

Project no. 311919

StarTree

Multipurpose trees and non-wood forest products a challenge and opportunity

Start date of project: 1 November 2012

Duration of project: 4 years

Collaborative Project

FP7-KBBE-2012-6-singlestage

D5.4 Innovation System Analysis Report

Due date of deliverable: **30 April 2015**

Actual submission date: **12 June 2015**

Organisation name of lead contractor for this deliverable:

University of Natural Resources and Life Sciences, Vienna

Dissemination level: **PU**



Authors

Ludvig, Alice; Weiss, Gerhard; Zivojinovic, Ivana

Reference

Ludvig, Alice; Weiss, Gerhard; Zivojinovic, Ivana (2015): Star Tree Deliverable 5.4 Innovation System Report

Executive summary

The report characterises and compares innovation systems (policies and actors and their interrelations) related to non-wood forest products (NWFPs) in the regions. NWFPs are not linked only to the forest sector but also to other market sectors (Food & Beverage, Tourism & recreation, chemical products, cosmetics, decoration and others) which include a variety of (possible) support mechanisms in the innovation systems. The importance and roles of sectoral (incl. forestry, agriculture, tourism, etc.) and regional innovation systems of various types on different geographical-administrational levels has been studied for this report. The present analysis of innovation systems (IS) includes the relevant public and private actors and their roles in the innovation process; the institutional frameworks such as legal regulations and policies; and their interrelations. The analysis carves out types of innovations in the regions, as well as fostering and hindering factors. First, the analysis confirms that the majority of innovations are product innovations (goods and services) and the largest portion out of these are edible products. Second, the second rank is covered by several types of “institutional innovations” in a variety of subtypes, including the introduction of new rules or regulations, or the formation of organisations and cooperatives. Third, for all innovations, the strongest hindering factor is a lack of finances and monetary support according to the interviewed actors. When asked about “information needs”, the interviewees did much less report a lack on “information on finances” but rather a lack on “information about marketing”. We infer that most actors are well informed about the possibilities for finances but that there seem to be structural gaps in the systems for actual financial support. The need for marketing information shows that there are needs for support in access to markets and marketing know-how through the policy system for innovations in NWFPs. Fourth, in what concerns the sectoral orientation of the innovation systems in the regions, slightly more of the relevant actors are active in other sectors than the forest sector. The policies that have been indicated to be of relevance for innovation in NWFPs, are foremost forest sector policies (including “rural development” policies, =“Agriculture and Forestry”). In the policies dedicated explicitly to financial support of innovations also the forest policies prevail in the answers (also including “rural development” policies, =“Agriculture and Forestry”). Furthermore, the regionally relevant innovation actors are more involved in the initiation and technical consultation of innovative projects and start-ups than in the financial support or financial consulting of them. Finally, the procurement of partners for cooperation is also in a strong position amongst the types of support, which shows that support for cooperation and networking is already developed in the regions. Still, there is a need for strengthening sectoral coordination with other sectors than the forest sector. This would involve intensified cooperation between forestry and non-forestry actors in order to also coordinate target instruments and measures for financial support as well as the provision of information on markets and the marketing of NWFPs.



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1 Innovation Systems and the Forest Sector

Scholarly literature on Innovation Systems (IS) is often concerned with “technological innovations” and calls the main system elements of any IS “structures” (Freeman 1995, Lundvall 1988). These structures represent the static aspect of the system, as they are relatively stable over time. Three basic categories of structures are distinguished: Actors, Institutions and Technological Structures:

- a) **Actors** involve organizations contributing to a technology, as a developer or adopter, or indirectly as a regulator, financier, etc. It is the actors of a Technological Innovation System that, through choices and actions, actually generate, diffuse and utilize technologies. The variety of relevant actors is enormous, ranging from private actors to public actors, and from technology developers to technology adopters. The development of a Technological Innovation System will depend on the interrelations between all these actors. For example, entrepreneurs are unlikely to start investing in their businesses if governments are unwilling to support them financially. Vice-versa, governments have no clue where financial support is necessary if entrepreneurs do not provide them with the information and the arguments they need to legitimize policy support. This leads to the second element in the system:
- b) **Institutional structures** are at the core of the innovation system concept. It is common to consider institutions as ‘the rules of the game in a society, or, more formally, (...) the humanly devised constraints that shape human interaction’ (Edquist and Johnson 1997). A distinction can be made between formal institutions and informal institutions, with formal institutions being the rules that are codified and enforced by some authority (“official documents”: Policy programmes, regulations and legal acts), and informal institutions being more tacit and organically shaped by the collective interaction of actors.
- c) **Technological structures** (R&D subsidy schemes) consist of artefacts and the technological infrastructures in which they are integrated. R&D subsidy schemes can foster technology development but should (in theory) also pave the way for more elaborate support schemes. (see Miller et al. 1991)

Although the forest sector is a sector with traditionally not very technology intensive features and structures, it is future-oriented and has large potential for innovation (Weiss et al. 2011). We want to go beyond the technology oriented innovation system literature and claim here that it is a **misconception of low and high-tech sectors to assume that only the latter were the only source for economic growth and innovation**. Studies show that although low- and medium technology sectors invest less in research and development, they are still relevant for innovation (Hirsch-Kreinsen and Jacobson, 2008). Specifically for the forestry sector, we know from an extensive study in Central-Eastern European countries (Rametsteiner et al., 2005) that larger forest holdings (>500 ha) are as dynamic as an average EU manufacturing SME. Forest owners or managers often have an entrepreneurial orientation with small holdings but do not focus their innovations on the forest, and even lesser on NWFPs. Unfortunate framework conditions, such as the fragmentation of forest ownership or small forest-based companies, hinder innovativeness in the sector and more so in NWFPs. From the same study, we also know that not only these are structural problems in the forestry sector but also that the innovation systems are not well prepared to support innovations. Rametsteiner et al. (2005) find a range of weaknesses: first of all, the sectoral innovation systems are disconnected from the national innovation systems. Cross-sectoral interrelations between forestry and relevant other sectors such as energy, tourism or environmental services hardly exist. Also within the



forestry sector, there are usually no comprehensive innovation policies formulated. This counts even more for NWFPs, as they are very often not seen as part of the “forest sector” and rather by-products by policy-responsible. NWFPs are non-timber products and thus somewhere in-between several sectors. Innovation systems are active in the fields of technological and organisational innovations, and in the diffusion of certain pre-selected innovations, but hardly in supporting early stages of innovations or small scale NWFP start-ups. Specific support aiming at the development of new products and services in the forest sector is practically missing (Rametsteiner et al., 2005). Quite similar difficult conditions exist not only in NWFPs (Weiss and Rametsteiner 2005 have shown this with example of Eastern European Countries) but also in forest-based industries (Ollonqvist, 2011). There are specific needs and challenges for innovation governance in this low-and medium-tech traditional industry sectors with very often family-run small businesses, located in rural areas, and limited R&D capacities. Cluster policies very often install so-called cluster organisations with the aim to support networking among regional firms, facilitate knowledge exchange and cooperation, improved access to investments or subsidies as well as access to training and R&D services. As such, they fulfil innovation system functions (Weiss et al., 2011: 312ff). Clusters, by linking related industries, companies and R&D institutions, have become an increasingly important instrument of policy development in areas related to entrepreneurship, competitiveness and innovation (Glaeser et al. 2010; Ketels et al. 2008). When going further into detail of the STARTREE regions, we will see that in regions which have such clusters there is a more elaborated support system for innovation, such as North Karelia, Finland¹.

In the following we will discuss the innovation systems that concern the development, the production and the marketing of NWFPs and we will characterise the variety of sector innovation frameworks in the selected STARTREE regions. By this we also test the applicability of an innovation system approach to categorise innovations that concern these products. We will analyse the empirical phenomena that selected actors and experts in the regions have reported regarding innovative NWFPs, the political-institutional influences and the involvement of institutional support organisations (Weiss and Rametsteiner 2005).

2 Innovation Systems and NWFPs in the StarTree regions

2.1 Actors: relevant public and private actors and their roles in the innovation process

Actors are an important part of innovation frameworks as they are the agents that can support or hinder innovations (Buttoud et al. 2011). Most often firms are regarded as key actors in sectoral systems such as the forestry sector, together with governmental and non-governmental actors (Weiss 2011, 25). They are characterized by specific beliefs, expectations, goals, competences and levels of “organisation” (institutionalism). Actors are constantly engaged in processes of learning and knowledge accumulation (Malerba 2005). In congruence with the policy framework conditions, we will distinguish the relevant actors in the STARTREE regions into **sector-specific actors** on the one hand and on the other into **general research, innovation and development organisations**.

¹ North Karelia has a long list of institutions that provide support in this respect; the Forest cluster of North Karelia and the Centre of Expertise Programme, these include the Finnish Forest Research Institute, the University of Eastern Finland, the University of Applied Sciences, the Forestry Centre, the Environment Centre, the Finnish Game and Fisheries Research Institute, the Joensuu Science Park.



Sector specific actors are usually the ones from the forestry sector, that is interest groups in agriculture, forestry and rural development. They are active in networking, consultation, lobbying and fundraising activities, provide for know-how for the production and marketing, and help in financing under agricultural, forestry, renewable energy or other sectoral activities. Specific authorities implement relevant laws but have also consultancy functions and offer subsidies.

More generally oriented organizations are non-sector specific (non-forestry) R&D support institutions (providing for technical advancement and know-how in NWFP) as well as governmental and non-governmental actors in innovation and start-up support as well regional development programmes that support NWFP development, production and marketing (such as tourism).

2.1.1 Methodology

It is the actors and their networking relationships that have an impact on specific common habits of thought, norms, standards and laws. They act within the institutional framework. Also of importance are the knowledge base and the opportunities for action in innovation. In the enquiry we asked the most relevant actors in relation to NWFP for their NWFP related activities. For this we have undertaken a two-step survey. In the first round an “innovation policy questionnaire” was sent to 14 key experts in the StarTree regions (“Case Study responsible”-CSRs), asking them to identify actors and policy programmes that exist in their country and region which support innovation in NWFPs. In the second round another questionnaire on “innovation actors” was sent to identify crucial actors in the region. In total 53 actors responded to the questionnaire. They were asked about the kind of actions their organisations did in regards to innovation, their support instruments, their sources of information and their interactions. Put in a nutshell: In each region the key actors in organisations that support NWFP were asked for the forms of support, their information tools and their cooperation with other actors in the regions. We will first specifically assess the strength of actors from the non-forestry sector in the region, second we will ask in how far they cover NWFPs and third, how well the forestry actors address NWFPs and have cross-sectoral relations.

2.1.2 Actors in the StarTree regions

One interview with each of 53 actors took place in the above mentioned “innovation actors”-survey (see Table 1, below and Table I, Annex for further details).

In terms of “**sectoral affiliation**”, amongst this sample of 53, eight were identified as dealing with the sector “Food” as their main occupation and 19 with the sector “Forest” (Three of the latter deal explicitly with NWFPs from forests in their main occupation). Four belong to “Tourism” and “Environment” as their main sector affiliation.

In terms of “**function in the innovation-system**” the 20 of these 53 actors are from “interest groups” [Mostly forest owner associations or chambers of agriculture], five are Research Organisations such as Laboratories or Universities (forest and non-forest sector), and four are education and training organisations (forest and non-forest sector). Any explicit Innovation and/or start-up support is covered by four organisations [amongst those are the Joensuu Science Park Ltd. in North Karelia, Asociatia Centrala De Incubare Creativ Inovativ De Afaceri in Suceava, the Wales Co-operative Centre and the Business support center Antur Teifi in West Wales and the Valley; see Table I, Annex].



Table 1: Innovation actors and sectors

TYPE OF ACTOR	SECTOR	No.	
INTEREST GROUP (20)	Forestry (9)	9	
	Other (11)	Food	6
		Tourism	1
		Chemical	1
		Rural development	2
		Inn. Support	1
AUTHORITY (19)	Forestry (7)	7	
	Other (12)	Food	1
		Environment	1
		Tourism	2
		Rural development	2
		Regional development	6
ADVISORY (5)	Forestry (1)	1	
	Other (4)	Rural development	2
		Innovation support&start-ups	2
R&D (5)	Forestry (3)	3	
	Other (2)	Food	1
		Innovation support&start-ups	1
EDUCATION & TRAINING (4)	Forestry (2)	2	
	Other (2)	Regional development	1
		Chemicals	1
TOTAL		53	

22 of the actors that have filled out the questionnaire are forestry related, 31 from other sectors. The region with the biggest group of responses is Catalonia (ten), followed by West Wales and the Valley (nine) and Valladolid (seven). Styria, North Karelia, Osrednje-Slovenska region all had five respondents. The rest of the regions have two or three respondents, least ranks Waldmärker with one actor who filled out the questionnaire (Schutzgemeinschaft deutscher Wald), see Table I, Annex.

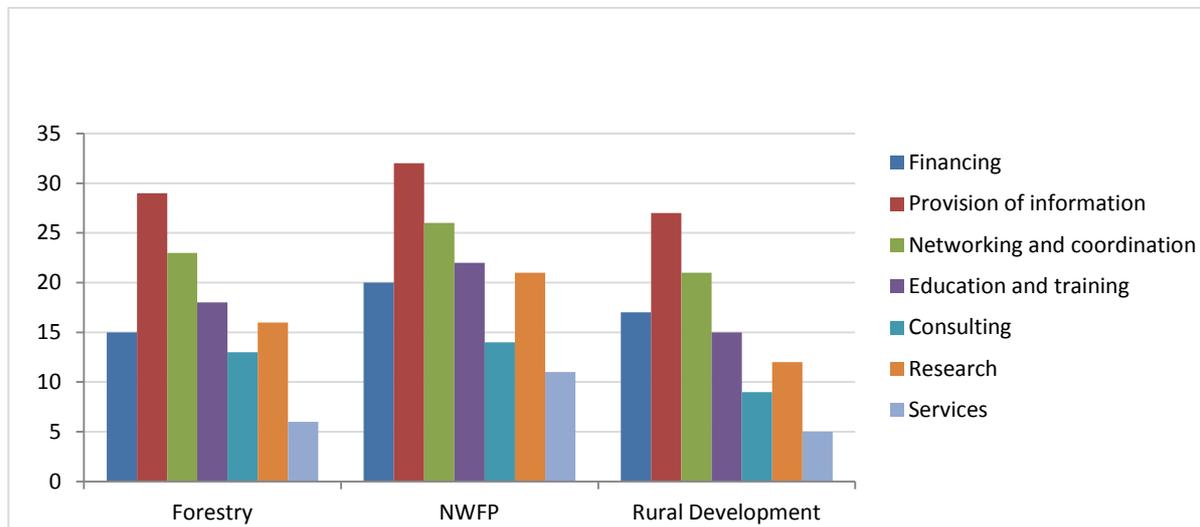
2.1.3 Types of innovation support and roles of actors

Many scholars of Innovation Systems are explaining the development of innovation via the influence and support of surrounding institutions and actors (Edquist 1997, Nelson and Rosenberg 1993). Edquist and Johnson (1997) described the functions of institutions of support in innovation as such: they shall reduce uncertainty by providing information; they shall manage conflicts and cooperation and they shall provide incentives (Edquist and Johnson 1997: 51; Weiss 2011:19). However, since then such functions and activities in innovation processes have been described in very different ways and a common understanding does not yet exist (Edquist 1997, Kubezko et al. 2006). We apply the Edquist and Johnson definition and summarise the support for the development of innovations in NWFPS into: **Forms of support via information, via cooperation and monetary or other incentives**. For the present IS analysis we have operationalised the support into more refined variety of support mechanisms. The selected relevant actors thus were asked if they rather support innovations through financing, consulting, with the provision of



information, research, the provision of natural resources (Land ownership) or other services. Please note that there were several answers possible.

Figure 1: Types of support for innovation by Actors in the STARTREE regions



The distribution of types of support is equally spread across the sectors “Forestry, NWFP and Rural development”. This is very important for the following analysis, as we can assume now that the support types are equally distributed between forestry and rural development with the latter being a synonym for “agriculture”. Regarding actual types of support, the most often mentioned type of support is the provision of information and the second was networking and coordination. Research, education and training are on third position in nearly all the sectors. In sum, all three of the above mentioned main functions of supporting institutions by Edquist and Johnson (1997, p. 51) are mirrored in these response sets of Figure 1: Provision of information ranks first, followed by networking and coordination.

Subsequently the actors identified 35 successful innovations in which they or their organisation was involved in some way. Then they identified the role of themselves and/or their organisation as shown in Figure 2. The main role of actors distributes equally between initiation (19 responses) and technical consultancy (18 responses). Eleven actors were involved in providing financial support and eleven in the procurement of partners in cooperation (networking).

Figure 2: Specific role of actors in innovation projects

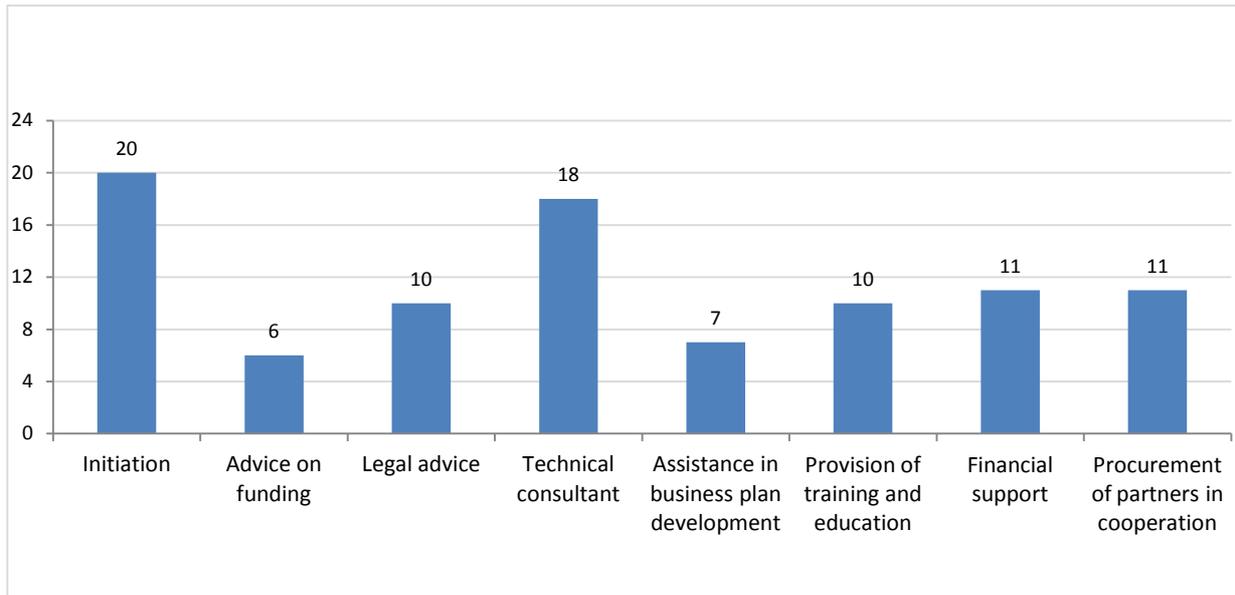
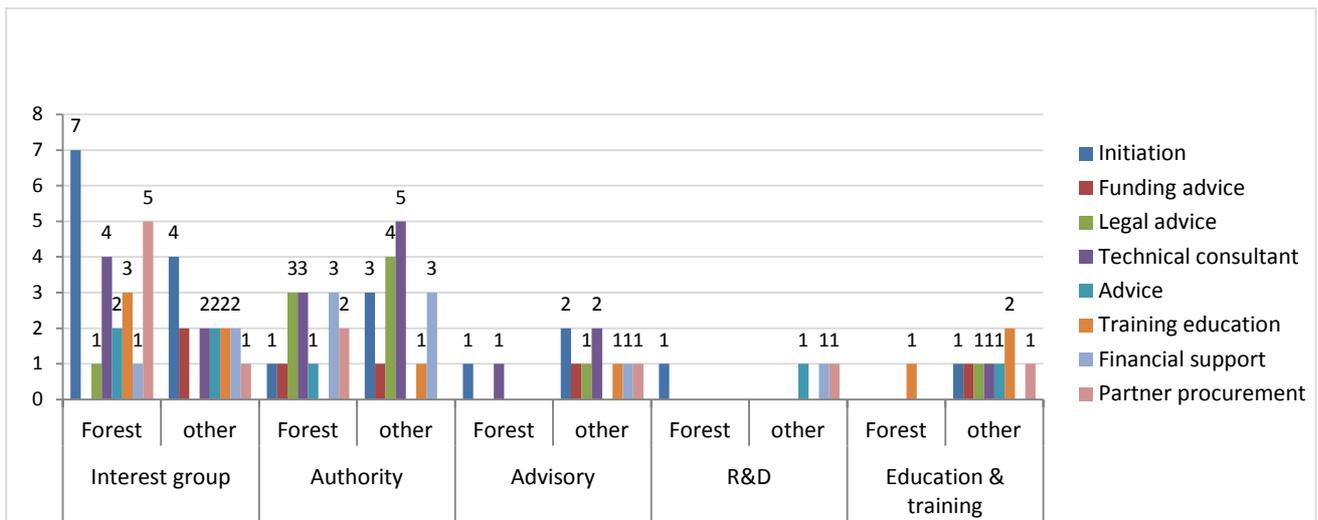


Figure 3: Type of actors and specific role in innovation



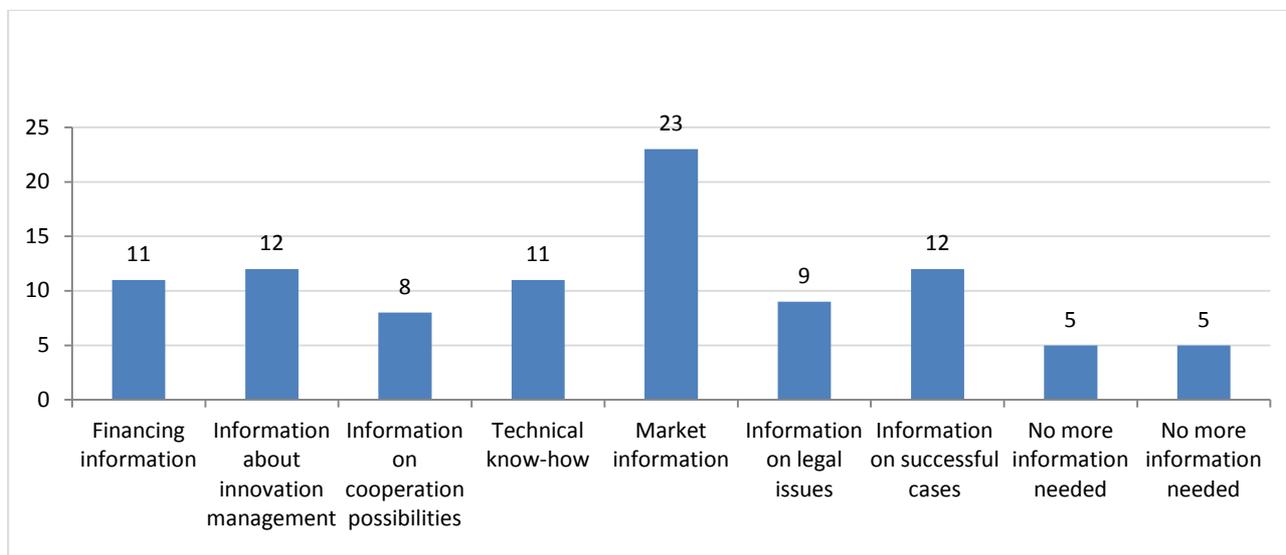
Source: Table III, Annex

As is shown in figure 3, most actors are to be found in the interest groups and amongst the authorities. Split across sectors, the interest groups in forestry and the authorities in non-forest sectors (economy, environment and regional development) are the biggest group in support of innovations.

2.1.4 Information needs across Actors

In the support mechanisms the first function in an IS “provision of information” ranked highest throughout response sets in all three categories (Forestry, NWFP and Rural development). However we were also interested in finding out if there were perceived “information needs” amongst the selected relevant actors. Thus all responding actors were also asked if there are areas where they themselves and their organisations lack information (several answers were possible). Indeed all of the actors responded:

Figure 4: Information needs amongst actors



Most actors (23) indicated that they lack Market information, followed ex equo by information about innovation management (twelve) and Information on successful cases (NWFP/companies) (twelve). Eleven actors ticked that their organisation is providing financial support and six stated that their organisation is giving financial advice; eleven other actors stated in this question that they would need financial information. That most answers point to Market information fits with our preliminary results in the ongoing In-Depth Case studies in the regions. These results will be reported in the forthcoming StarTree Deliverable 5.6. (Implementation analysis of innovation policies). Many of the interviewed innovators bemoan that they had to collect all the necessary information on marketing on their own efforts and their own initiative and received no information support at all. That the actors from organisations that are designed to support innovation in NWFP are also indicating that they lack market information, reveals that there are still information needs in marketing. Only five of these principal actors have indicated that they do not need any more information.

2.2 Policies and the institutional frameworks

Political-institutional framework conditions impact on the forest sector and innovativeness. They impact on the way the forests are managed. They have an impact on the sector through alterations to the markets for forest products and services; and they have an impact through innovation support measures. Key questions here are: Which kinds of policies might be relevant? Is it the sectoral policies (forest sector specific, rural development) or is it the innovation policies (innovation and regional development)? Sector specific policies are usually programmes and actions for forestry, agriculture and rural development (=agriculture



and forestry). They provide subsidies, promote networking, consultation, lobbying and fundraising activities, and provide for know-how for the production and marketing, and help in financing under agricultural, forestry, renewable energy or other sectoral policy fields). Specific authorities implement relevant laws but have also consultancy functions and offer subsidies. Regions may have sectoral R&D and training programmes.

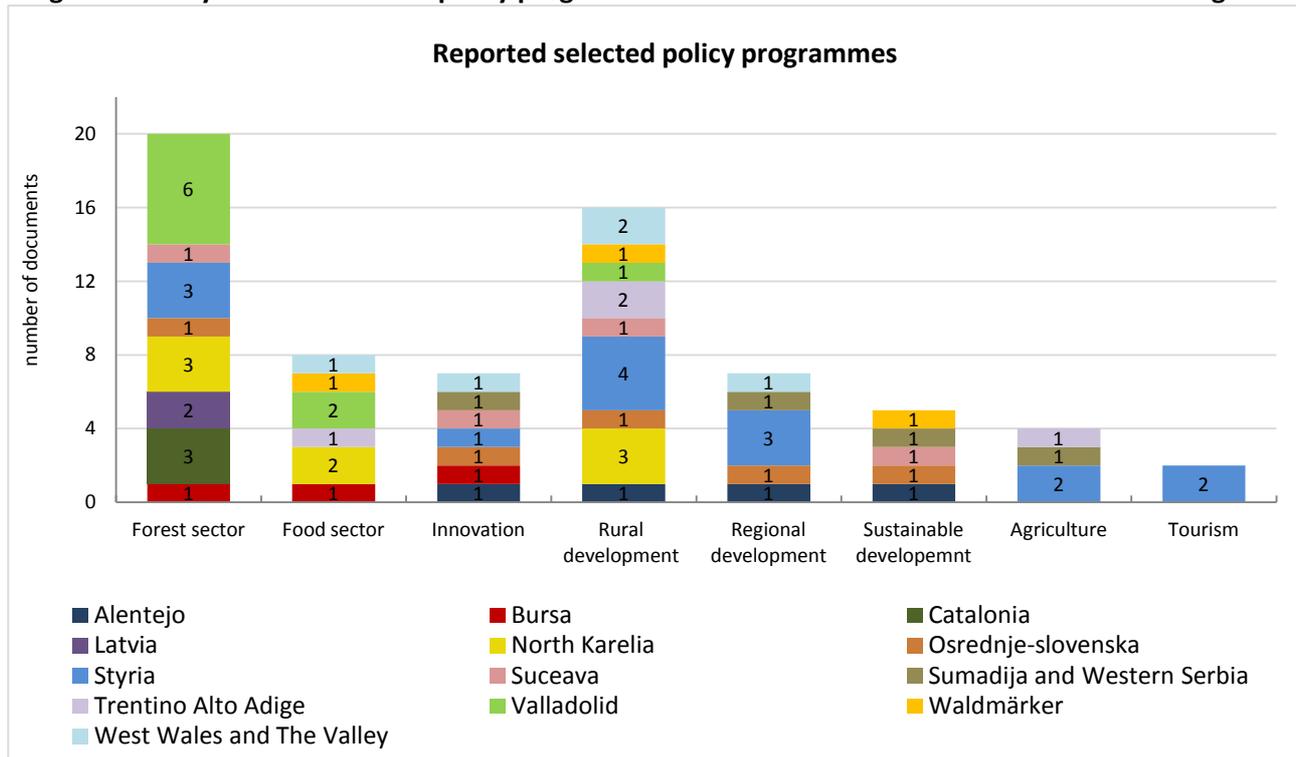
Innovation policies are non-sector specific (non-forestry) R&D support policies (providing for technical advancement and know-how in NWFP) as well as policies in innovation and start-up support (business support) as well as regional development programmes that support NWFP development, production and marketing (tourism, food production, recreation and services).

2.2.1 Policy fields

A policy programme is a body of procedures and projects designed to implement policies and achieve their aims. For example, a regional food industry cluster programme is such a programme. Also the financial support of forestry training schools is such a programme. Also the establishment of a LEADER Local Action Group under the national Rural Development Plan may be designed to help implement the policy of supporting the economic and sustainable development of rural areas in the EU, and thus is such a programme. In our survey of key experts (“Case Study responsible”-CSRs) in each region, the “innovation policy questionnaire” (see section 2.1.1 Methodology) was sent out to all 14 STARTREE regions. The experts were asked to identify and list all the main policy programmes and documents that they deem relevant **for innovation in NWFPs** in their regions (see full list in Annex I). For an IS Analysis the focus of interest here is to map all policies that are and could become relevant for NWFPs and innovation thereof. Thus we were interested in the variety of policy fields that would cover these matters across the regions. The experts were asked to group these policy programmes across the following policy fields. In terms of these identified policy fields, the results **across STARTREE regions** are as shown in **Figure 5**



Figure 5: Policy Fields of relevant policy programmes for innovation in NWFP across STARTREE regions



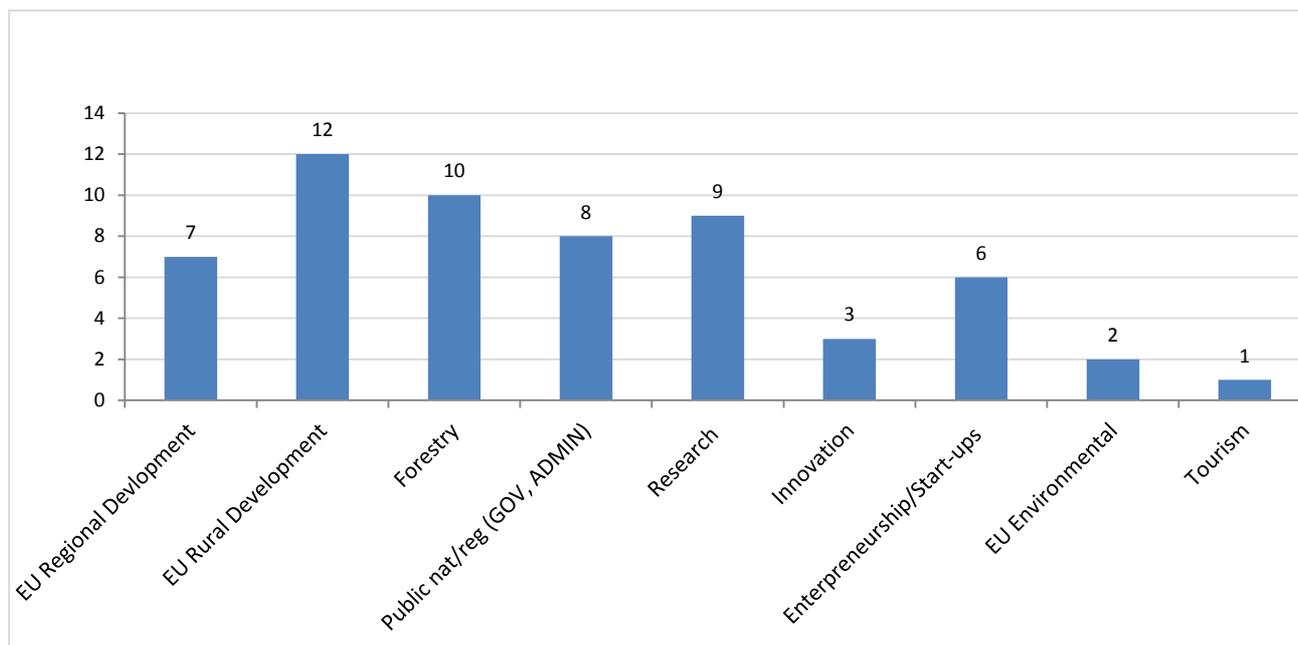
According to our results across all regions, most policy documents relevant to innovation in NWFP are reported in the forest sector especially when we add “agriculture” and “rural development”.

2.3 The Policies that support innovation

The policies of innovation support are classified into their financial functions, technological (R&D) functions and coordination functions.

2.3.1 Financial support mechanisms as part of the IS

In the subsequent “innovation actors”-survey (see 2.1.1 Methodology) the identified 53 relevant actors (the same as in the sections on the actors before) across the STARTREE regions were then asked to identify the main sources of financial support (such as regional development programmes, R&D programmes etc.) that their organisation uses to support innovation and start-ups in NWFPs and to name the institution managing the support programme.

Figure 6: main programmes of financial support

Across the appointed programmes, twelve are EU rural development programmes (all implemented at the specific regional levels), ten use forestry programmes as sources for their financial support, eight appoint programmes from (mostly regional) public administration and governments for subsidies, nine use research funds (national and EU) as a source of financial support, seven mention EU regional development programmes, and six of the named programmes are policies that should fund business start-ups (national and regional in scope). Amongst the three programmes which explicitly address innovation, there is only one with a sectoral overlap to forestry: The Innovation and Knowledge Transfer Plan of the Forest Ownership Centre (CPF) (please note: it belongs to the Catalan Government, it is not an interest group). The other two explicit innovation policy programmes that are named to be relevant for funding of NWFP innovations by the relevant actors are not forestry-sector specific: TEKES – the Finnish funding agency of technology and innovation (national in scope) and the Serbian (Sumadija and Western Serbia) respondents mention the national Program to support innovative clusters by the National Agency for Regional Development.

Amongst the Forestry related programmes two sources of financing stem from Forestry interest groups and are designated for Training and Education (FAST *Ausbildungsstätte Pichl* in Styria), another one is located at a University faculty of forestry and is designed for teaching (University of Ljubljana, Biotechnical faculty, Dept. for forestry and renewable forest resources). All other programmes stem from national ministries (Agriculture and Fishery) and regional governments (such as the province of Trento) for support of forestry projects and activities. The programmes that are designed for support of Research all are national R&D funds and EU funds (such as the FP 7 programmes) which are used for NWFP related research.

To summarise, in the financial support mechanisms there seems to be a balance between the ones that are rooted in the forest sector and others.

Furthermore, when asked explicitly for “innovation policies” in the regions; eight main innovation policies were mentioned by the key respondents (CSRs) in seven regions in the “innovation policy questionnaire” (see 2.1.1 Methodology):



Table 2: Policies for Innovation

Region	Scope	Policy Document
Alentejo	national	Portuguese standard NP 4457:2007 - requirements for RDI as well as Innovation Management Systems
Bursa	national	Legal act and programme TÜBITAK 1001, 1007 - funds scholarship and research in the field of innovation
Osrednjeslovenska	regional	Regional development programme of Ljubljana urban region
Styria	regional	The Wood Cluster Styria Ltd. (2001)
Suceava	national	National Plan for Research-development and Innovation (2007-2013)
Šumadija and Western Serbia	national	Strategy for Development of Competitive and Innovative Small and Medium-sized Enterprises (2008-2013)
West Wales and The Valley	national/regional	Strategy "Innovation Wales" (2013)

Source: Table I, Annex

Except for the "Wood Cluster" Styria, which is linked to timber products, none of the mentioned innovation policies is directly linked to the forest sector, much less NWFP. (See also Table I, Annex on Policies).

All the mentioned "innovation policies" are targeted at technical innovations in enterprises, that embraces technical R&D measures. However, they can include also innovations in food technology or chemical substances and the fostering of SMEs. With this they would embrace NWFPs, e.g. in "wild edible products", the foundation of companies in the realm or extraction of chemical substances and other activities in the development of NWFPs. However, these policies are not explicitly targeting the forest sector, let alone NWFPs. Both the regional and the sectoral innovation systems are lacking such explicit policies.

In addition, the NWFP-part of innovation in forestry is very often neglected. An example is the Wood cluster Styria. It is a suitable example for a policy for innovation in Styria, and was identified by the regional key expert to be of possible relevance to NWFPs. When the second questionnaire (innovation actors questionnaire) was sent to the cluster, their representatives refused to fill out the STARTREE Questionnaire on NWFPs. Their argument was that they are not dealing with NWFPs. Such a detachment for NWFPs from the forestry sector (= the timber sector), but also the food sector and the tourism sector confirms the initial argument of that there are no explicit innovation policies for innovation in NWFP (n) or forestry.

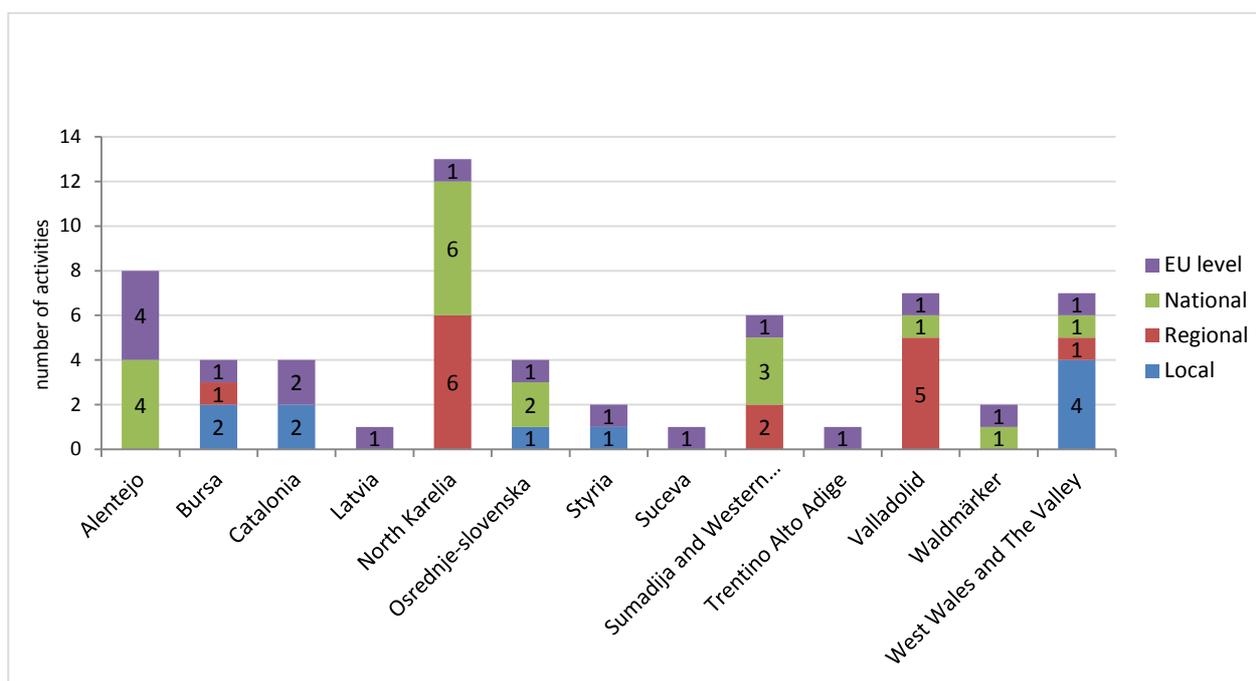
2.3.2 R&D activities as part of the IS

As has been outlined above (section 1, p.4) the "Technological structures" that form part of Innovation systems are denoted **R&D subsidy schemes**, which are structures in support of innovation. Thus we have asked the regional key experts (CSRs) to list all the R&D activities recalled in the regions. The respondents (13 in total, there was one expert responding for each region –see 2.1.1 Methodology) gave even longer lists of programmes in their answer (again several answers were possible, see Figure 7, below). This is unsurprising, as the long list covers all the possible sources for R&D funding and organisations which are active or might have potential to become active in the regions. The presence of R&D funding does not necessarily inform about the matter or sector to which the funding goes. Big parts are dedicated to be used



for “technical” innovations in other industrial sectors in the regions and less for the small scale sectors such as forestry or the cross-sectoral matter of NWFPs.

Figure 7: Research and Development activities across the STARTREE regions



However, former research has shown that in regions with higher potentials and investments into “general” R&D, via clusters e.g. it is also likely that smaller sectors can profit in their development of innovations (Weiss 2011).

To conclude, it is difficult to detect policies that target support innovation in matters of NWFPs. The support comes -indirectly- from other sectors. By this we mean that for instance sometimes at the national level, some forest policies can also mention measures for promoting innovation. These most often refer to bioenergy and the development of biomass matters are very often referenced.

Such an “in-direct regulation” of the matter is also the case, when measures for “innovative and eco-effective use of natural resources” (Finland) or the “diversification of goods and services” (Italy) is stated explicitly as policy aims in some other regulations (originally and mainly designed for other sectors). Yet, all these provisions can possibly be applied and are fruitful for innovations in NWFPs. In other regions, innovation policies at the national level are taking place in the realm of “technical” innovation alone, and are also indicated as such. This goes in accordance with the regular technological innovations that IS analysis is mainly dealing with (Freeman 1995, Lundvall 1988). Such R&D policies then install and support national “High-Tech Platforms”, “Science-Industry Platforms”, nation-wide “Innovation Projects” and their results can then be found e.g. in reports from the OECD-Innovation Policy Platform, which calculating the technological impacts of these measures.

The policy programmes at national levels, who integrate both spheres, by this we mean policy programmes which conceive innovation as a process taking place also in smaller sectors such as forestry, are explicitly found in the UK Forestry strategies in Scotland and Wales (e.g. the Scottish Forestry Strategy from 2006 and the Welsh Strategy for Woodlands and Trees 2009), and also in the Finnish natural resource strategies



(Finnish Natural Resources Strategy of the Ministry of Agriculture and Forestry 2002). The following section deals with the function of cooperation across the defined sectors.

2.3.3 Cooperation as systemic function in the IS

The IS analysis applies the Edquist and Johnson definition (1997: 51) and summarises the relevant support for innovation into norms of support via information, via cooperation and monetary or other incentives (see section 2.1.3). To recall, the first most often mentioned type of support mentioned by the actors was the provision of information and the second most often mentioned type of support was networking and coordination (see Figure 1). First, we have asked the actors what the main means of information for them are, and most of them (41 out of 53) replied that their main means are **personal contacts** (whilst 30 responded also that it is internet, followed by 24 who responded that it is Seminars, courses and excursions) . This is most revealing, as personal contacts (which also happen at seminars, course and excursions) are indicating exchange and networking. In order to find out who the relevant networking partners are, we asked for the most important organisations on the matter and with whom they collaborate most.

In particular, the actors were asked to list the most important organisations they consider as important for supporting NWFP related innovation in their region, excluding their own. It turns out that they mention 201 organisations they deem important. Except for the regions where only one organisation filled out this question, amongst these, 35 of the organisations are mentioned by other actors as well. In 12 cases the actors mention other actors in the same list and in the same region that have filled out the questionnaire. In sum, 1/5 of the selected regional actors are cooperating with another actor in their region. Although these results depend very much on the selection of actors (and the ones who has answered this question), it provides a general view on the grade of cooperation between these organisations.

The actors were also asked to group these organisations to the following types of organisations:

Table 3: Organisations of importance for innovation support, self-assessment of actors

Types	Number of organisations
Research	57
Education and training	29
Forest associations	23
Forest holdings or owners	17
Interest groups	30
Other interest groups	9
Agriculture	17
Food	7
Tourism	12
TOTAL	201

Following this we have asked the actors which is the most important organisation with which their own organisation generally **collaborates**. We have received 42 responses here, amongst which about half (23) name organisations which are linked to the forest sector:



Table 4: Organisations most collaborated with by actors across the regions:

Forest Sector Organisations	
Forestry Interest Group	6
Forestry Research center	7
Governmental Body (Forestry)	5
Forestry public service	3
TOTAL	21

Amongst these, the Forest Sciences Centre of Catalonia (CTFC, a Forestry research centre) is mentioned seven times. Under Governmental Bodies (forestry) we have subsumed the regional ministries of agriculture and forestry that were named. Forestry public services include national forestry services.

In collaboration activities, except for the regions where only one actor filled out this question in the questionnaire, ten actors are mentioned more than once and/or mention each other as being the most important collaboration partners. This is the case for

Table 5: Cross-mentioning of actors in collaboration

Actors	Indication of Actor (more than once)
INIA in Valladolid	3
Welsh county council in Wales and the Western Valley	2
Forstliche Ausbildungsstätte (FAST) in Pichl, Styria	2
Slovenian Forestry Service and the Slovenian Forestry Institute	2
Metla (now LUKE)	2
Arctic Flavours in North Karelia and the UNAC (=Uniao da Floresta Mediterranea)	2
TOTAL	21

Source: Table IV; Annex

3 Types of Innovations in the Innovation System

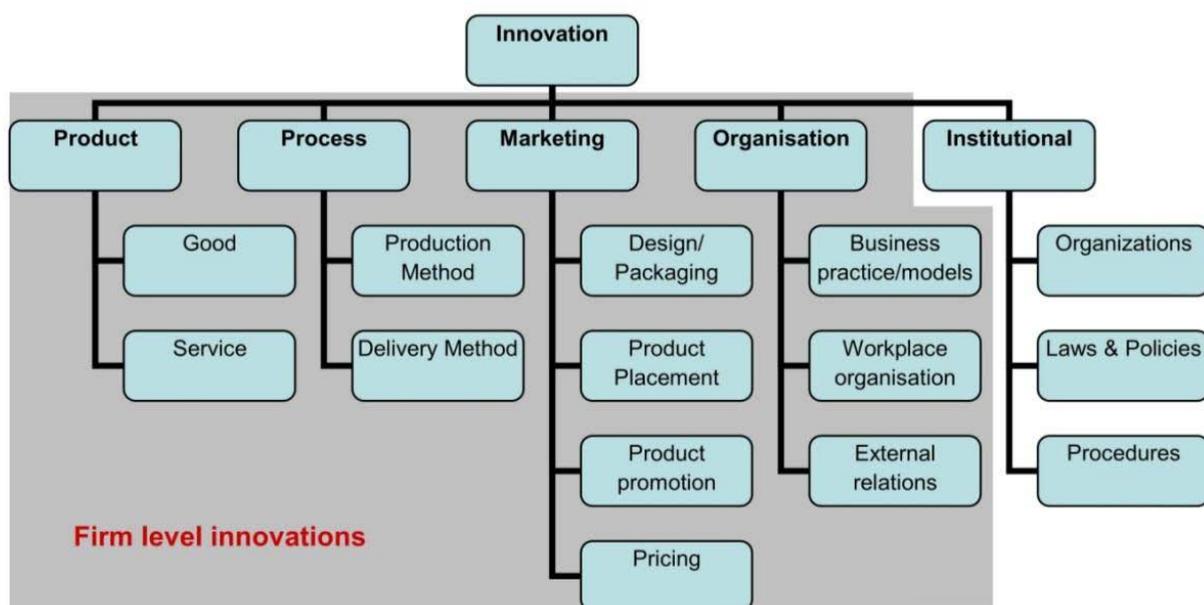
According to OECD (2005), innovations may be classified into product, process, marketing and organisational innovations. We further add institutional innovation as a separate category (Weiss 2010 et al.; see Figure 8). *Product innovations*: new or significantly improved goods or services (including technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics); *Process innovations*: new or significantly improved production or delivery methods (including significant changes in techniques, equipment and/or software); *Marketing innovations*: new marketing methods (including significant changes in product design or packaging, product placement,



product promotion or pricing); *Organisational innovations*: new organisational methods in a firm’s business practices, workplace organisation or external relations. *Institutional innovations*: changes in the political-institutional framework of the sector.

Many improvements or novelties cannot be implemented by market actors alone but depend on changes in the policy field or procedures (regulations or incentives) or joint action supported by public or semi-public organisation such as authorities or interest groups. This may be the creation of new markets (e.g. carbon trading) or joint actions (e.g. co-operation in the form of forest owners associations, industry cluster initiatives, etc.). It should be noted that that, in the real world, the categories of innovations often overlap or are combined, i.e. that the implementation of new technologies often need also changes in other fields, e.g. in workplace organisation, or, the marketing of a new NWFP need a new organisational form such as a producers’ cooperation, etc. The following figure outlines the possible influences and interrelations within such an innovation system.

Figure 8: Types of innovation



Source: Weiss et al. 2010 modified from OECD 2005

The actors named 35 “most successful innovations” in their region. Please note that in some regions more actors have filled out these questions than in others, however, each of them only had one possible innovation to name. The following table illustrates the examples and types most successful innovations according to innovation types.

Table 6: Successful innovations according to type (Weiss et al. 2010)

Region	Successful innovation	Type of Innovation (according to WEISS 2010)
Alentejo	Cork Transaction Platform as a new way to commercialize the cork, based on the annual cork quality field sampling.	Organisational Innovation (they organised a new platform)
Alentejo	Large scale soil carbon sequestration project with a payment for the forest owners	Institutional Innovation



Bursa	Kestano (Peeled, sweetened chestnut), Kestanella (Chestnut Dessert with milk), Chestnut Flour	Product Innovation (Good)
Bursa	Confits candied chestnut	Product Innovation (Good)
Catalonia	Monitoring of truffle plantations through the detection of mycelium in soils	Process Innovation (Technical Innovation in production mode)
Catalonia	The grouped commercialization of cork through association of landowners The choice of the product between cork for cork stoppers or grinding has enhanced the price of selling of cork for grinding thanks to an augment of its volume.	Organisational Innovation (grouped commercialization)
Catalonia	Regulation on mushroom harvesting.	Institutional Innovation (new regulation)
Catalonia	Creation of Quality Suber S.L. Integration between the forest owners and cork stopper industry for the enhancement of the financing of the cork extraction campaign and promotion and trade of Catalan cork.	Institutional Innovation (procedures)
Catalonia	Mushrooms, services of assessment and co- organization of the Pilot plan of regulation of mushroom picking in the area of the PNIN of Poblet (Natural park) for the introduction of a license for mushroom pickers	Institutional innovation (new pilot plan (=for a programme/regulation)
Catalonia	Regulation of mushroom harvesting in the area of the Natural Park of Poblet and its influence zone	Institutional Innovation (new regulation)
Catalonia	Participation in the elaboration of the NWFP legislation	Institutional Innovation (participation in a new NWFP regulation)
Catalonia	Specific molecular detection of edibles mushrooms in the soil- Production of mycorrhized forest plants with edibles fungi	Process Innovation (Technical Innovation in production mode)
North Karelia	Stand in Health Ingredients fair in Japan	Marketing Innovation
North Karelia	Development of the berry yield and season service for pickers. Based on permanent sample plots, the flowering time of berries, the development of berries (amounts and finally when the berries are ready for picking is reported both through newspapers as well as through the internet pages of Metla (http://www.metla.fi/tiedotteet/ennusteet.htm)	Product Innovation (Service)
North Karelia	Birch Sap: ready to drink cold beverage, packed in bottles	Product Innovation (Good) and Process Innovation (Technical Innovation in production mode)
North Karelia	The Nordic Koivu Ltd. concept of collecting and processing birch sap for using it as an end product and raw material for different applications in industrial scale. And marketing it globally.	Product (Good), process (Production method) and marketing innovation
Osrednje-slovenska region	Study trail Vremščica in the West part of the country.	Production Innovation (Service)
Osrednje-slovenska region	Cadastre of beekeepers in Slovenia	Institutional innovation (organisation of cadastre and coordination of beekeepers)
Osrednje-slovenska region	Rules for coordination of beekeepers in Slovenia	institutional innovation (rules for cadastre of beekeepers)
Osrednje-slovenska region	Abies alba, bark extract, marketed as food supplement under trade name Abigenol, and in development for herbal medicinal product.	Product Innovation (Good)
Styria	Wind, Water and Biomass for Energy	Product Innovation (Good)
Styria	Zirup (non-alcoholic drink, made out of zirbenzapfen)	Product Innovation (Good)
Styria	Green Burials Friedwald http://www.friedwald-schoecklland.at/	Product Innovation (Service)
Suceava	INTERNSHIP - Partnership for preparing young graduate students for launching their active life; contract POSDRU/99/5.1/G/75440. 51 unemployed people and 45 graduate people have participated to the	Organisational Innovation (external relations, workplace organisation)



	program	
Sumadija and Western Serbia	Tara off-road - establishment of an unique trail on Mount Tara	Product Innovation (Good)
Sumadija and Western Serbia	Organic production - Agrocluster Homolje (in Serbia, but NOT in Sumadija and Western Serbia region)	Product innovation (Good)
Trentino Alto Adige	"Associazione Castanicoltori Trentino Alto Adige", the association stimulate the use and the recovery of chestnut forests in the region, building up a marketing strategy on local fairs and common brand. "Mugolio" Production in Val Sarentina with three SME	Institutional innovation (organisation founded not only business interest)
Trentino Alto Adige	"Santorsola Cooperative". The cooperatives was able to relaunch the entire market of fresh forest berries (blueberry, raspberry, blackberry, black currant, and strawberry) though a process of selection of cultivars adapted for the local environmental condition. The cooperatives allowed creating large number of job opportunities and today it represents the leading SME on fresh berry production (over 90% of the Italian market). The company is not so much related to the forest, but is a successful example of a cooperatives of pickers transformed in a industry (see http://www.santorsola.it/Portale/SantOrsola/it/home.xml#)	Institutional innovation (organisation founded)
Valladolid	Mushrooms, as mycrotourism development and gastronomy based on mushrooms.	Product Innovation (Good)
Valladolid	Thinning mechanized on black pine reforestation	Process Innovation (Technical Innovation in production mode)
Valladolid	Modernization in resin extraction	Process Innovation (Technical Innovation in production mode)
Valladolid	Mechanized Apeo of fruit by vibrating machines.	Process Innovation (Technical Innovation in production mode)
Valladolid	Framework for introduce vibrating machines for prop pinecones machining	Process Innovation (Technical Innovation in production mode)
Valladolid	The region has made a commitment to the development of production and the market for non-timber products, since the adoption of the CyL Forest Plan in 2001. Leaving aside the action programs on hunting and pastoralism, has worked extensively in 4 sectors : Mycology, resin, pine nut and chestnut (Sectoral strategic Plan)	Institutional innovation (regulation)
UHAM/FVL (Waldmärker)	In 2009 the <i>Schutzgemeinschaft deutscher Wald (SdW)</i> invented an award ceremony for innovative environmental pedagogic initiatives in Germany. The intention is to promote and support innovation and superior projects in the field of environmental (forest) pedagogics. (€ 5000.-)	Institutional Innovation (procedures)
Wales	Nant yr Arian mountain biking centre	Product Innovation (Service)

It turns out that of these 14 are product innovations and 13 are institutional innovations, whilst technical innovations (process innovations) amount to six examples in the regions. Many examples are coming from the Spanish regions of Catalonia (institutional innovations) and Valladolid (technical innovations). One of the Catalonian organisations reports an unsuccessful try: A lot of tests made but none of them was successful: the municipal forests provide with a lot of NWFP but little income is obtained from their exploitation. And one of the Sumadija and Western Serbian actors from forestry reports that there was no innovation in NWFP in their realm.

Altogether, when the regional actors were asked for the main barriers they see for that particular innovation in NWFPs in their region, 11 respondents named external barriers to the project. Amongst the external barriers, most indicated a lack of finances and two projects have their biggest barrier in the legal regulations and administrative and bureaucratic procedures. Two respondents named conflicts between landowners and beekeepers (Waldmärker) and Cooperation between different stakeholders at the local level (Sumadija and Western Serbia). Eight respondents named internal barriers to the project, amongst which we have also subsumed the three answers that named "high costs" (the other side of the coin: lack



of finances) and “limited economic and personnel resources”. Three actors state that there was a lack of scientific, of technical know-how and of managerial experience for the innovative project. One actor (the forest owner association of Slovenia) says that it was hard for them to establish a dialog among policy making stakeholders in a project for hunting marketing, which could also be seen as an external barrier. One actor said that it was difficult for the product to remain competitive in the market (Trentino Alto Adige). The rest either said that there were no main barriers or they stated that the barriers are not too big, e.g. in Suceava, where the main problem of a paid internship project was that a part of the participants was more interested in the money than in the human resources development.

4 Discussion and Outlook

According to the survey results a lack of finances and economic costs were identified as one main hindering factor for the support of new innovations. The reasons for this may lie in the strong sectoral separation of the public administration (such as in Styria, Catalonia, Waldmärker) or in fragmented and inefficient bureaucratic systems and lack of trust between public and private actors (in Catalonia, Valladolid and also the Eastern European regions). Policy support may also be difficult to put in practice when capacities are lacking on the side of the sectoral organisations (Catalonia, Valladolid and the Eastern European countries). The regions under examination here all have different contextual factors and conditions. However there are some common features which would be fruitful for innovation in NWFPs (beside the usual suspects of investments into R&D):

Firstly a tighter cooperation between all actors (forestry, food and agriculture, tourism, business development) has to be developed. This should be done in combination with general (cross-sectoral) organisations and also political framework conditions that also target sectoral specific developments. In sum: Cooperation and institutions have to be strengthened. North Karelia seems to be a role model in this respect.

The Innovation System around the NWFP sector is developed across the regions in many more than one sector (forestry) and with a cluster organisation in North Karelia. The Styrian example shows how in a comparatively smaller sector than forestry, potential can be maximised through simple institutionalised cross-sectoral cooperation with for instance tourism organisations or nature parks.

Although the modes of production and the types of NWFPs differ very much across the STARTREE regions, the report detects the following similarities in their Innovation support systems:

- **Actors are balanced between forestry and other sectors** (Types of Actors, Table 1)

Thirty of the 53 identified key actors that filled out the Questionnaires are mostly from non-forestry sectors, and 23 are directly from the forest sector. Of the remaining 17 actors, seven are from “rural development”, which is very much linked to “agriculture” and at the end of the day also counts as part of the forestry sector. This way, there is an equal balance between the forestry and non-forestry sectors. When looking at the functions of the actors, there is a high representation of authorities and interest groups. R&D support institutions are least represented (five).

- **Support through actors more on initiation and technical support than on monetary support and financial consulting**

The identified key actors that have filled out the questionnaires have their main role in support either in the initiation of innovations (19) or in technical consultation (18). Financial support and assistance in



procurement of partners equals out (eleven responses each). That the “procurement of partners for cooperation” is prior activity in so many cases, implies that this form of innovation support has also a relevant position in the Innovation systems. Monetary support is underrepresented as main activity amongst the organisations. This confirms the responses on the main hindering factors that were identified by actors when they were asked to recall specific innovations in NWFPs in their regions, the majority named “lack of finances” as main problem.

- **Information needs mostly in the marketing of products and not in finances**

Most respondents (23) referred to marketing information that was lacking for them and many less to “information on finances” (eleven). Seemingly the actors are well informed about the financial possibilities, which hints to rather structural problems in the finance structures and opportunities of the surrounding innovation systems.

- **Policies of financial support with overweight of forest sector policies and less for entrepreneurship programmes**

The main policies of financial support reported from the relevant actors in the regions are first rural development (12), second forestry (ten); followed by research (nine) and regional development (seven). When we sum up rural development (that is agriculture) with forestry then forestry prevails. Entrepreneurship policies (business support for NWFPs) are only cited for six policy programmes.

- **Only few programmes target BOTH innovation AND NWFPs (together in one programme)**

The analysis shows that there are only few programmes dedicated to innovation in NWFPs (this is the Fondazione March in Trentino Alto Adige). The Styrian Wood cluster, which an organisation that is dedicated to innovation in the region, stated that they are not in charge of NWFPs and refused to respond to the survey.

- **Collaboration is existing with potentials to expand**

The analysis shows a level of interaction amongst the actors that have responded to the survey. In the responses it is very often the forestry actors that are the ones primarily mentioned as important collaboration partners. This shows that there is ongoing cooperation. Some of the responding actors have networking activities on their agenda. Nonetheless there are needs for more cross-sectoral coordination with the other relevant sectors that touch upon NWFPs.

- **Most often mentioned problems (barriers) for innovation are finances**

The most often mentioned problems and barriers for innovation with example of concrete innovation projects are finances (14 responses), followed by administrative and legal barriers (4) and several know-how barriers (3). The rest of the respondents did not identify “main barriers” for innovation. Most information needs are marketing information (and not financial information).

- **Most often represented type of innovation in NWFP: Product and Institutional innovations**

Most types of innovation that are mentioned are product innovations (14) and institutional innovations (13). Amongst the most frequently mentioned is NWFP-goods and amongst the second most frequent is the formation of organisations (associations) and implementation of new rules and regulations. Although the first finding is rather unsurprising (NWFPs are to big extent edible products), the latter hints to the importance of institutional innovations that are less market oriented in the economic sense.



In summary, in the NWFP-IS there is a need for strengthening cross-sectoral coordination of innovation-system-support actors, which involves intensified cooperation between forestry and non-forestry actors in order to also coordinate target instruments and measures for financial support.

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6 Annex

Table I: List of actors in the survey

Q2 – WP5 Innovation		Functional types	Sector	Other details
Alentejo (2)	APFC (Forest owners association from Coruche)	Interest group	Forest	Technical support / Cork commercialization
	UNAC – União da Floresta Mediterrânica	Interest group	Food	
Bursa (3)	Kafkas Pasta Şekerleme San. Tic. A.Ş.	Interest group	Food	
	İlka Şekerleme Mam. Ve Gıda San. Ltd. Şti	Interest group	Food	
	Akillioglu İth. İhr. Paz. Ltd. Sti.	Authority	Food	
Catalonia (10)	IBERTRUF SCP	Interest group	Food	Production and commercialization of mushrooms and truffles
	ELFOCAT (Catalan Association of Local Forest Ownership)	Interest group	Forest	Forestry (representative of local public ownership)
	Centre of Forest Ownership (CPF)	Authority	Forest	Primary forest sector
	Iniciatives Gastronòmiques del Solsonès, S.L (ElMonegal)	Interest group	Tourism	Hotel industry
	J Catalan Forest Consortium (CFC)/ Forest Services SCCP	Authority	Forest	Other: Forestry
	Fundación del Món Rural	Advisory	Rural development	Environmental & Recreational Services Information & Communication Technologies
	Spanish Federation of Truffle producers Associations (FETRUSE)	Interest group	Food	
	Natural Park of Poblet (Province of Tarragona) (Paratge Natural de Poblet-DAAM)	Authority	Environment	Administration (Catalan Government of Generalitat): Department of Agriculture, Livestock and Fisheries (DAAM)
	Forest Management Service (Department of Agriculture, Livestock and Fisheries of the Catalan Government)	Authority	Forest	Forestry
	Research & Technology, Food & Agriculture (IRTA)	R&D	Food	Food industry
North Karelia (5)	Arctic Flavours Association (Arktiset Aromit ry)	Interest group	Forest (NWFP)	Promotion work for Non-Wood Forest Products
	Pohjois-Karjalan Martat Ry	Advisory	Forest (NWFP)	Information and education on NWFPs
	Finnish Forest Research Institute (Metla)	R&D	Forest	forestry, research organization
	North Karelia Municipal Education and Training Consortium/Adult education (PKKY)	Education & training	Regional development	Education and information on all above mentioned
	Joensuu Science Park Ltd.	R&D	Innovation and start-up support	Product and business development, rural development
Osrednje-slovenska region (5)	Forest owners association of Slovenia	Interest group	Forest	Networking and coordination
	Ministry of agriculture and the environment, Sector of forestry	Authority	Forest	governmental body
	Slovenian Forestry Institute	R&D	Forest	Research organisation
	University of Ljubljana, Biotechnical faculty, Dep. for forestry and renewable forest resources	Education & training	Forest	Faculty - education, training and research
	University of Ljubljana, Faculty of pharmacy	Education & training	Chemical	Research and education
Styria (5)	Asamer-Handler & Co OG	Interest group	Rural development	Consultancy
	Forstliche Ausbildungsstätte Pichl der Landwirtschaftskammer Steiermark (Fastpichl)	Education & training	Forest	Education for Forestry, Seminars and Courses, Training



	Leader Zirbenland	Interest group	Chemical	
	Landwirtschaftskammer Steiermark	Authority	Rural development	Environmental and Recreational Services
	Styrian Forestry Board (A10-Landesforstdirektion)	Authority	Forest	forestry authority
Suceava (1)	Asociatia Centrul De Incubare Creativ Inovativ De Afaceri	Interest group	Innovation and start-up support	Social - Human resources
Sumadija and Western Serbia (3)	Ministry of Economy - Sector for tourism	Authority	Tourism	tourism
	National Agency for Regional Development-Directorate for the development of enterprise and entrepreneurship	Authority	Regional development/innovation support	Support to SMEs, entrepreneurs, local governments and regions
	Ministry of agriculture, forestry and water management - Directorate for forests	Authority	Forest	State administration
Trentino Alto Adige Italy (2)	Province of Bolzano	Authority	Regional development	The key actor is transversal to several sector (all in this case)
	Province of Trento - Forest and Silviculture Planning Office (Provincia di Trento -Ufficio Pianificazione forestale e selvicoltura)	Authority	Forest	Transversal to all the listed categories (Chemical, craft etc.). The office manage the production and define the harvesting right for the NWFP at species level
Valladolid (7)	Asociación Vallisoletana de Micología	Interest group	Food	Study, cataloging and dissemination of Mycology
	Asociacion Forestal De Valladolid	Interest group	Forest	Association
	Federación De Asociaciones Forestales De Cyl	Interest group	Forest	Forests Private Owners (Non profit Entity)
	Cesefor	Interest group	Forest	Forestry services in general
	Servicio Territorial De Medioambiente De Valladolid, Junta De Castilla Y León	Authority	Regional development	Primary Sector
	Servicio Territorial De Medio Ambiente De Valladolid	Authority	Regional development	Primary Sector
	Junta de Castilla y León. Dirección General del Medio Natural	Authority	Regional development	Public Administration
Waldmärker (1)	Schutzgemeinschaft deutscher Wald - SdW	Interest group	Forest	
West Wales and The Valley (9)	Planed	Advisory	Rural development	NGO; Community-led Organisation
	Vera Bluebell limited (and Bangor University)	Interest group	Forest (NWFP)	supply of seeds and bulbs from a sustainably managed wild bluebell population (under licence)
	Ceredigion County Council - Cynnal y Cardi	Interest group	Rural development	RDP LEADER funded project - community groups and individuals
	Wales Co-operative Centre	Advisory	Innovation and start-up support	Enterprise development, services to deliver social justice, equality and equal opportunity
	Ceredigion County Council	Authority	Regional development	Community Development/regeneration
	Antur Teifi	Advisory	Innovation and start-up support	Business Support
	Forest Research	R&D	Forest	Research and evidence
	Ceredigion County Council	Authority	Tourism	Local Government
	Adventa	Authority	Rural development	NGO; Community-led Organisation
TOTAL number of interviews	53			



Table II: Policy Programmes listed by key experts (CSRs) that are relevant for innovation

FOREST SECTOR		
Region	Level	Name of the program
Bursa	national	National Forest Programme (X Development Programme)
Catalonia	national	Spanish National Forest Strategy (1999)
	national	General Forest Policy Plan
	regional	Catalonian "General Forest Policy Plan" (2014)
Latvia	national	The Latvian Forest (2000)
	national	Latvian Hunting Law (2006)
North Karelia	national	Finnish Forest Programme
Osrednjeslovenska	national	Resolution On The National Forest Programme (2007)
Styria	national	Austrian Forest Act (1975)
	national	Austrian Forest Programme (2006)
	national	The Styrian Hunting Law (1986)
Suceava	national	Forest Code (Law 46/2008)
Valladolid	national	Law No. 130/1999 On Mycological Harvesting
	regional	The Strategy "Regulation And Marketing Mycological Resources In Castilla y León Project – MYAS Rc"
	regional	Legal Act "MAM/341/2008" - Regulates The Use Of Closed Pine Cone Of <i>Pinus pinea</i>
	regional	Legal Act "AYG/1815/2008" - Regulates The Accreditation Procedure Of Traceability In The Trade Of Pine Cones And Pinions In Castilla Y León
	local	"Breeding Programme Of <i>Pinus pinaster</i> "
FOOD SECTOR		
Bursa	national	Act SANTEZ in the field of food products - for supporting START-UP businesses
North Karelia	national	Food act (23/2006)
	national	Finnish Income Tax act (1535/1992) – parts which touch upon food
	national	Legal acts that regulate "everyman's right" - for accessing and harvesting NWFPs
Trentino Alto Adige	national	Chestnut sector plan (2010)
Valladolid	national	Law on Quality Standard Rules on edible mushrooms (1984)
	national	Royal national law No. 30/2009 - on health conditions for the marketing of mushrooms
Waldmärker	regional	Directive "for the granting of subsidies to improve the production and marketing conditions of products derived from bee-keeping"
INNOVATION		
Alentejo	national	Portuguese standard NP 4457:2007 - requirements for RDI as well as Innovation Management Systems
Bursa	national	Legal act and programme TÜBITAK 1001, 1007 - funds scholarship and research in the field of innovation
Osrednjeslovensk	national	Resolution on National Forest Programme
	regional	Regional development programme of Ljubljana urban region
Styria	regional	The Wood Cluster Styria Ltd. (2001)
Suceava	national	National Plan for Research-development and Innovation (2007-2013)
Šumadija and Western Serbia	national	Strategy for Development of Competitive and Innovative Small and Medium-sized Enterprises (2008-2013)
West Wales and The Valley	national/regional	Strategy "Innovation Wales" (2013)
RURAL DEVELOPMENT		
Alentejo	EU	PRODER (LEADER, from 2009-2013)
North Karelia	national	Finnish national rural development strategy (2007)
	national	Rural Policy Programme(2009-2013)
	regional	Regional Programme on Rural Development in North Karelia 2007-2013
Osrednje-slovenska	national	Slovenian Rural development programme (2007-2013)
Styria	EU/local	LEADER policy programmes at the local implementation level: LEADER-Region Land of the Stone Pine and LEADER-Region WoodWorld Murau
	national	Austrian Programme for Rural Development 2007-2013
	regional	rural country development programme ("Landentwicklung")
Suceava	national	Rumanian National Programme for Rural Development (2007)
Šumadija and Western Serbia	national	National Rural Development Programme (2011-2013)
Trentino Alto Adige	national	Enterprise development program "Sviluppo d'impresa" (2004)
	regional	Rural development plan (Piano die Sviluppo Rurale) 2007-2013 - important for financial measures
Valladolid	regional	rural development plan of Castilla y León

Waldmärker	regional	Directive "GIRD - Grants for integrated rural development"
West Wales and The Valley	regional	Rural development plan for Wales
REGIONAL DEVELOPMENT		
Alentejo	national	INALENTEJO (2007-2013) - for supporting regional development (co-funding: EFRE)
North Karelia	regional	Regional Forest Programme of North Karelia (2012-2015)
Osrednje-slovenska	regional	Regional development programme of Ljubljana urban region (2007-2013)
Styria	EU	European territorial Cooperation
	regional	"Endogenous regional development" policy programme ("Eigenständige Regionalentwicklung")
West Wales and The Valley	regional	Rural Development Plan for Wales
SUSTAINABLE DEVELOPMENT		
Alentejo	national	COMPETE - an operational programme for increasing competitiveness of firms in general at EU-level
Suceava	EU	LIFE+ (2007-2013) - funded under Regulation (EC) No 614/2007 - supporting the implementation, updating and development of EU environmental policy and legislation
Šumadija and Western Serbia	national	National Strategy for Sustainable Use of Natural Resources and Goods
Waldmärker	national	National development scheme for renewable resources
AGRICULTURE		
Styria	local	Local label - the "Genuss Region Gesäuse Wild" (Gourmet Region Game from Gesäuse Mountains)
	national	Austrian Gourmet regions as a policy programme(2003)
Šumadija and Western Serbia	national	Strategy on Agricultural Development
Trentino Alto Adige	national	National MAP sector plan (2014) (Piano di Settore delle filiere di erbe officinali)
TOURISM		
Styria	local	"National Park Gesäuse" - policy programme of relevance for innovation in NWFPs
	regional	Nature Parks Styria - as a label and association

Table III: Type of actors and role in innovation projects

		Initiation	Funding advice	Legal advice	Technical consultant	Advice	Training education	Financial support	Partner procurement
Interest group	Forest	7		1	4	2	3	1	5
	other	4	2		2	2	2	2	1
Authority	Forest	1	1	3	3	1		3	2
	other	3	1	4	5		1	3	
Advisory	Forest	1			1				
	other	2	1	1	2		1	1	1
R&D	Forest	1							
	other					1		1	1
Education & training	Forest						1		
	other	1	1	1	1	1	2		1
TOTAL		20	6	10	18	7	10	11	11



Table IV Cooperation across responding actors (by region)

Region	Type of actor	Innovation support organisation
Alentejo	Forest associations	UNAC
Catalonia	Forest associations	Catalan Forest Consortium (CFC)
	Forest associations	Landowners' association of the Montseny (Catalan forest)
	Forest holdings or owners	Forest Ownership Centre (CPF)
North Karelia	Other interest groups	Arctic Flavours
	Research	Technical research centre of Finland (VTT)
	Research	Metla (The Finnish Forest Research Institute)
Slovenia	Research & Education and training	Biotechnical faculty, dep. for forestry
	Forest associations	Forest owners association of Slovenia
Styria	Interest groups	Landwirtschafts-kammer
	Education and training	Forstliche Ausbildungsstätte Pichl
Suceava	-	No cross mentioning
Serbia	-	No cross mentioning
Italy	-	No cross mentioning
Valladolid	Forest associations	AGRICULTURAL ASSOCIATIONS
	Agriculture	INIA
	Research	CESEFOR
	Research	CIFOR
	Research	UVa
	Education and training	ASFOVA
	Education and training	PIÑONSOL
Wales	Tourism	County Council, Wye Valley Tourism Assoc. (Local) AONB

