Identifying narratives for participatory integrated assessment of land management actions in the San Simon watershed

Anahí Ocampo-Melgar[1]; Scott A. Jones[1]; Barron J. Orr[1,2]

[1]Arid Lands Resource Sciences PhD Program, [2]School of Natural Resources and the Environment

THE UNIVERSITY OF ARIZONA.

Graduate Interdisciplinary Program in Arid Lands Resource Sciences

Background:

- Many efforts around the world to combat land degradation have not been evaluated. Without evaluation there is no learning and adoption of best practices.

- Restoring or managing landscapes is not only about facts and data, but also about the beliefs, values and perceptions people have about their local environment (Robertson et al. 2000; Moreira et al. 2006).

- It is necessary to include local and scientific knowledge for the participatory assessment of restoration and land management actions in arid and semi-arid lands (Bautista et al. 2010; Whitfield and Reed 2012).

- Land management evaluations tend to classify participants in common groups: **Researchers, practitioners/managers, and land users** because they share knowledge and perceptions. **Is the assumption of shared knowledge and perception valid?**

This study is part of the larger project "Participatory evaluation of past land management actions in the San Simon watershed in southeastern Arizona". Results presented are based on information collected during the first 2 steps of a 7 step framework.

Objectives:

- Identify agreement among and between stakeholder groups of past land management actions in the San Simon watershed.

- Determine narratives or justifications used by stakeholders when evaluating said actions.

- Relate stakeholders' land management evaluations with their identified narratives.

Study area:

- The San Simon watershed is one of the most dramatic examples of degradation in the Southwest.

- Long history of land management interventions:

  - 1919: Recognized by U.S. Senate as needing extensive and immediate restoration.

  - 1934: U.S. Grazing Service began five decades of various actions to combat land erosion, shrub encroachment, and arroyo-cutting.
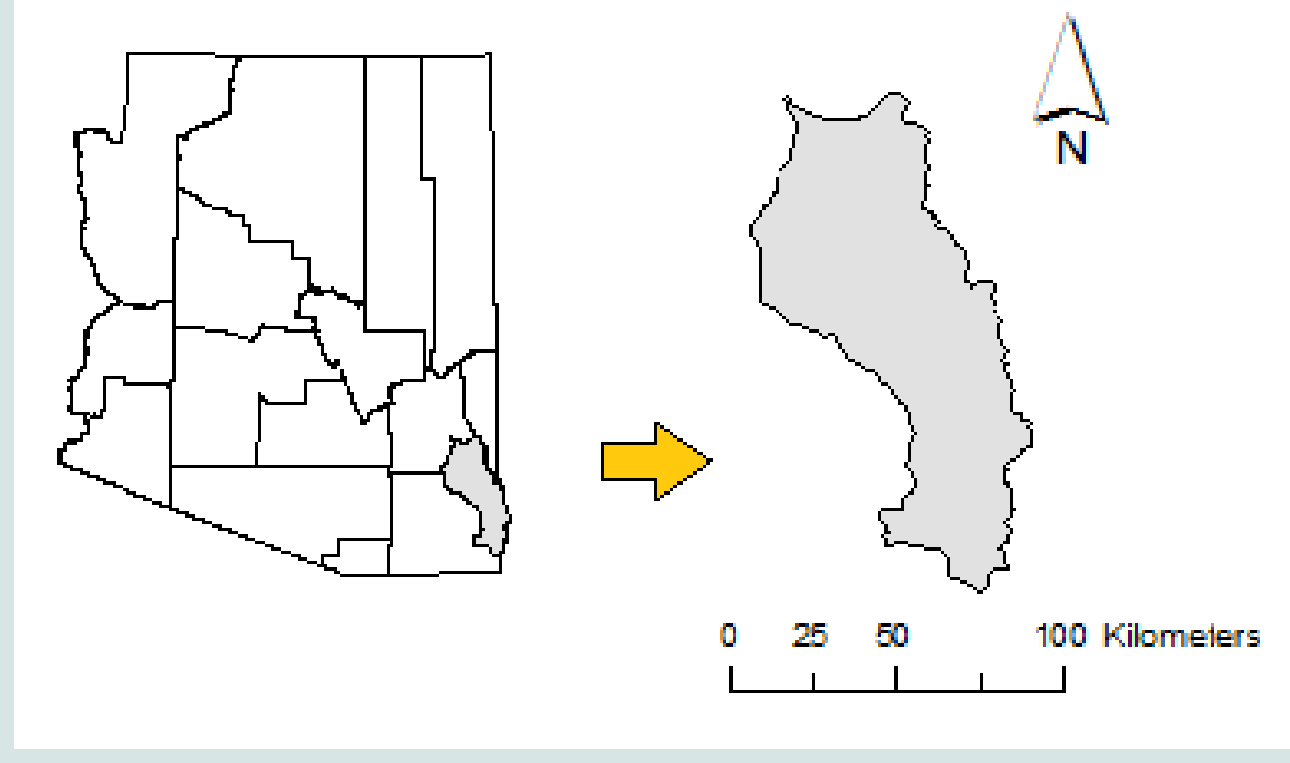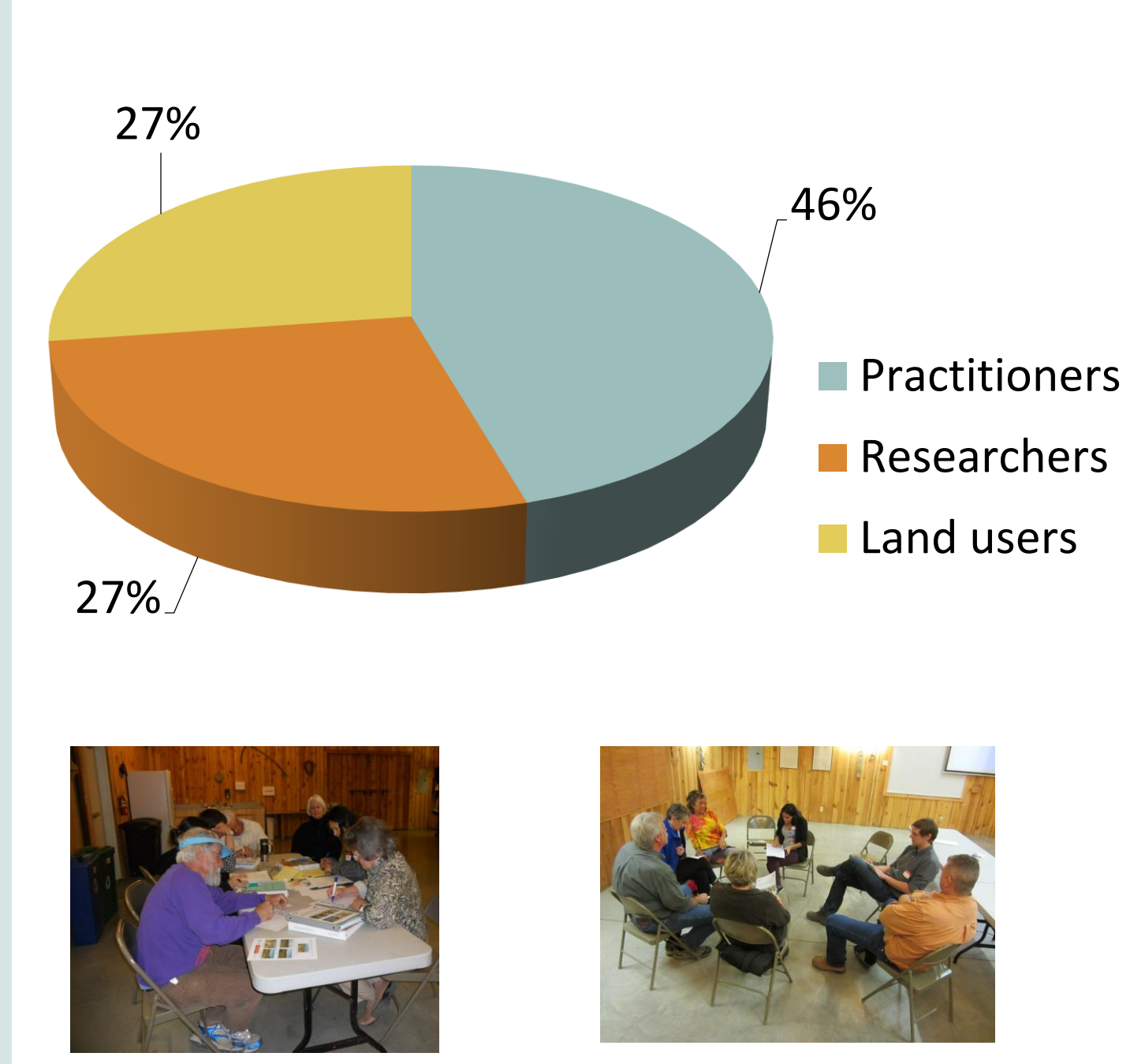

Methodology:

1) Semi-structured interviews with 33 stakeholders. (n=33): Practitioners, Researchers, Land Users

2) Respondents rated five land management actions:
   1 (very bad choice)- 5 (excellent choice).

3) Content analysis and post-coding of recurring themes or narratives used by the stakeholders:

   - **Historic:** historical descriptions of the San Simon watershed

   - **Cultural:** values placed on land uses (ranching or biodiversity conservation)

   - **Scientific:** science as a key factor in determining the success or failure of land management actions (biophysical constraints, climatic constraints, uncertainty, and requirement for long-term information and adaptive management).

4) Cluster analysis and cross-comparison of stakeholders based on their ratings and narratives.
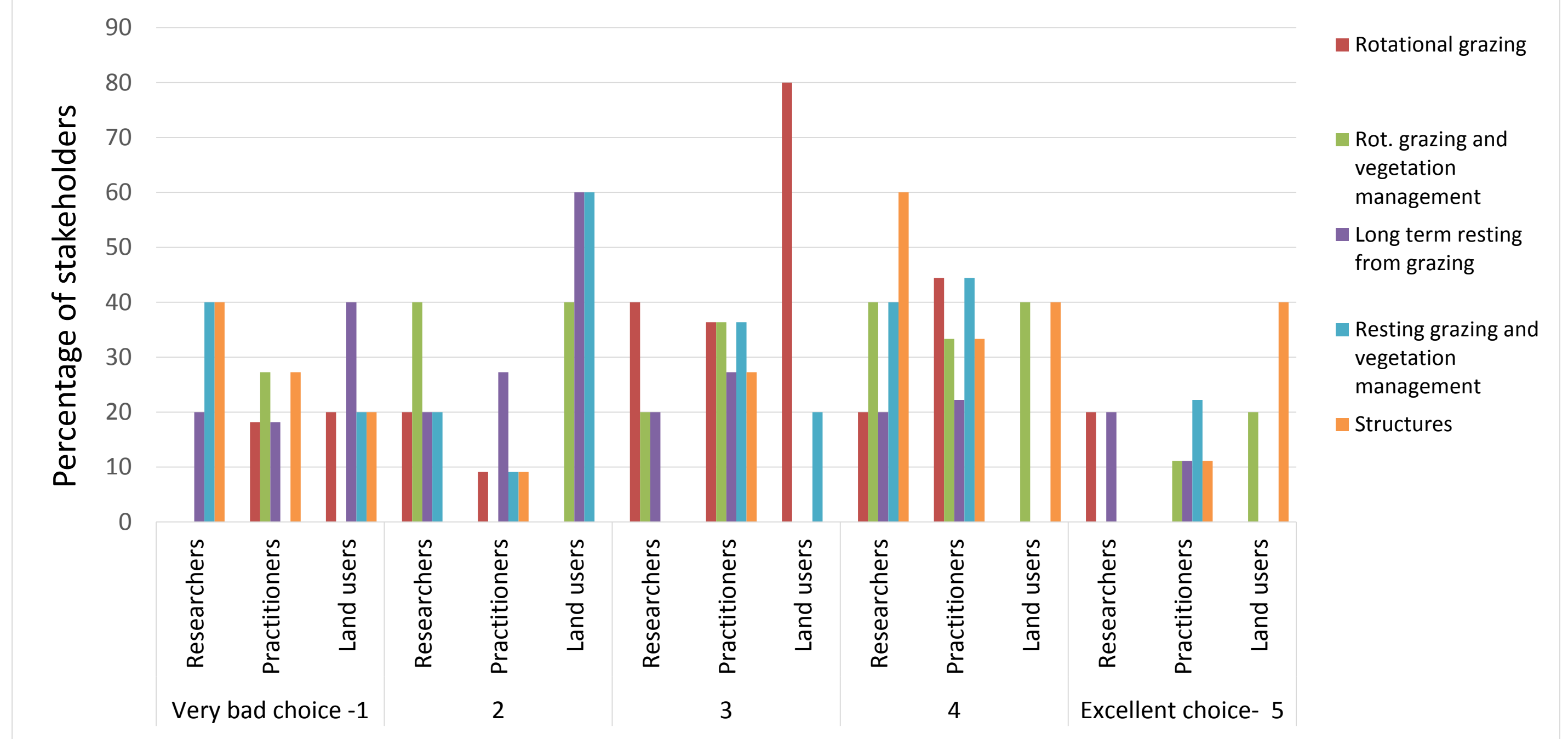
Five Land Management actions:

Rotational grazing

Rotational grazing with vegetation management

Long term resting

Long term resting with Vegetation management

Structures
(a) Large structures in the main channel and tributaries
(b) Smaller ones in small tributary channels

Results:

1) Types of stakeholder interviewed (N=33)

46% Practitioners
27% Researchers
27% Land users

2) Ratings for the five land management actions by group of stakeholder:

Legend: Rotational grazing; Rot. grazing and vegetation management; Long term resting from grazing; Resting grazing and vegetation management; Structures

3) Percentage of times narratives were used by stakeholders of different groups when evaluating land management actions.

Narratives	R	P	L
	-- %--		
Science	67	87	56
Historical	22	73	56
Cultural	33	60	44

(*) P, practitioners; R, researchers; and L, land users.

4) Cross-comparison of stakeholders based on their narratives and ratings: Are stakeholders of the same group coinciding in their narratives as in their ratings? (*)

Narratives cluster	Actions rates cluster			
	1	**2**	**3**	
1	11	2	2	P (27%) R (56%) L (44%)
2	9	0	0	P (33%) R (11%) L (33%)
3	8	3	0	P (40%) R (33%) L (22%)
	P (87%) R (67%) L (78%)	P (13%) R (11%) L (22%)	P (0%) R (22%) L (0%)	

Conclusions:

- Underlying narratives affect land management evaluations.

- Narratives and ratings of land management actions cut across stakeholder groups:

  - Historic narratives of the San Simon valley played an important role for individual stakeholders who supported more intervention.

  - Even when historic narratives were viewed as untrue, some stakeholders still supported grassland recovery based on the cultural narrative in the San Simon valley.

- Discussing individuals' interpretation of land management objectives and narratives influencing their ratings could help to reduce conflict in participatory evaluations of land management actions.
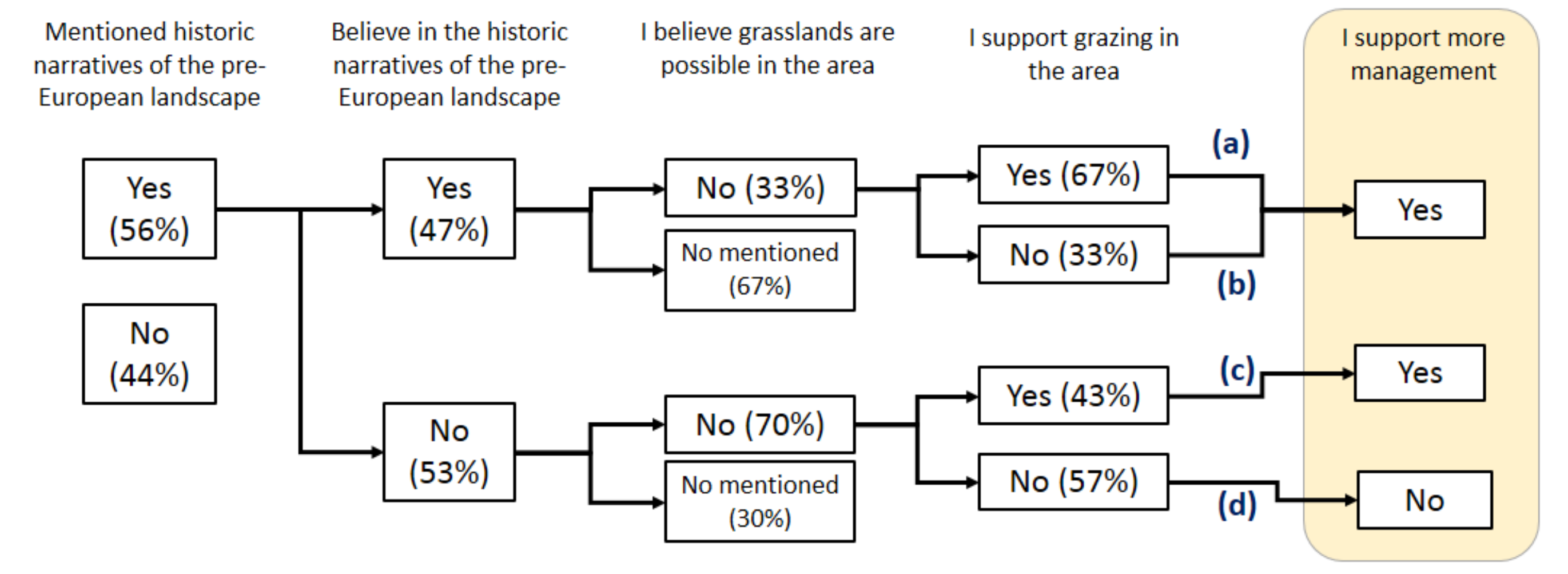
How are knowledge, perceptions and values intermixed in the land management evaluations:

a) Do not believe in possibility of grasslands in current conditions, but support grazing activities.
b) Do not believe the historical grasslands are possible, but want land management for conservation **not** for grazing.
c) Do not believe this was a grasslands in the past nor in the future, but support management for grazing.
d) Pessimistic on the San Simon recovery and the success of land management actions.

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