**Innovation Systems in the Forestry Sector: Strengths and Weaknesses of the Institutional System**

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**Description:** Description and critical evaluation of the innovation systems in forestry in Central Europe.

**Methods and range:** Three surveys in eight countries of the EFI PC INNOFORCE consortium (Austria, Czech Rep., Germany, Hungary, Italy/Trento, Slovakia, Slovenia and Switzerland): 1) Comprehensive forest holdings survey (1,417 responses, excluding CH), institutional system survey (165 responses, excluding DE and CH) and case study analysis (32 cases, excluding HU and IT).

Innovation and entrepreneurship are widely recognised as the main driving forces for economic growth, competitiveness and employment creation. There is a growing consensus that innovation is an institutional process and that it is not only the entrepreneur that is responsible for the innovativeness of the firm. Entrepreneurs are embedded in a system of institutions that can support them. However, research has shown that the innovation system in forestry in Central Europe is quite weak.

**Sectoral innovation system**

Main components of innovation systems are considered to be the actors (organisations) and the institutions (habits, routines, rules, laws or regulations) that regulate the interactions between them (Figure 1). The functions of these institutions are summarised by Edquist and Johnson (1997) in three categories:

1) to reduce uncertainties by providing information for the enterprises,
2) to manage conflicts and co-operation, and
3) to provide pecuniary and non-pecuniary incentives.

Breschi and Malerba (1997) define sectoral innovation systems (SIS) as "systems of firms active in developing and making a sector’s products and in generating and utilising a sector’s technologies."

**Key actors and institutions in forestry in Central Europe**

Key organisations in forest policy are the ministries responsible for forestry and environment, interest groups of forest owners and forest workers as well as others (e.g. environmental interest groups). At least one university per country covers forestry. There are federal forest research institutes and further education organisations. Furthermore, private consultancy organisations exist. In some of the countries covered by the research, forestry innovation policy is rather dominated by public administration, in others by forestry interest groups. Innovation policy is quite prominently addressed on the national level through policies and programmes; however, these are disconnected from the forestry sector.

**Lack of interaction and lack of policies**

As interviews with the institutional actors showed, there is a significant lack of interaction between forestry and forest-related policies and the wider innovation policies in the countries. Forest related institutions are not in contact with governmental or non-governmental bodies or agencies dealing with innovation policies in the individual countries. Forestry agencies have difficulties to implement or transfer innovation policies (that are designed across a range of sectors) into the forestry sector.
There are no comprehensive innovation policies formulated for the forestry sector. Although representatives of the forestry institutional system mostly regard the topic of innovation as highly important for the development of the sector, corresponding policies, strategies or programmes are hardly identifiable.

**Small group of forestry institutions active**

The group of forestry institutions, which is active in innovation related matters, is usually small. Only a few actors are seen to be relevant for innovation aspects by the institutional actors. Often, as in Austria (Figure 2), forestry interest groups dominate the picture, but public administration and research and education institutions are hardly mentioned. In other countries, public administrations are more central.

**Diverse market expectations**

Institutional system actors were asked to assess the future importance of specific markets as a source of income for forest owners. Overall, experts expect quite different market developments (Figure 3). Only one feature is constant, namely that actors see other than traditional uses of wood to rise in importance from the medium to the long term.

**Key findings:**

+ Explicit innovation policies to systematically support innovation do not exist for the forestry sector in Central European countries.
+ Forestry actors know little about national innovation programmes and rarely make use of them.
+ There are administrative and legislative obstacles for innovation in forestry, but weaknesses related to financing, information and structure are more impeding.
+ Forestry agencies are successful in the diffusion of selected innovations (e.g. forest owners cooperations, biomass projects), but systematic support to develop new ideas and more radical innovations is lacking.
+ For strengthening the competitiveness of the forestry sector, there is a need
  - to establish bridges between forestry and other sectors,
  - to better co-ordinate and integrate research and education institutions with the practice, and
  - to provide informational and funding support (e.g. for the trial of more radical ideas).

**Related publication:**


**Cited sources:**


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