



# Public evaluation of the content and change of Scottish woodlands

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# Logical framework

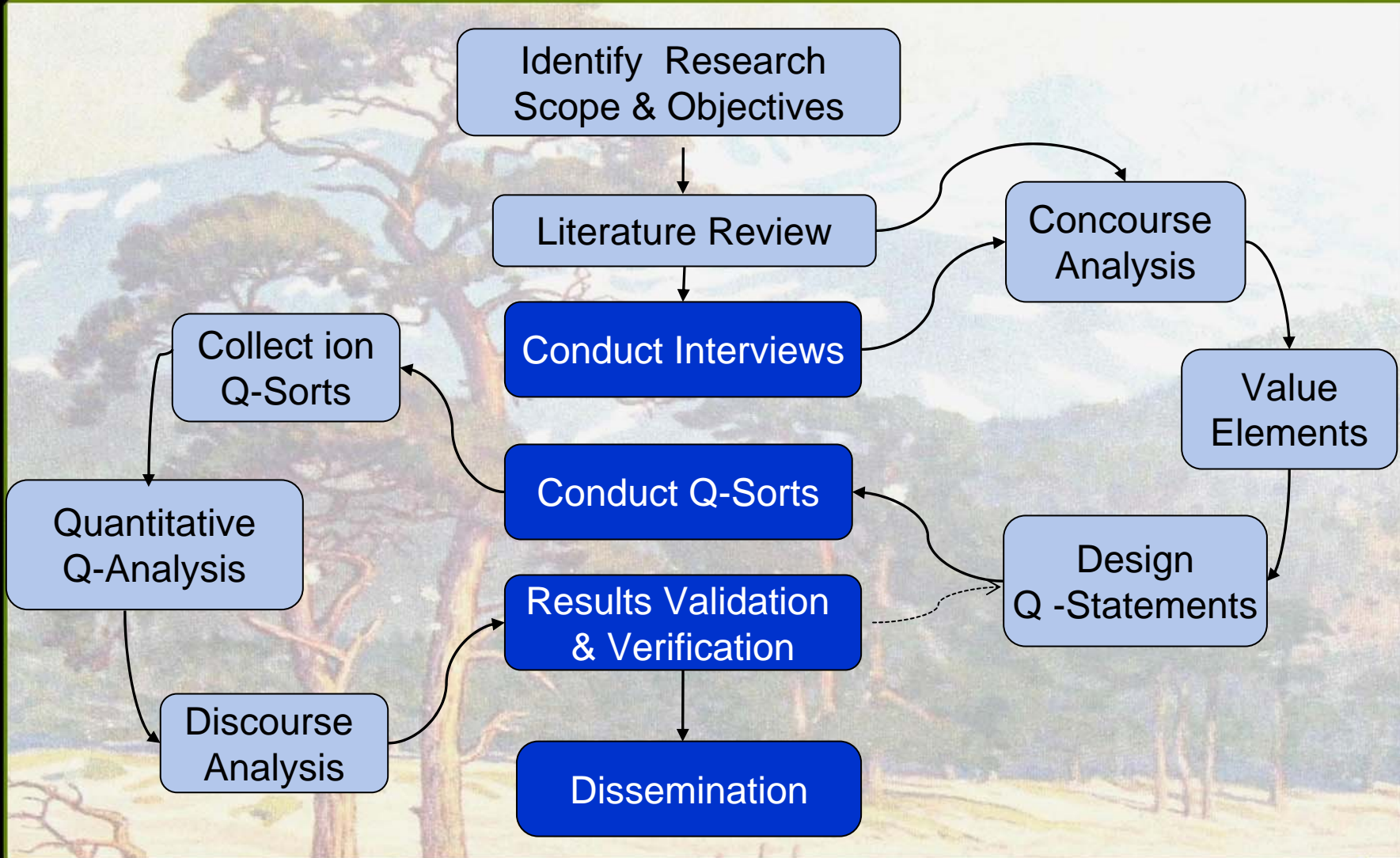
✓ We have elaborated the research tools & analysed woodlands integration in rural landscapes. This work resulted in identification of public & stakeholder priorities of rural changes; of land-use (LU) and forestry, and of landscapes & their components.

Phase 1: **SRD, LU & forestry (core & Visulands);**

Phase 2: **Landscape changes & components & the place of forestry in MF LU systems (core & Visulands);**

Phase 3: **Ecosystem functions & BD conservation in managed woodlands (core, AlterNet & ManForest)**

# Methodology



# Q-methodology

Q-method is “a *systematic & rigorous quantitative means* for examining *values & believes*” (Brown, 1996).

Focus: *anything that is difficult to quantify...*

Concern: *not how many people* believe... but *why & how* they believe what they do.

Q-method correlates “people with their views to *reveal the multiple points of view*”.

## Q-method enables:

- to reveal & explain attitudes & *perspectives from the standpoint of the persons* observed;
- to provide *insights into preferences*;
- to *identify criteria* that are important;
- to *explain factors* influencing attitudinal diversity;
- to outline areas of *consensus & conflict*;
- to specify, select & evaluate *policy options*.

# Procedure :

## Generation of statements:

- Naturalistic; ready-made or hybrid samples;
- Structured or unstructured by design.

## Q-sorting:

- Obtain responses to a statement from strongly agree to strongly disagree;
- Rank order the responses, placing the statements in the normal distribution chart.

**Approach:** survey or focus group

## Examples of statements:

**I support the creation of large areas of woodlands, but any new planting would have to be in tune with the character of the landscape.**

**We should be more self-sufficient in timber and be sure that our forests produce as much wood as possible.**

**I don't mind what type of trees gets planted or where - as long as it doesn't cost the taxpayer money.**

**Native woodlands are an important part of our natural heritage and should be preserved whatever the cost.**





## Quantitative analysis:

**Correlation, principle component (PC) analysis & computation of factor scores**

**Each Q sort is correlated with every other Q sort, and their inter-correlation matrix is then PC analysed.**

**Q-analysis allows to *extract a few typical sorts*, capturing the common essence of the several individual Q sorts.**

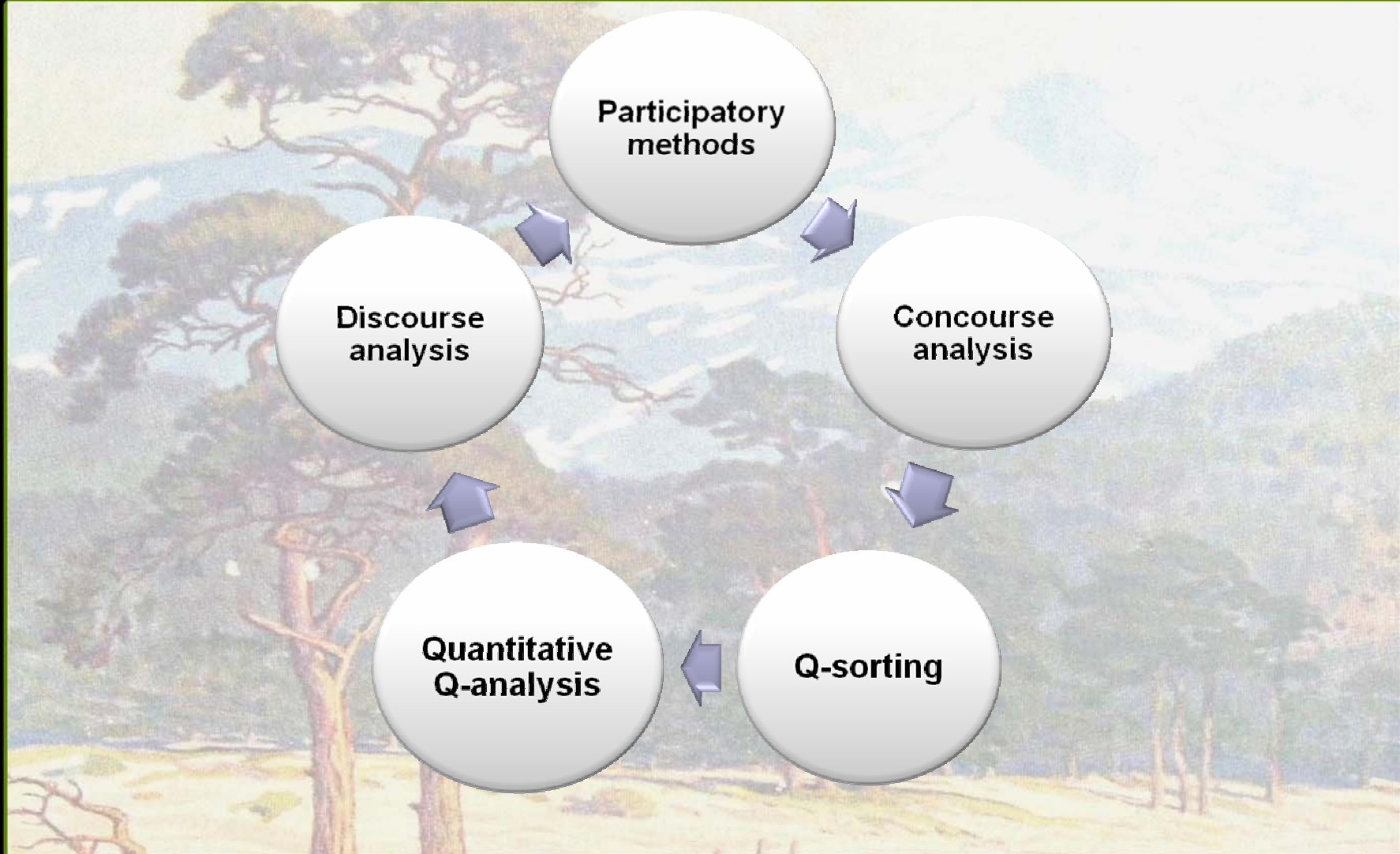
**Software packages are available.**

**Interpretation of the Q sorts: give the social discourses uncovered by the quantitative analysis**

**Contrast the value outputs with the socio-economic background of the respondents**

**Communicate the results to end-users**

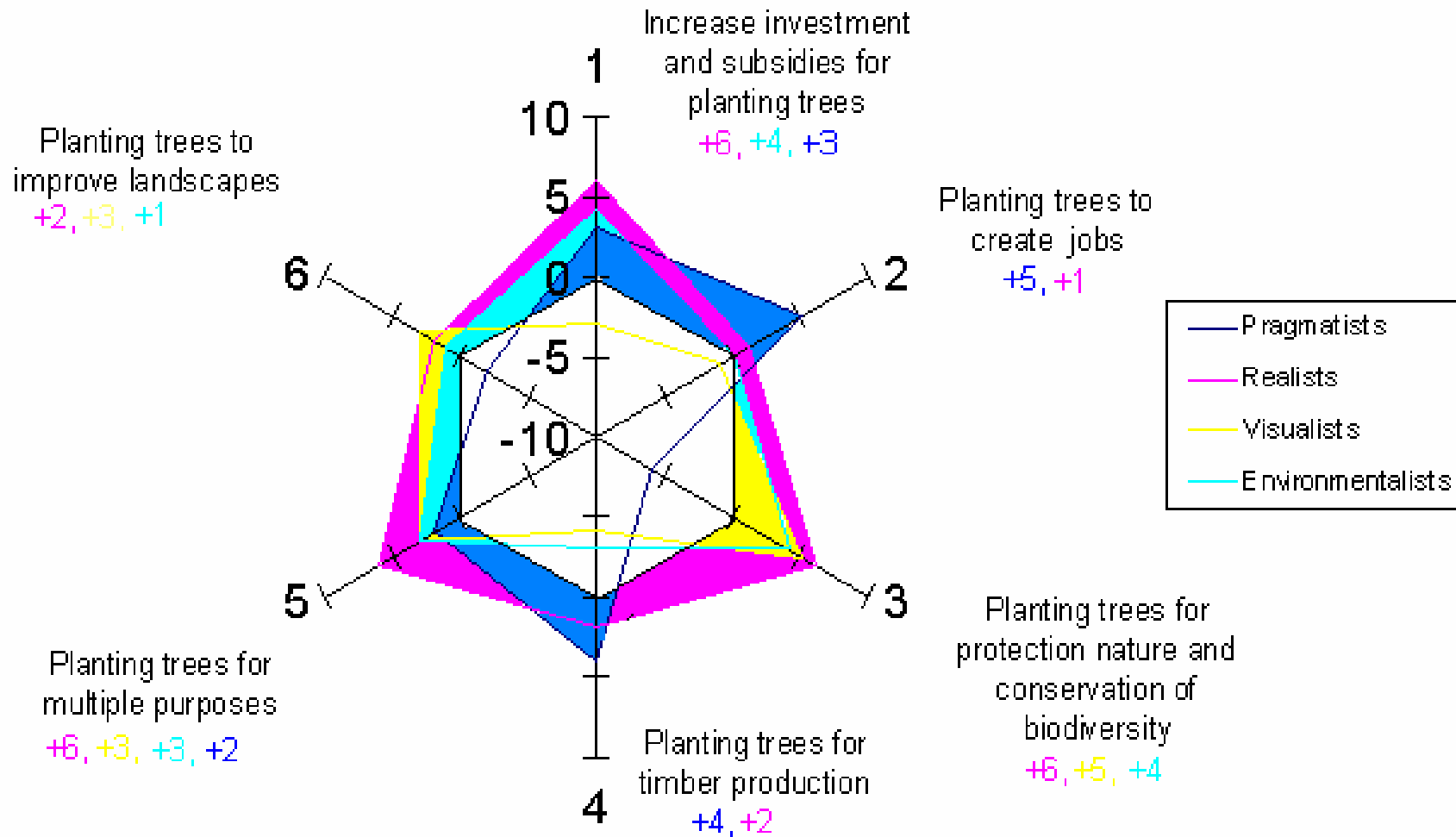
# The sequencing:



## A brief synopsis of the attitudes

<b>Group 1</b> <b>Pragmatists</b>	<b>support woodlands expansion for multiple purposes</b>
<b>Group 2</b> <b>Idealistic Visualists</b>	<b>preoccupied with aesthetic &amp; cultural values of rural areas</b>
<b>Group 3</b> <b>Radical Environmentalists</b>	<b>favour the intrinsic values of nature and are ecologically orientated</b>
<b>Group 4</b> <b>Progressives</b>	<b>stand for stable timber production and for conservation of native woodlands</b>
<b>Group 5</b> <b>Utilitarian Visualists</b>	<b>support tree-planting to improve landscapes and protect nature</b>
<b>Group 6</b> <b>Realists</b>	<b>concerned of social &amp; environmental impacts of tree planting</b>

# Analysing public attitudes to woodlands expansion: a focus on Scotland



# Results

- **General consensus: the necessity of enlarging of wooded cover** in Scotland.
- Six groups of attitudes (typical Q-sorts)
- People have a **strong emphasis on afforestation**, but whilst **groups 3 & 4 prioritise native woodlands over plantations**, the others don't really make any distinction between them.
- **Group 2 and 5 represent "Visualists"**.  
As an example, the defining sorts for these factors are in the table.

## Factor loadings [1] whilst analysing 2 & 5 groups' outlook [2]

QSORT	1	2	3	4	5	6
4	0.0939	0.0218	0.2364	0.4030	0.5295X	0.3374
18	0.3140	0.1362	0.0161	-0.1313	-0.5438X	-0.1370
19	-0.1088	0.6592X	0.1567	-0.3501	0.3556	0.0473
21	0.0771	0.6380X	0.3514	0.1228	-0.0503	0.4068
22	-0.3668	0.5107X	-0.0542	0.3301	0.1796	0.4389
27	-0.5363	0.7206X	0.0231	0.0254	0.1854	0.0349
28	-0.0100	0.7540X	0.0026	-0.0523	0.3468	0.1412
29	-0.0424	0.5319X	-0.0453	0.6254	0.0209	0.1502
30	-0.4273	0.5714X	-0.2308	0.0734	0.2459	-0.0301
31	-0.2516	0.6918X	0.0603	0.1509	0.3636	0.0292
32	-0.4882	0.6571X	0.0404	-0.3186	0.0416	-0.0484
33	-0.0799	0.7062X	0.0999	0.3507	-0.0129	0.1789
34	-0.3155	0.7507X	-0.2552	0.2752	-0.2595	-0.0506
35	-0.6386	0.5004X	0.0838	-0.3384	0.1117	0.1613
36	-0.4823	0.6988X	0.2856	0.1475	0.0685	0.0456
37	-0.5130	0.5978X	0.2290	0.2083	0.0002	0.2231
39	-0.3726	0.5778X	0.4196	-0.0786	0.0269	0.2283
40	-0.0934	0.5856X	0.2135	0.1058	0.2149	0.3004
47	0.0811	0.3408	-0.1226	0.3862	-0.5530X	0.3198
49	0.1001	0.4336X	-0.0004	-0.2117	0.2816	0.0053
52	-0.2405	0.1851	0.4000	-0.0810	0.5213X	0.1632
54	-0.1135	0.7025X	-0.1781	0.3496	-0.1546	0.1359
61	-0.3613	0.0477	0.0431	-0.0649	0.8515X	0.1981
62	-0.2739	0.1463	0.1410	0.2399	0.8458X	0.0731
63	-0.5370	0.0704	0.1115	-0.1059	0.7780X	-0.0880
64	-0.3690	0.1099	0.1429	-0.0404	0.8299X	-0.0090
65	-0.3660	0.1969	0.1534	-0.1992	0.7759X	0.0591

% expl.Var. [3]	27	14	7	8	10	7
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[1] An individual's loading on a factor is a correlation coefficient that indicates the extent to which each Q-sort is similar or dissimilar to the composite factor array. A positive loading indicates that the person shares subjectivity with others on that factor, whilst negative is a sign of rejection of the factor's perspective.

[2] X indicates a defining sort. Dominating indicators are those with factor loadings  $\geq 0.5$  or  $\leq -0.5$ ;

[3] % expl. var. means that the first factor explains 27% of the variation, the second factor explains 14% of the variation and so on, and this is when all Q-sorts are considered.

## Distinguishing statements for factor 5

	Rank
9 I support the creation of large areas of woodlands, but any new planting have to be in tune with the character of the landscape.	+3
12. Because woodlands improve the landscape, I support policies that pay landowners to plant trees on their land.	+2
11. The rights of people to enjoy the beauty of the countryside are more important than making profits from the land.	+1
22. The creation of forest plantations is to be promoted if provides employment opportunities in remote rural areas.	-2

Item rankings: -3=most unimportant; 0=ambivalent; =3=most important.



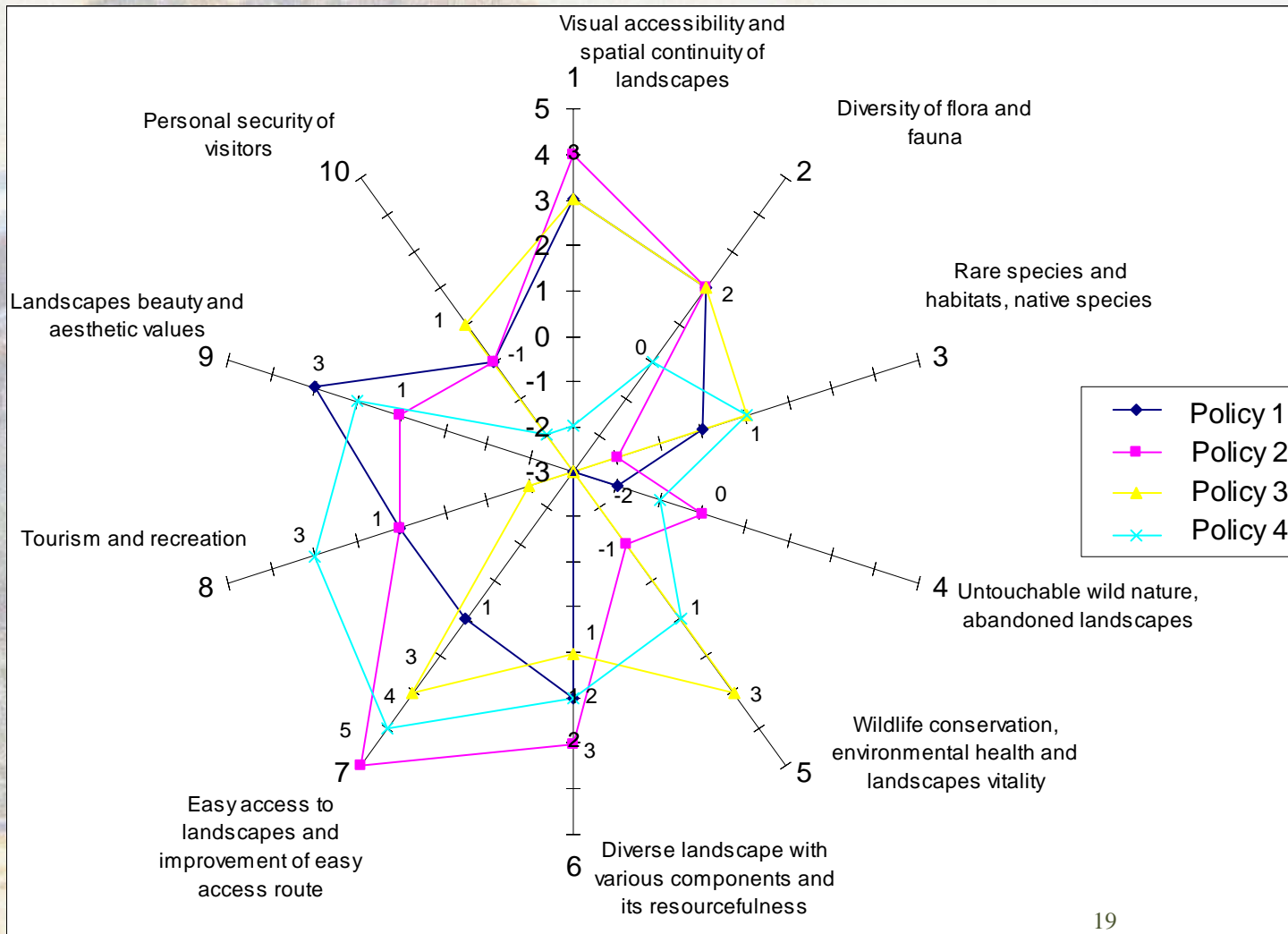
***Visualists*** are largely scientists or highly educated civil servants of a middle age, women, or men with children, who are well enough paid, yet care for money.

***Utilitarian Visualists*** are both women and men of different ages and high salaries, often senior researchers and seldom businessmen or farmers.

## Possible policy directions for landscape changes

- **More** investments in landscape management to attain a proper balance between nature preservation and socio-economic development;
- **Shift** of efforts and new investments to improve landscapes and to enhance nature protection;
- **Shift** towards enhancement of farming activities and of urbanisation, with the development of infrastructure and socio-economic development;
- **Shift** towards overall socio-economic development of rural areas to improve life of local communities.

# Public evaluation of landscape components & characteristics

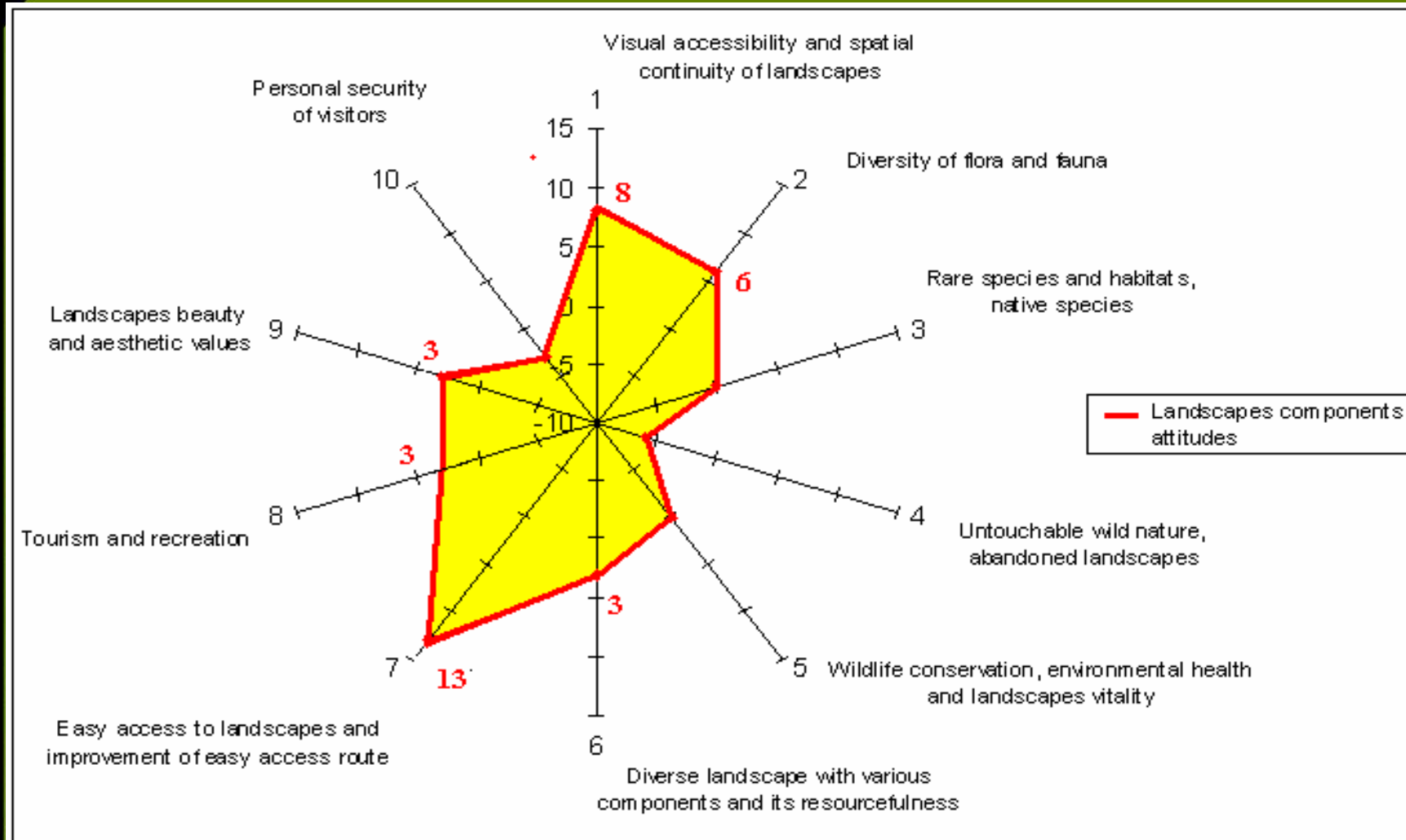


## Preferable physical/other components of landscape changes across the identified policy directions

For the first (balanced) policy direction:

- landscape beauty and high aesthetic values (+3),
- landscape visual accessibility and spatial continuity(+2),
- diversity of landscape components and their resourcefulness (+2),
- diversity of flora and fauna (+2),
- landscapes openness for tourism/recreation (+1),
- accessibility to the countryside, with the improvement of access routes in rural areas (+1).

# A synopsis of the distinguished components of woodland integration in landscapes



# Conclusions

- **The research provided additional evidence that when “input from communities is important, Q-method is unique as its results are driven by the public, and all at once they are systematic and statistically rigorous” (Barry & Proops, 1999).**
- **Public engagement in consultation; identification & explanation of public priorities for multi-functional forestry by using the Q method provided insights into social choices to support decision-making.**

# Conclusions

**All identified groups of public attitudes observed in this research have the emphasis on woodlands regeneration.**

**The attention is paid to the importance of aesthetic values of landscapes, people's rights to enjoy their beauty and to the necessity of attracting tourists in the remote areas.**

**This particular research indicates that people somewhat prefer natural woodlands over monoculture plantations, and native species over invasive.**

**Overall, this research signify a consensus on the necessity of the development of woodlands in Scotland, as offering a wide range of benefits to the people, environment, and to the economy.**

## Appendix 1:

### Factors that set Q method apart from R method

- R-analysis (standard survey analysis) is concerned with patterns across *objective* variables (gender, age, income, etc) and yields statistically generalisable results. Q-analysis deals with patterns of *subjective* perspectives across individuals and results in typologies of perspectives that prevail in a given situation.
- With R-method, correlation summarizes the *relationships among the traits* and then factor analysis denotes the clusters of traits. Q-method allows individual responses to be collated and correlated. With Q-method, correlation summarises the *views among people*. Resulting factors represent points of view.
- Q-method employs *small number of respondents*, because most of the data derives not from the number of participants, but from how much info is implicit in each participant's Q sort.



# Appendix 2:

## Q-sample design

A. Directions	a) weak sustainability	b) strong sustainability	
B. Dimensions	c) environmental (biodiversity)	d) social (aesthetics)	e) economic (productivity)
Combinations:		ac ad ae bc bd be	
(A)(B) = (2)(3) = 6			
Replication number (m) = 4			
Q-Sample N=(A)(B)(C)(m)		N = (2)(3)(4)= 24	