



**University of Natural Resources
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Innovation Policy

IP INNO-FOREST, 5 September 2006, Zvolen
Anja Bauer

Overview

- u What is the role of policy in promoting innovation?
- u How does forest policy address innovation?

Structure

- u Innovation policy in general
 - u Policy Reactions
 - u Systemic Innovation Policy
- u Innovation policy in forestry – Empirical results
 - u Understanding and importance of innovation
 - u Support for innovations
 - u Impediments



Innovation & Entrepreneurship General Policy Reaction

- ▶ European Union
 - Lisbon Strategy on competitiveness & innovation
 - EU Research Framework Programmes 6 & 7
 - EU Research Project Lines and infrastructures
- ▶ National Policies and Strategies
 - Ministries or Agencies on Innovation
 - Funding programmes and initiatives
- ▶ Often focus on growth promising high-tech sectors



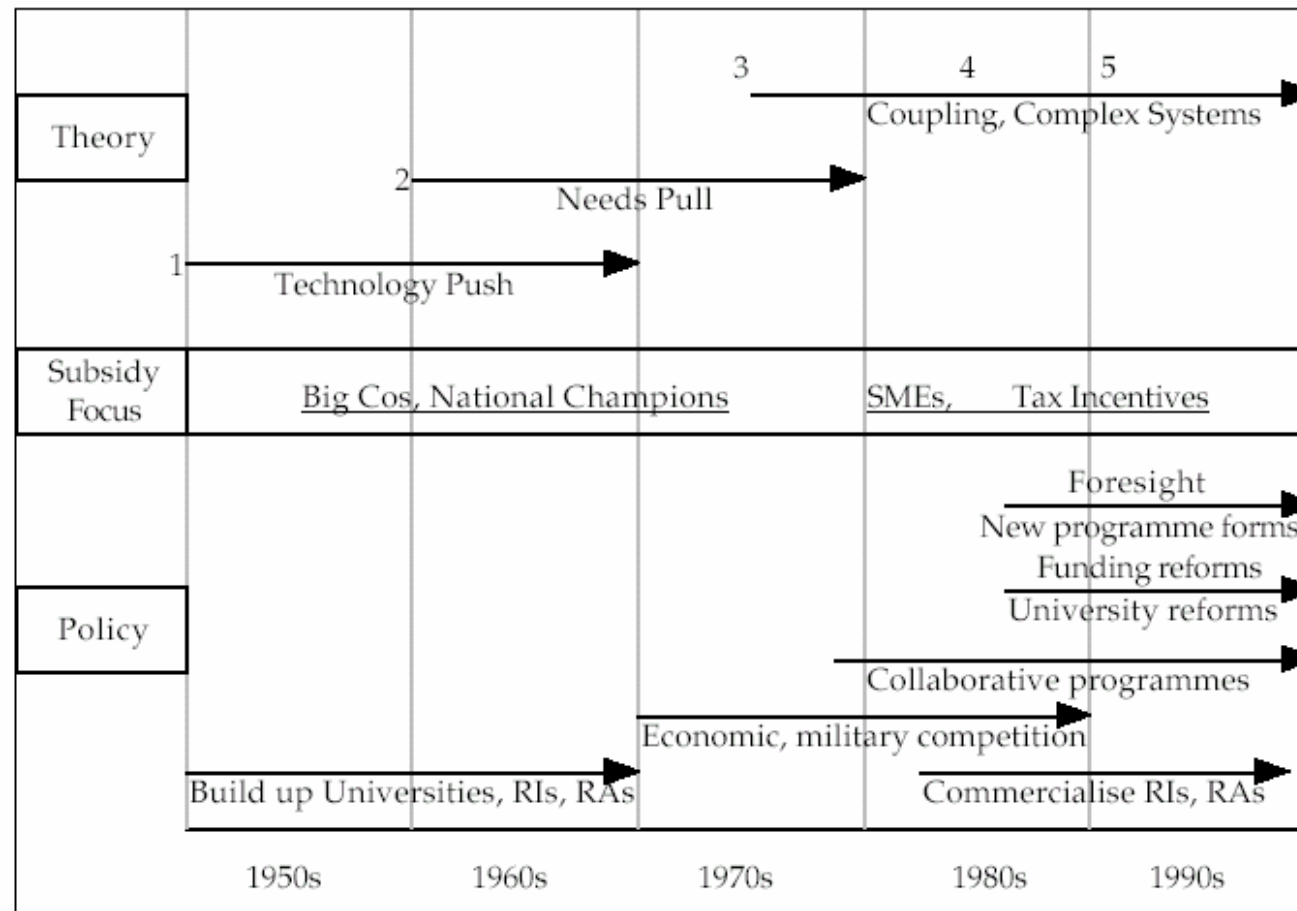
Innovation & Entrepreneurship Forest Sector Policy Reaction

- ▶ European Union
 - Forest-based Sector Technology Platform “Innovation & Sustainable Development” initiative
 - New institutions, initiatives & programmes in new areas (e.g. Bioenergy, Carbon)
- ▶ MCPFE
 - Vienna Resolution 2 on economic viability of SFM & work programme element “competitiveness & innovation”
- ▶ UNECE/FAO
 - European Forest Sector Outlook Study conclusions: competitiveness as key issue
- ▶ National Policies and Strategies
 - Rather new topic, few coherent policies & programmes (one exception: Finland)
 - Focus on specific topics, partly by actors outside forest sector



Phases in Innovation Policy

Exhibit 3 Post-War Shifts in Theory, Subsidy and RTD Policy



Arnold 1998



Systemic Innovation Policy

- u From market failure to system failure rationale
- u Systemic failures = mismatches between the elements in the innovation system
 - u **Capability failures**: inadequacies in potential innovators' ability to act in their own best interests
 - u **Institutional failures**: Failure to (re)configure institutions so that they work effectively within the innovation system
 - u **Network failures**: These relate to problems in the interactions among actors in the innovation system
 - u **Framework failures**: background conditions, such as sophistication of consumer demand, culture and social values
 - u **Learning failures**



Systemic Innovation Policy

- u Government as **facilitating actor** in innovation system
- u Key role for policy making is '**bottleneck analysis**'
- continuously identifying and rectifying structural imperfection (research councils, innovation agencies)
- u Shift from subsidies of firm level R&D to developing appropriate framework conditions for firm-level innovation performance and diffusion, to facilitating the emergence of new opportunities



Systemic Innovation Policy

- u Non-optimising, adaptive and learning-based policy-making:
 - u Shift from optimizing policy-maker to the adaptive policy maker
 - u No single optimal public policy
 - u Policy learning as integrated part of the policy making process
- u Need for co-ordination mechanisms
 - u between ministries
 - u between ministries and other public agencies
 - u and between them and other stakeholders



Innovation Policy Mix

- u Innovation policies more complex
- u Science Policy
- u Technology Policy
- u Education Policy
- u Labour Market
- u Industry Policy
- u Framework Policy
- u Environmental Policies
- u Rural and Regional Policy
- u Other Sectoral Policies



Education Policy

- u Education Institutions & programmes:
 - u Graduate Schools
 - u Polytechnics
 - u Vocational Schools, apprenticeship
- u Linkages Education - Economy
 - u Support from Polytechnics to companies
 - u Lifelong learning initiatives and adult education
 - u Student placements
 - u Promotion of positions for graduates
 - u Innovation and entrepreneurship courses



Science Policy

- u General:
 - u Universities and public research laboratories
 - u Internationalization of research
 - u Targeted public R&D programmes
 - u Support for young scientists
 - u Improvement of PhDs and post-doc research

- u Industry – Science Relationships:
 - u Collaborative R&D programmes
 - u Spin-offs promotion
 - u Researchers mobility schemes
 - u Science parks, technopoles, centres of excellence, competence centres



Technology Policy

- u Public support for R&D in companies
- u Public support for private R&D consortia
- u Tax incentives for R&D
- u Risk and seed capital funds
- u Co-operative private R&D projects
- u Supply-chain programmes
- u ...



Framework Policies

- u Intellectual Property Rights
- u Competition rules
- u Functioning of markets
- u Venture capital markets
- u ...



Regional and Rural Policies

Regional Policy

- u Clusters programmes
- u Regional growth initiatives
- u Technology parks
- u ...

Rural Policy

- u Diversification of employment in rural areas
- u Technology Transfer (ICT) and Infrastructure
- u Development of microbusinesses
- u Integrated Rural Development
- u Bottom-up processes
- u ...



Challenges for Systemic Innovation Policy

- u Danger of fragmentation of innovation policy: need for intra-government policy coordination (horizontal)
- u Increasing role of regions for innovation: need for vertical policy coordination
- u More efficiency through coherent strategies rather than isolated instruments
- u Need for more policy intelligence
 - u monitoring and evaluation of policies
 - u sound analyses of innovation systems
 - u benchmarking practices
 - u long term views, foresight

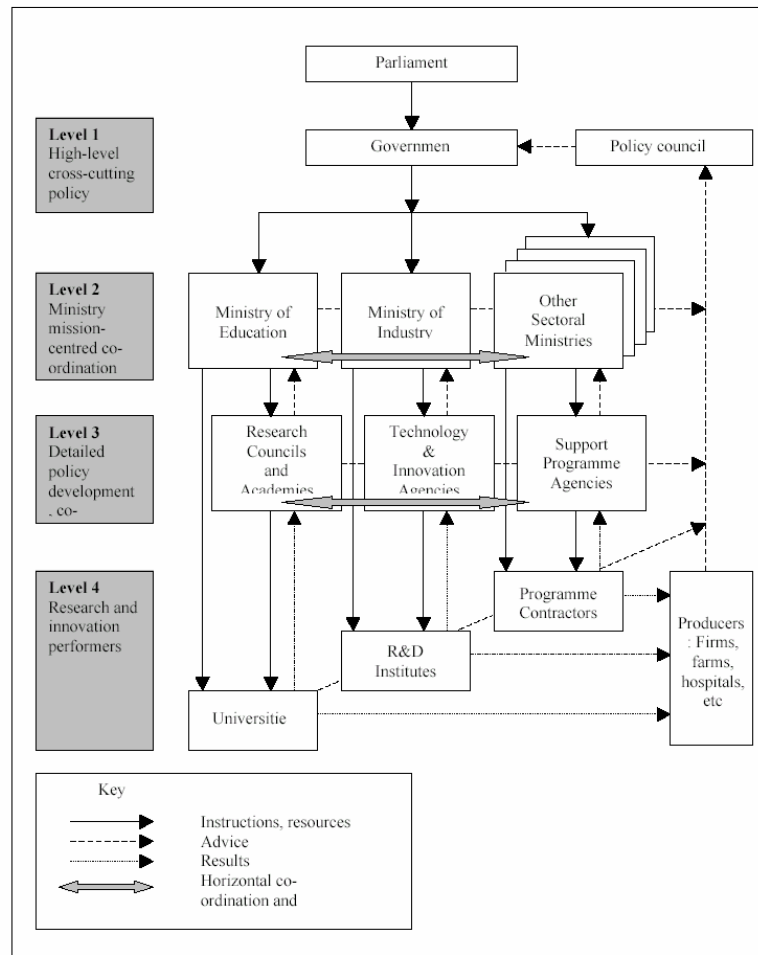


Policy Instruments

- u Regulatory:
 - u Norms
 - u Intellectual Property Rights
 - u Competition rules
 - u ...
- u Economic:
 - u Public funding of research
 - u Taxation
 - u ...
- u Informational:
 - u Statistics, reports,
 - u Foresight, strategies
 - u ...

Organization of Innovation Policy

Exhibit 51 Generic Organisational Structure for Research and Innovation Funding and Governance



Source: Erik Arnold and Patries Boekholt, *Research and Innovation Governance in Eight Countries: A Meta-Analysis of Work for EZ (Netherlands) and RCN (Norway)*, Brighton: Technopolis, 2003



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Innovation policy trends in Europe

- u Similar mix of policy instruments : often simple copy-paste rather than intelligent benchmarking
- u Major accent on bridging initiatives between public and private creators of knowledge (heritage from linear thinking)
- u Systemic Innovation policies on the paper: new trend, but still marginal
- u 3 types of innovation governance in Europe: modern and dynamic approach, traditional approach, special cases



Innovation policy issues in forestry

- u What importance is given to innovation in forest policy?
- u How is innovation covered in forestry policy and programmes and what activities are supported?
- u Which areas are considered to be important areas for innovation in forestry?
- u What hampers the integration of innovation in forest policy?



Innovation Policy Survey 2005/2006

- u UNECE/INNOFORCE survey:
 - u Sent out to forest administration in 31 countries
 - u Responses: 18 (60%)

- u CEPF/INNOFORCE survey:
 - u Sent out to forestry associations in 26 countries
 - u Responses 15 (58%)

- u Interviews with institutional actors in 6 countries



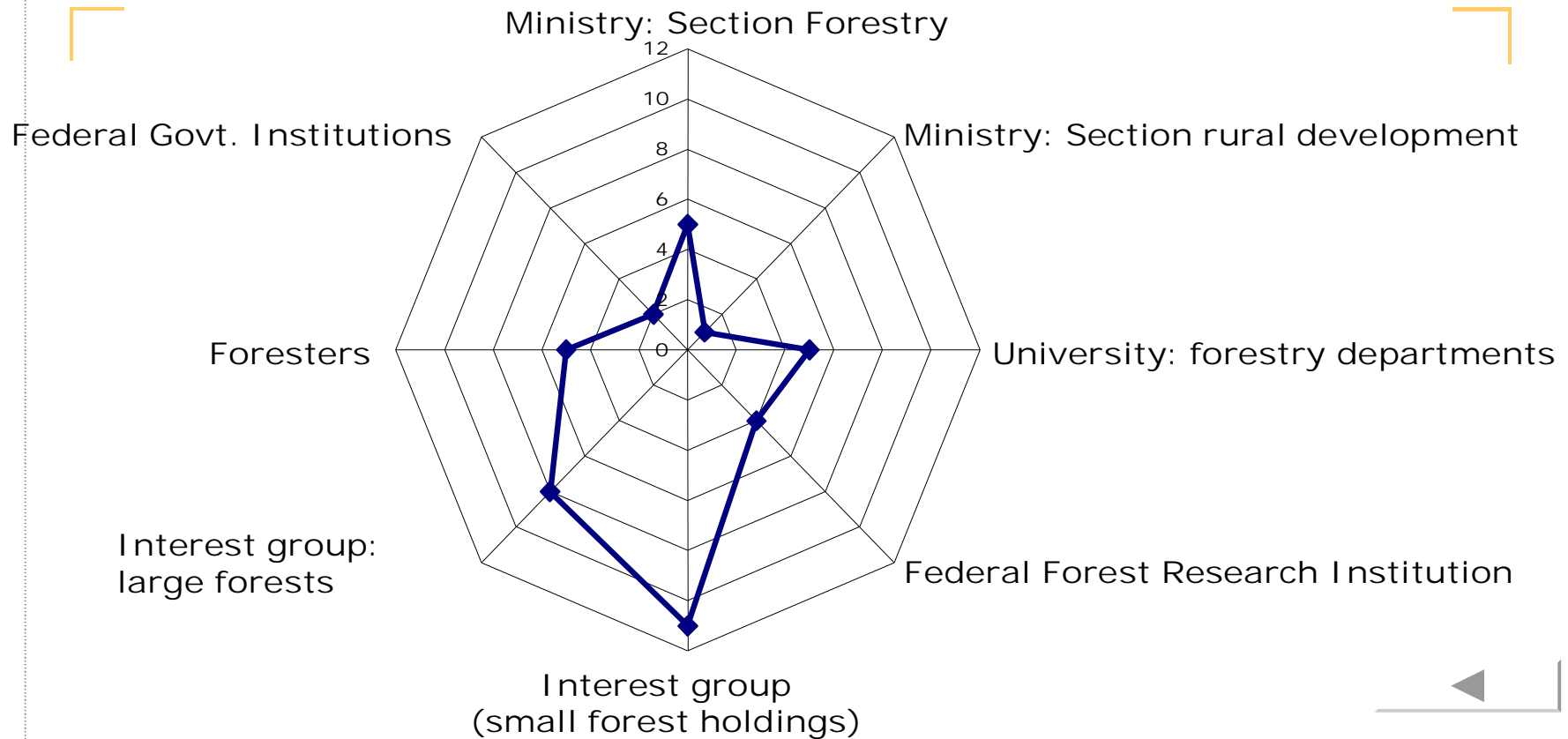
The Forestry Innovation System

- u Small closed and circle of actors
- u Different views on the role of the state in innovation processes
- u High significance of innovation for forestry recognised
- u But: insufficient support through concrete programmes and measures

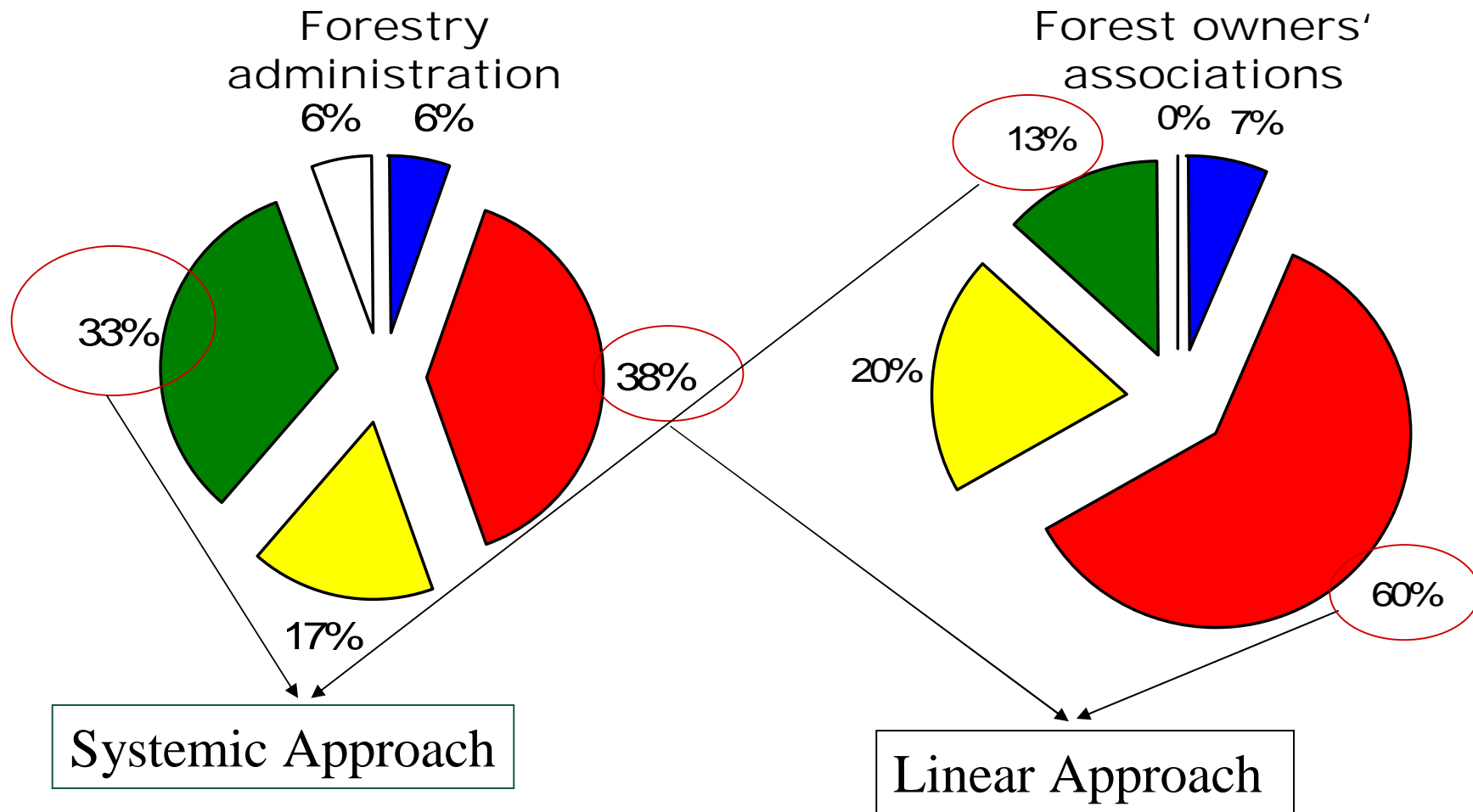


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Actors in the Forestry Innovation System - Austria

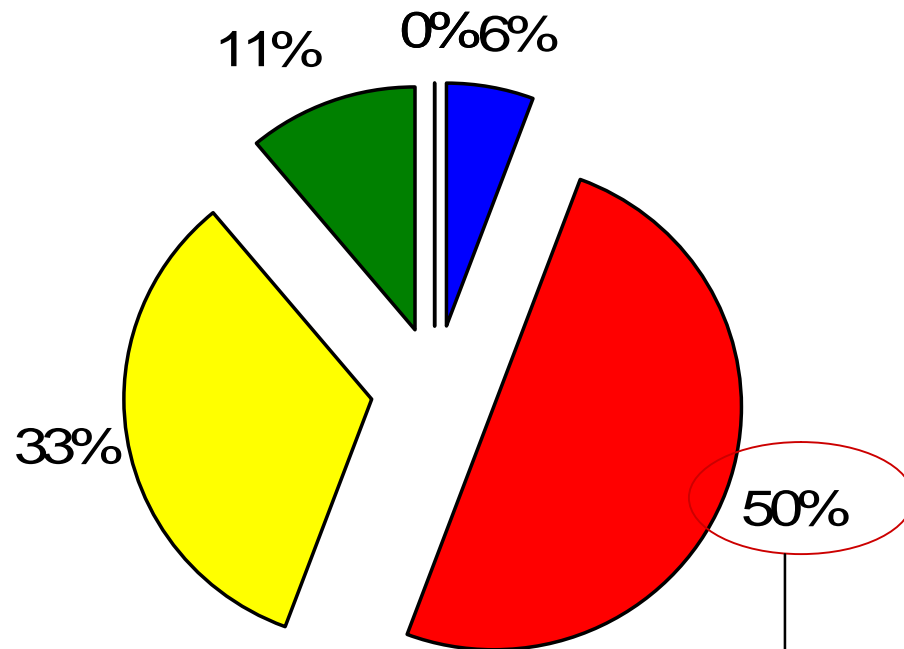


The role of the state in innovation processes

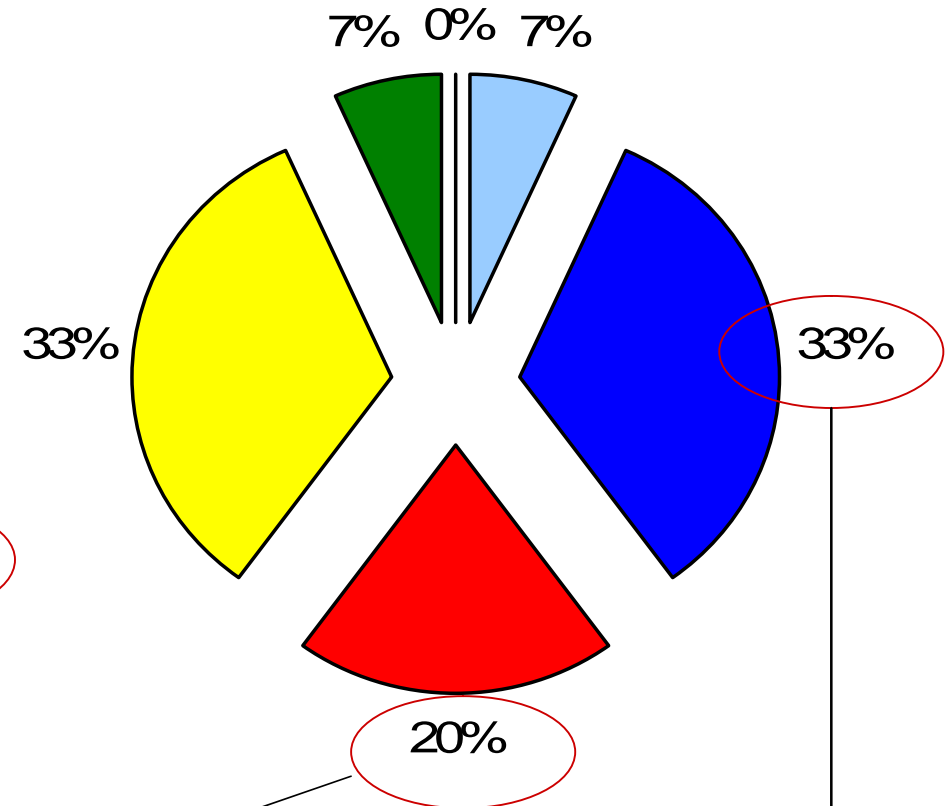


Importance & measures taken

Forest Administration



Forestry Associations



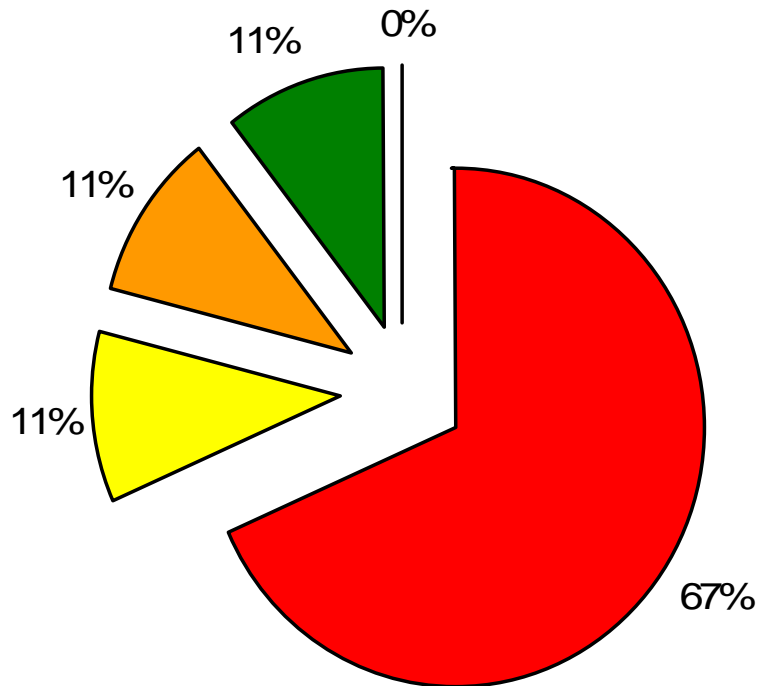
Important, but few uncoordinated measures

Important, but no specific measures

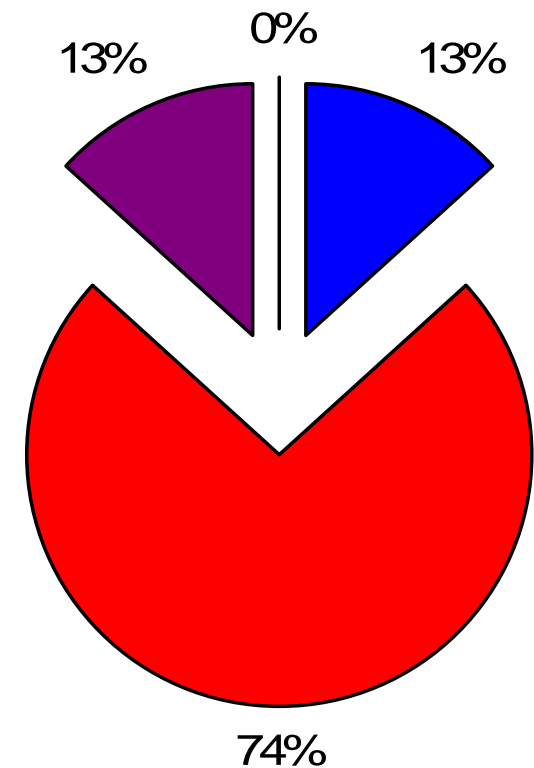


Where is innovation addressed in forest policies / programmes?

Forest Administration



Forest Owners' Association



In general policy documents only!

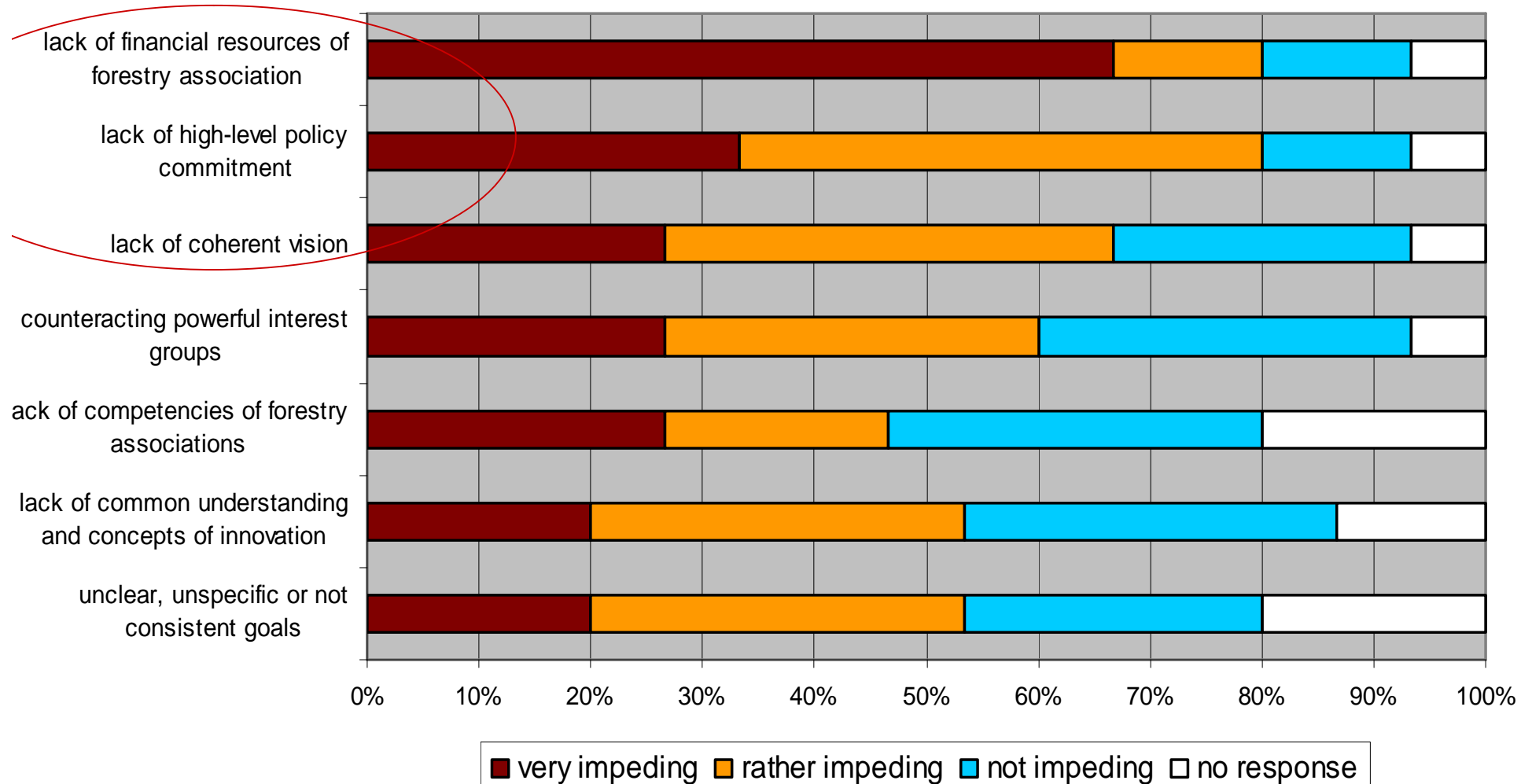
Measures

- u Hardly support for pilot and demonstration projects
- u Support of Diffusion of pre-selected products and processes
- u Information is provided mainly for traditional forestry issues
- u Lack of information on new markets
- u Good support for the coordination between forest owners
- u Lack of support for the coordination with other sectors
- u Generally more innovation support measures in countries with longer market tradition

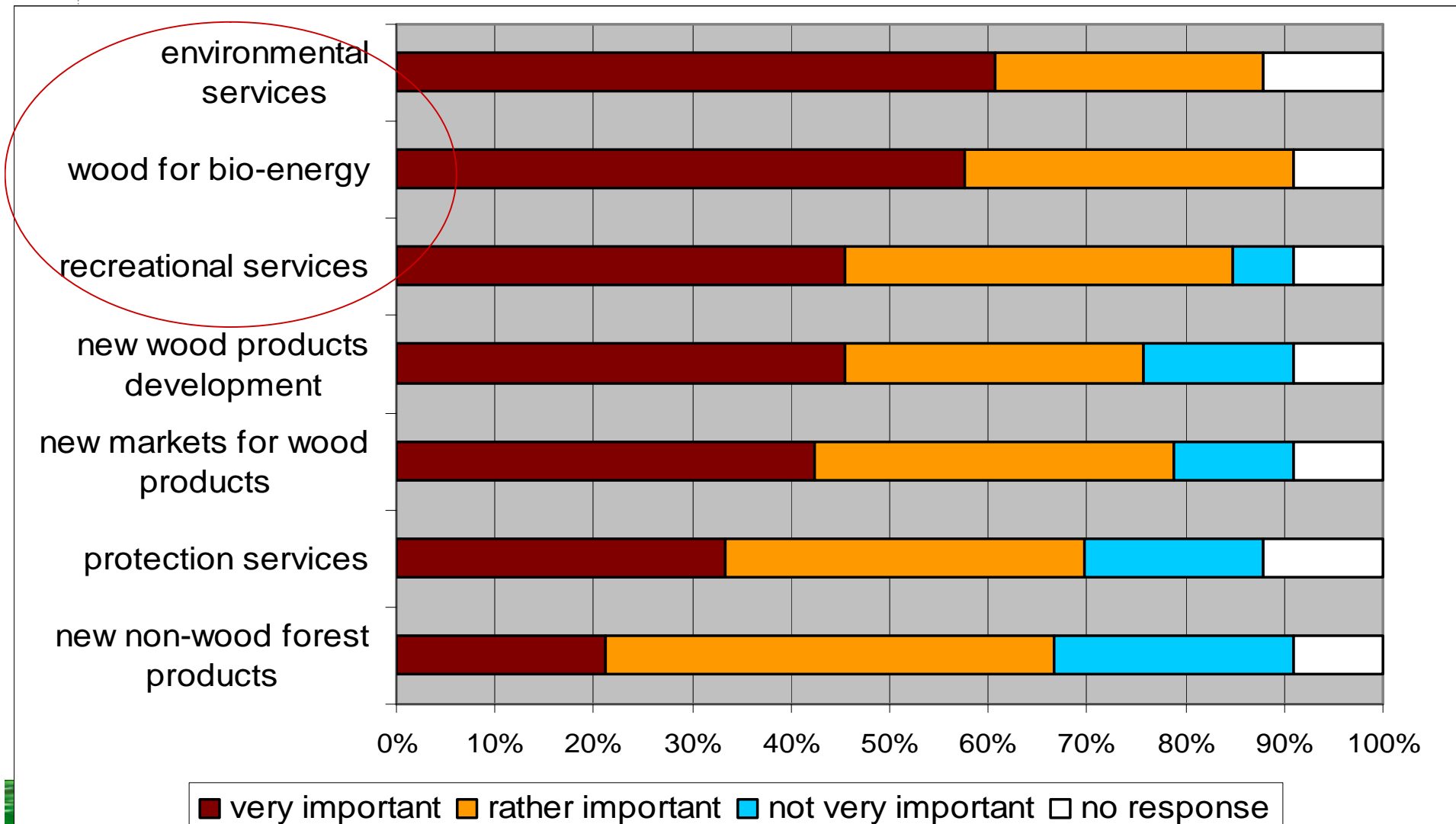


Impediments for the integration of innovation

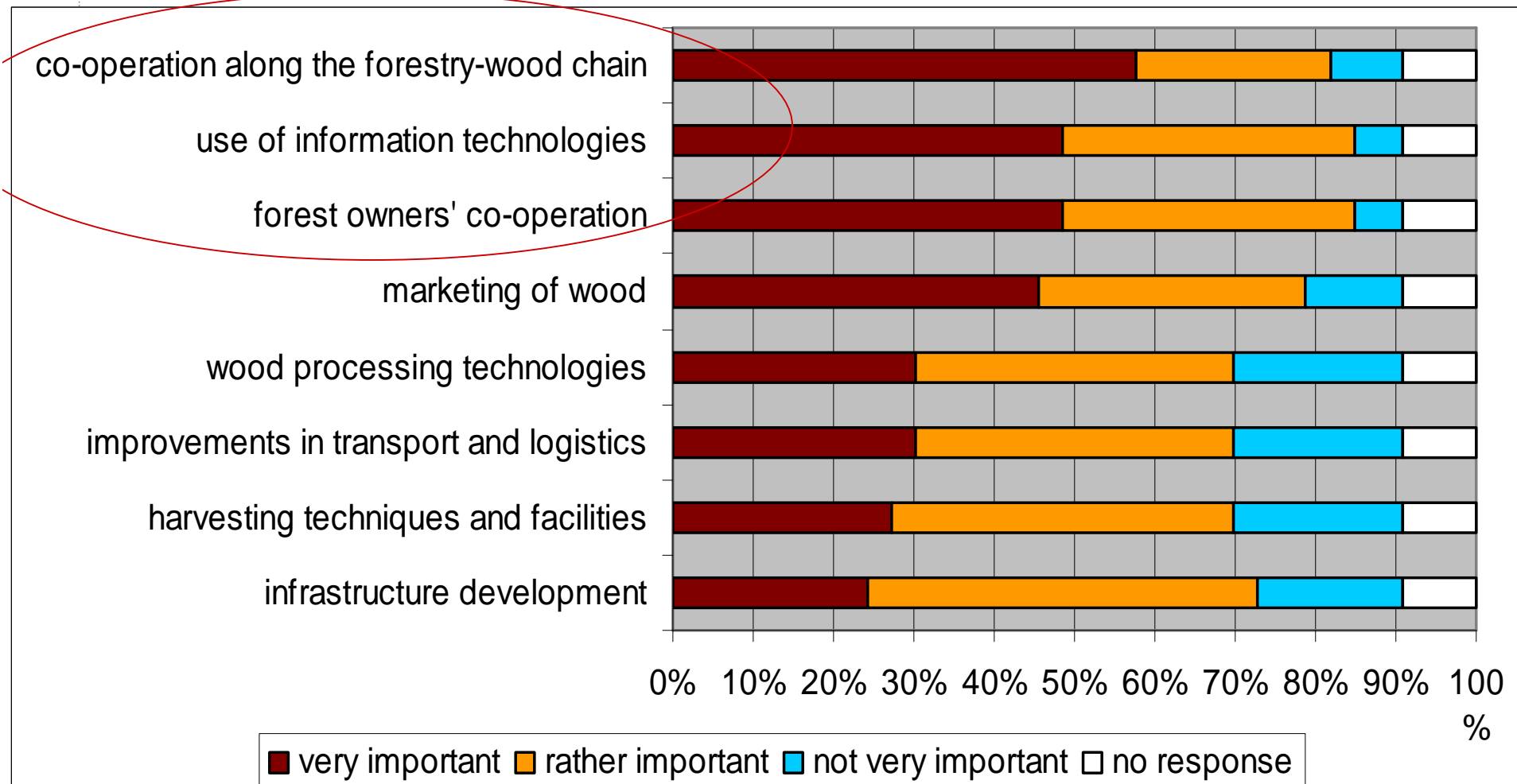
Impediments for the integration of innovation




Most important innovation areas - goods and services



Most important innovation areas: processes





Innovation system failures some key issues

- u Missing or inadequate structures or interaction
 - u Often well established network of change-averse “incumbent” forestry institutions (lock-in & lock-out)
 - u Little interaction with other sectors & consumers of innovations (e.g. services)
 - u Weak interaction of knowledge institutions & practice
- u Little on new and emerging need identification?
- u Little room for learning & experimenting (pilot, demonstration projects,..)
- u Little support for mainstreaming / early diffusion



Conclusions

- u Recognition of importance of innovation
- u Integration of innovation varies regarding countries, regarding support activities
- u Support activities general low:
 - u Lack of explicit innovation policies, -strategies and programmes for the sector
 - u Innovation support is often characterised by single measures and no coordinations
- u Strongly varying role of forest owners' associations



Discussion

In your country, what importance is given to innovation by forest policy?





Thank you

www.efi-innoforce.org



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