



Linking multifunctional forestry goals with the legacy of spruce plantations: a Q-method inquiry into the content and changes in Scottish forestry



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- **Deforestation (early and intensive)**

20th century – the forested area <5%

1919 – UK state forest service (FC) established

- **Commercial planting of Sitka spruce (SS)**

Justification (Warren, 2002): productive & easily managed; straight-edged plantations min fencing costs; large areas bring economies of scale; hardy species needed for establishing ES on degraded sites

By 2000, the forest area trebled

However, 70% of forest– coniferous (47% - SS);
50% trees less 30 years old

Today, the wooded cover is 18%, low to compare with other EU countries

- ‘Preservationist’ position
- Multifunctional forestry (MFF)

UNCED (1992) – Non-Binding Forest Principle:

“forest should be sustainably managed to meet social, economic, ecological, cultural & spiritual human needs of present and future generations”

Scottish Forestry Strategy (2000 & 2006)

- Max value of the wood resource
- Create a diverse resource
- Positive contribution to ENV
- Opportunities for more people to enjoy forests
- Help communities to benefit from them

What's MFF?

- **Vertical MF**, with each lot of land or forest stand fulfilling two or more functions (Dana, 1943).
- **Horizontal MF**, when different areas are dedicated to different functions (Pearson, 1944).

The vertical vision dominates, but horizontal has its advocates (Vincent & Binkley, 1993).

Bowers & Krutilla (1989) – forest can produce a list of outputs, many of which are complementary.

Sedjo (2004) puts forward specialization in MFF.

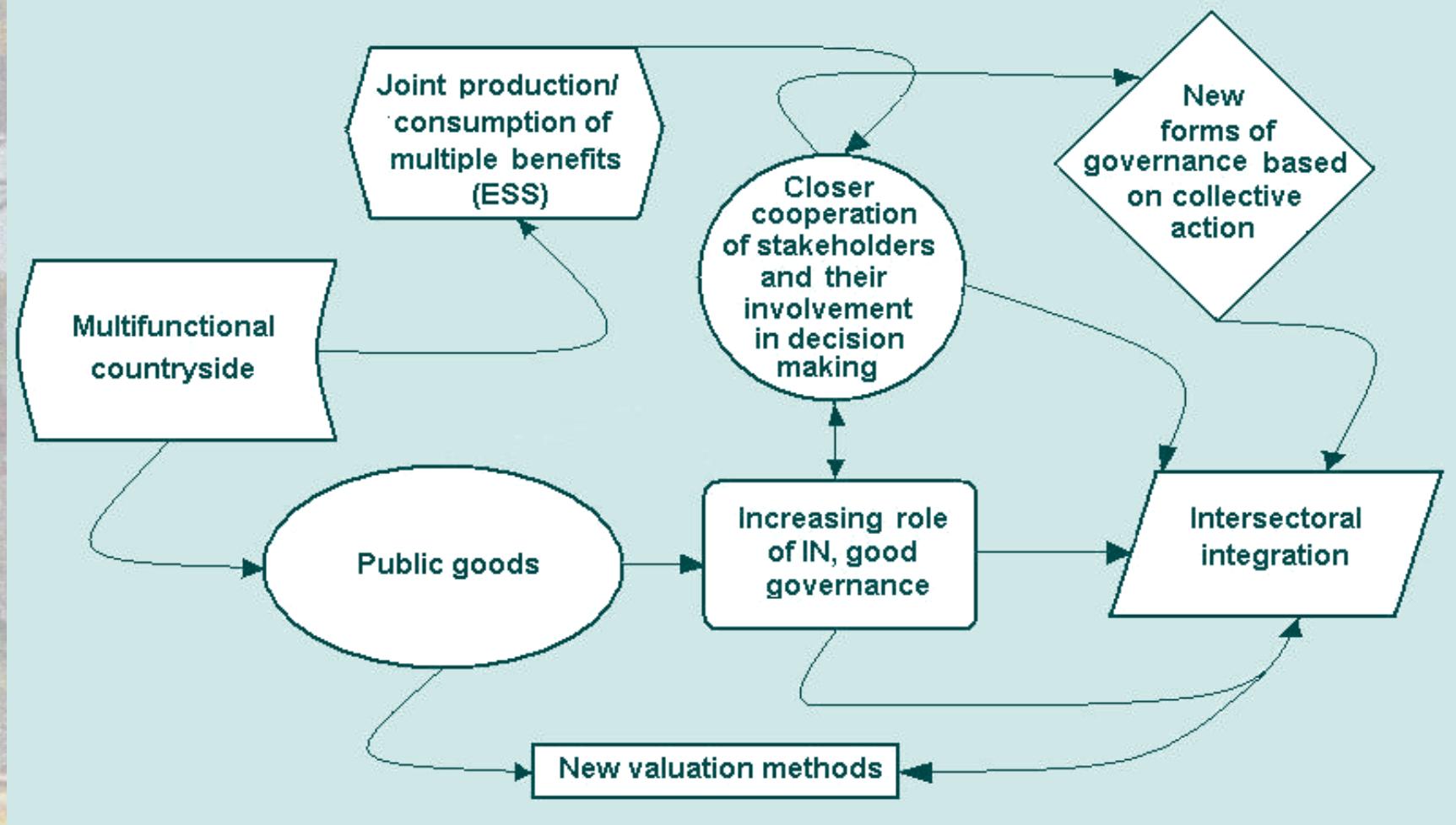
A characteristic of MFF is a change in emphasis from commodity to non-commodity outputs: from max production of material goods to broader objectives of provision of multiple ecosystem services, ES
(Mather, Hill & Nijnik, *Jour. Rural Studies*, 2006, 22: 441-455)

- **Provisioning**
- **Regulating**
- **Supporting**
- **Cultural and social**

MFF was analysed in terms of (i) policies & institutions (ii) empirical evidence and (iii) stakeholder attitudes

Understanding multifunctionality

- Joint production of multiple outputs
- Non-commodity outputs may be public goods (OECD, 2002):



Why new methods are needed?

- ✓ **Public goods** and **market failures**.
- ✓ In the mainstream economics: **preferences** are **fixed & stable**.
The value **system** & **institutions** are **exogenous**. Their role in achieving optimal outcomes is neglected.

However, end-users engagement is now becoming crucial. There is **interdependent decision-making**. There are **transaction costs** & **endowment effects**.

People usually **care**, they are not just rational agents, and they are not always **competitive**.

It is important therefore to incorporate behavioural, institutional and experimental economics, interdependent decision-making, dynamics, endowment effects etc. in ES valuation models.

The need to deal simultaneously with multiple objectives, activities/processes, and multiple forest ES & multiple stakeholders/end-users has led to the importance of participatory techniques.

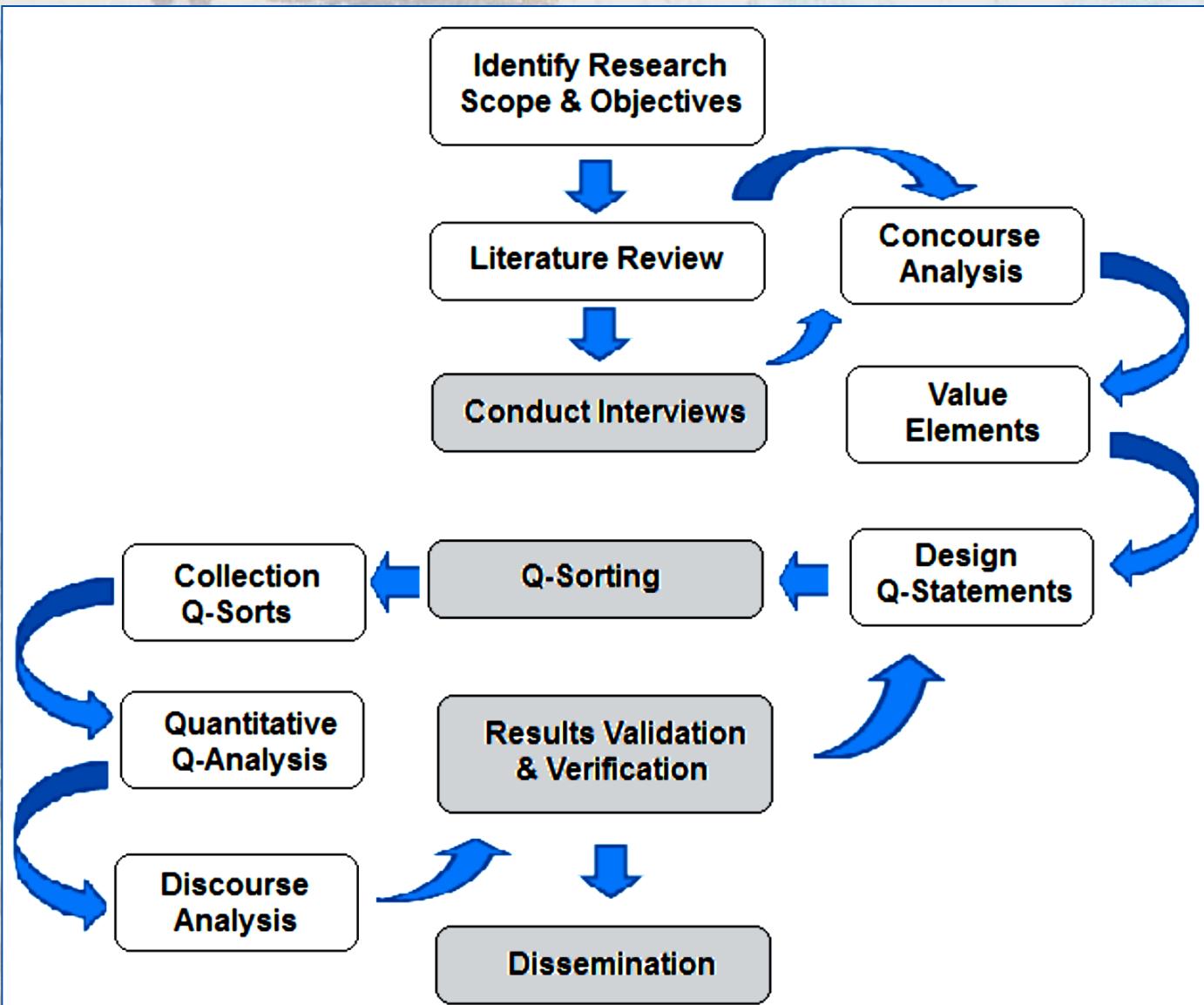
Q-Methodology:

- Q-method (Stephenson, psychologist): ‘a systematic and rigorously quantitative means for examining human subjectivity’
- Concern is *not with how many people* believe such and such, but *why* and *how* they believe what they do
- Anything that’s difficult to quantify: attitudes, policies, participation etc can be addressed
- It allows us to reveal the multiple points of view, i.e. the attitudinal groups that exist, and explain what influences their heterogeneity

Q-method application enables us to:

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

Key steps in a Q methodology study:



Identification of stakeholder priorities:



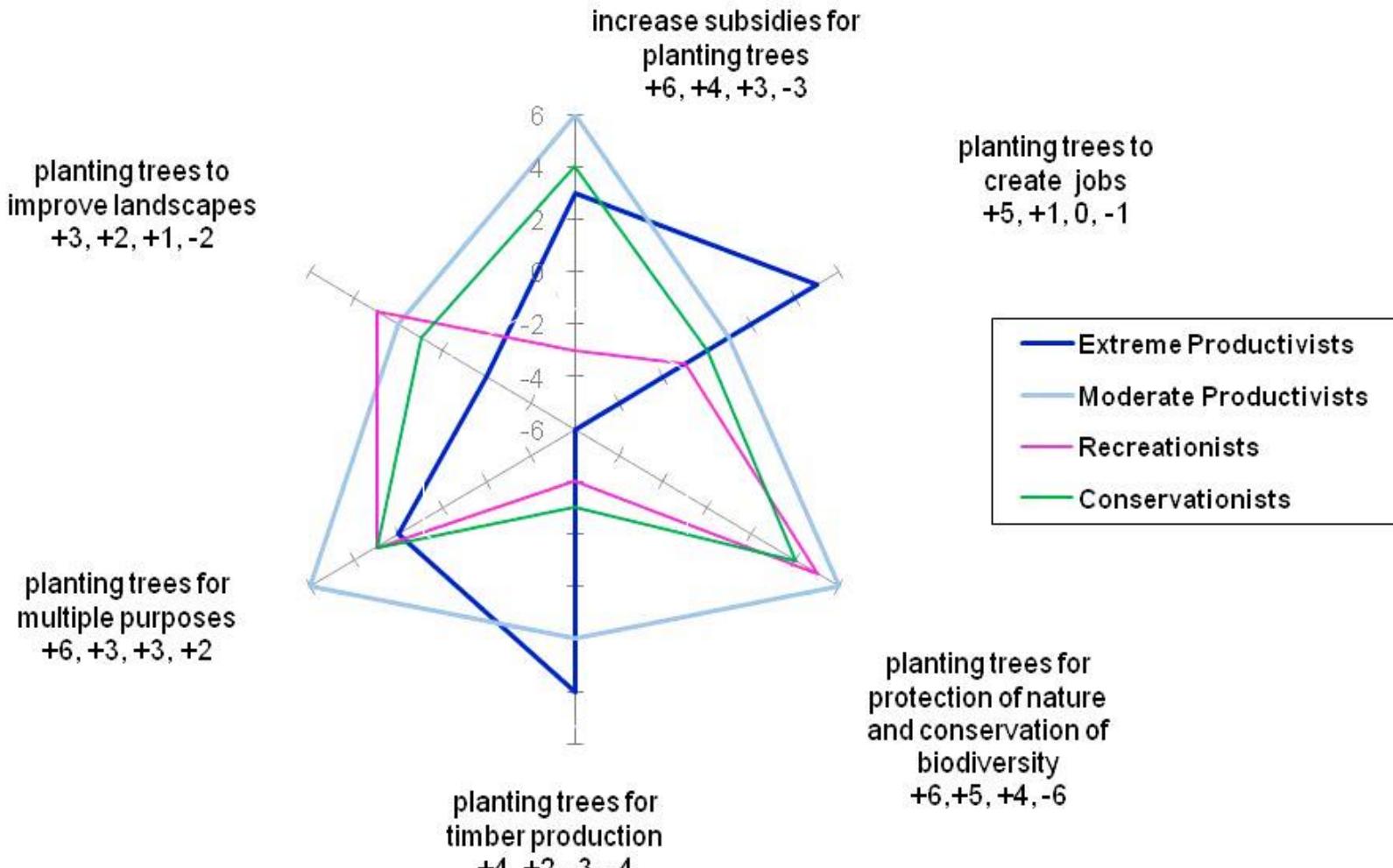
Stage 1: Public evaluation of the role and place of woodlands in the development of countryside

Stage 2: Stakeholder evaluation of landscape changes and components

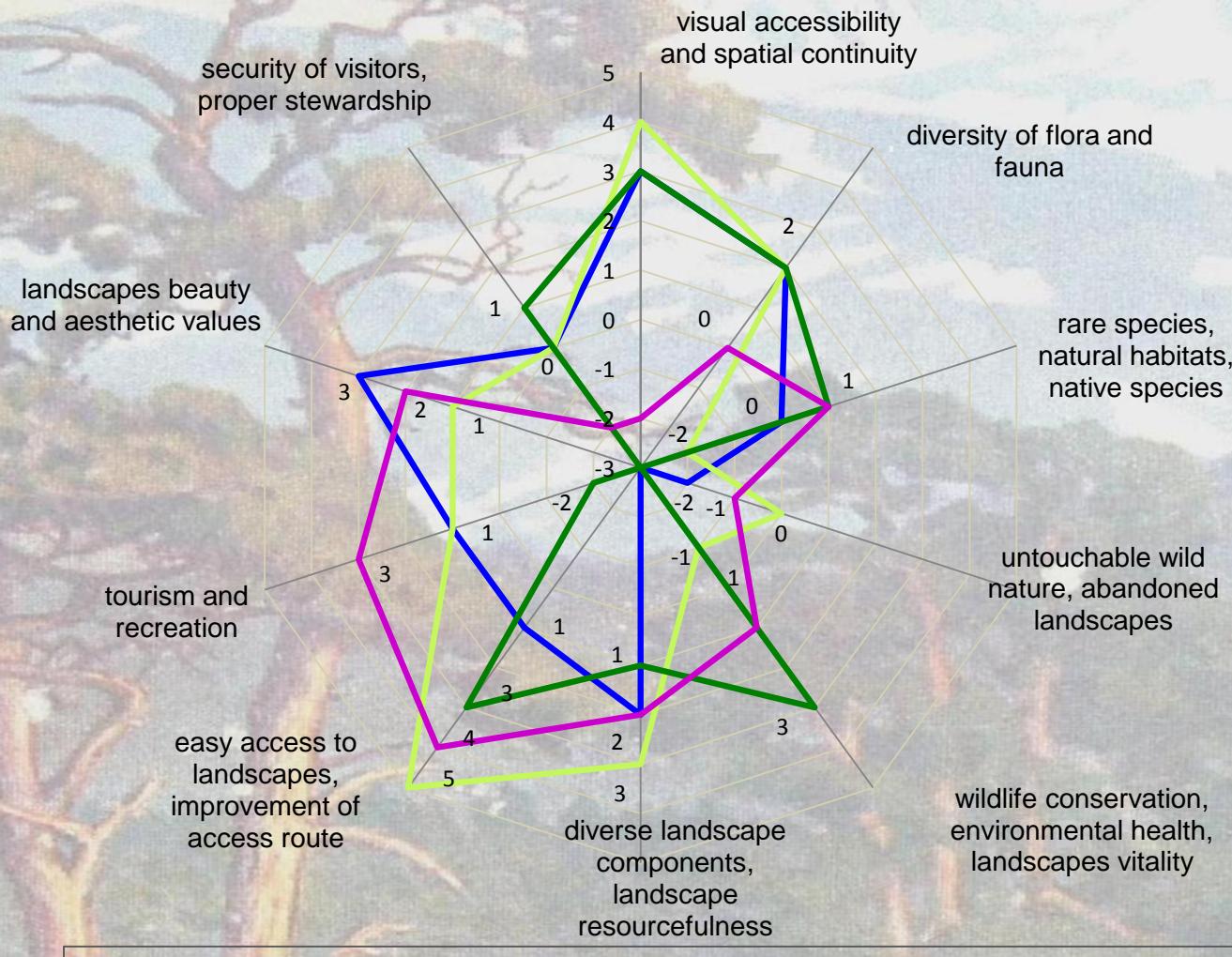
Stage 3: Stakeholder evaluation of ES in MFF

- ✓ Balance stakeholder interests
- ✓ Identify conflicts to avoid & manage them
- ✓ Incorporate perceptions into policy design

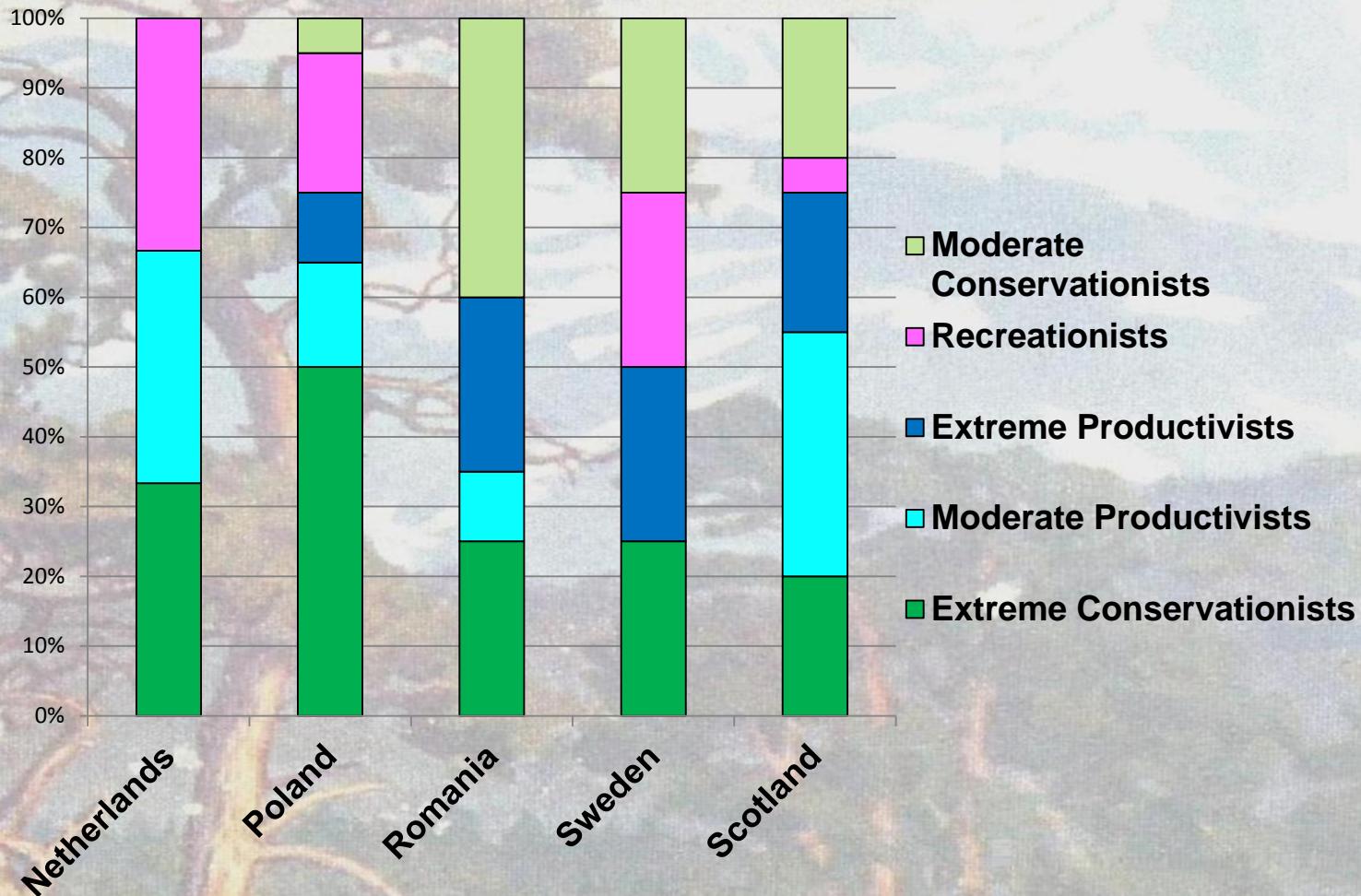
An insight into public attitudes to woodlands expansion in Scotland:



Stakeholder evaluation of components and characteristics of wooded landscapes:



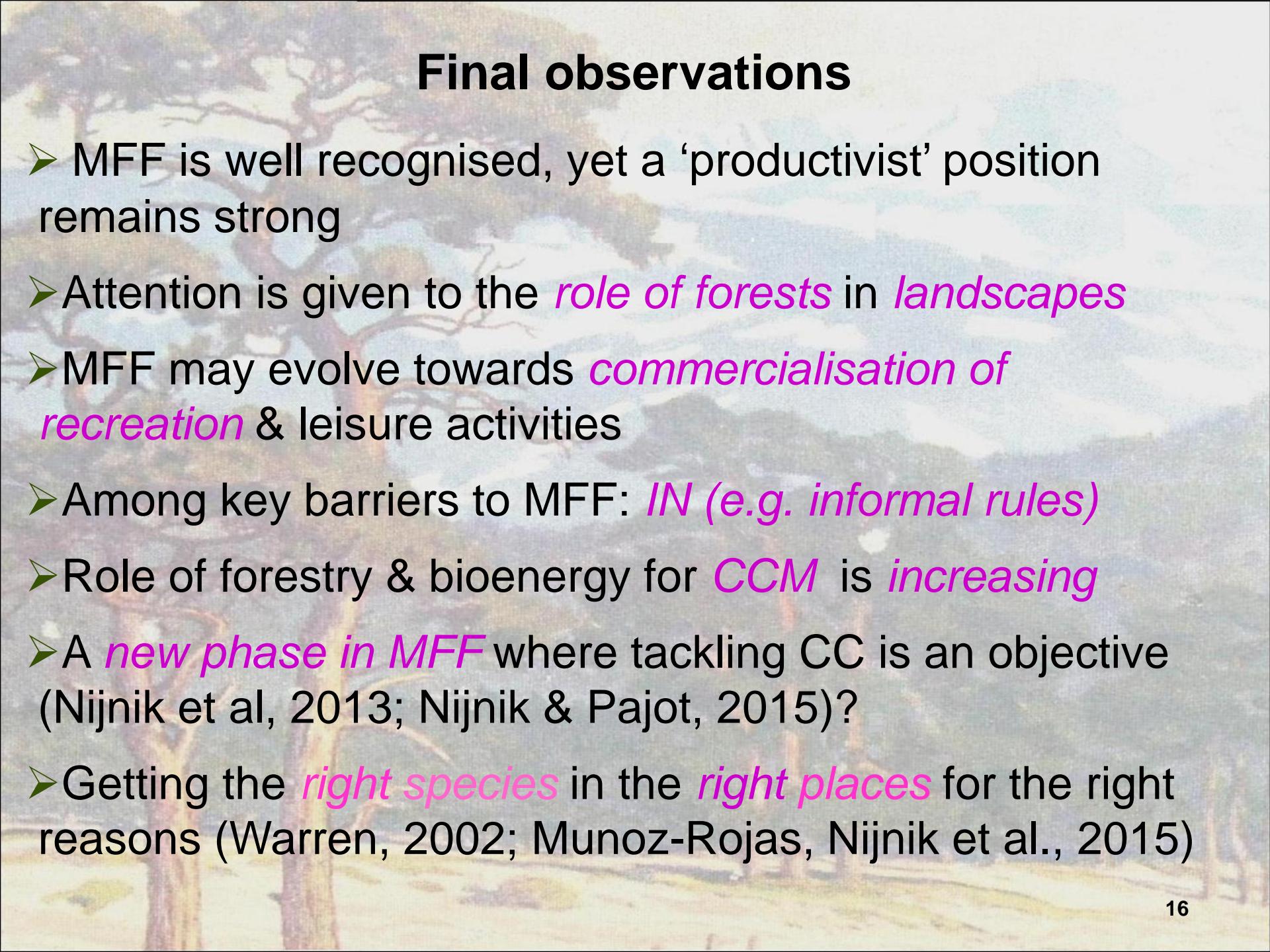
Distribution of the groups (%):



Note: each column totals 100%, showing the percentage of respondents which belong to different attitudinal groups in each of the countries analysed

Selected results of a Q-study for Scotland:

- ✓ Although the attitudes are diverse, there is public understanding of the necessity *to enlarge wooded cover*, improve landscapes and biodiversity
- ✓ Some people *prioritise native woodlands* over plantations, others don't really make any distinction
- ✓ Attention to *aesthetic landscape values*, our rights to enjoy beauty and attract tourists to remote areas
- ✓ Attention to new *employment* (e.g. re tourism, bioenergy)
- ✓ *Easy access, visual accessibility & landscape continuity* are important considerations
- ✓ *Positive relationship*: education, occupation, work experience and the support to woodlands expansion



Final observations

- MFF is well recognised, yet a ‘productivist’ position remains strong
- Attention is given to the *role of forests* in *landscapes*
- MFF may evolve towards *commercialisation of recreation* & leisure activities
- Among key barriers to MFF: *IN* (e.g. *informal rules*)
- Role of forestry & bioenergy for *CCM* is *increasing*
- A *new phase in MFF* where tackling CC is an objective (Nijnik et al, 2013; Nijnik & Pajot, 2015)?
- Getting the *right species* in the *right places* for the right reasons (Warren, 2002; Munoz-Rojas, Nijnik et al., 2015)