during transect walks*



# Photovoice: Example



## Photovoice allowed

- Communities to identify their strengths and concerns
- Promotion of critical dialogue around key issues
- Informing policy makers

# Photovoice: Practice



## Practice Photovoice with your colleagues, friends or family!

1. Gather 2 or 3 friends, colleagues or family members and go for a walk with them through your city. Ask them to take pictures individually of those elements they see that contribute to their wellbeing.
2. Collect all the photos and show them to the group of participants to discuss:
  - What is represented in the photos? How does the representation contribute to the wellbeing?
  - Can you identify some common elements or categories?
  - Can you identify some shared or conflicting perceptions among the participants?
  - Could you all agree on the 10 photos that represent the elements that are most important for the wellbeing of people?
3. Reflect on how this exercise has helped you look at the city from a different perspective and how this information could help city planners improve the living conditions in your city.

# Breakpoint Activity

1. For a detailed description of how photovoice works and an interesting example of its implementation read the following:
  - Wang, C., Burris, M.A., 1997. Photovoice: Concept, methodology, and use for participatory needs assessment. *Heal. Educ. Behav.*
  - Beatriz Rodríguez-Morales, 2020. Looking at the margins. A gender approach to the perception of ecosystem services through geotagged photovoice. In *Analysis of the social perception of ecosystem services on a peri-urban communal forest from northwestern Spain: a social-ecological approach*. Escola de doutoramento internacional. Programa de doutoramento en enxeñaría para o desenvolvemento rural e civil. PhD thesis, Chapter 5: 187-302. Lugo 2020
2. If you are interested in other types of visual expression methods have a look at the following video: [https://www.youtube.com/watch?v=rjL\\_lcmKiDg](https://www.youtube.com/watch?v=rjL_lcmKiDg)



# End

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