FINLAND

Innovation policy promotion for growth & employment and new entrepreneurship in forest related value chains

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Abstract*[1]*: *Policy target formation and agenda matters in Finland what concerns innovation policy for forest related value chains. Forest policy objectives are national whereas rural and regional development objectives have EU relations & coordination behind creating fundamental differences in policy orientation what concerns innovation promotion and policy implementation for forest related value chains in Finland. National policy targets and top down policy agenda characterize forest policy and Finland's National Forest Program 2010 (FNFP2010).Innovation promotion was adopted into the original agenda of the program but it was changed into the foresight activity by the time of implementation. The connections between FNFP 2010 and Rural or Regional Development Policies have not been intensive. Rural and Regional Development Program have been among the main supporting policies what concerns new entrepreneurship and innovation development among SMEs in forestry, wood product and non timber entrepreneurship. The implementation of regional innovation policy actions has been inter sectorally coordinated through Regional Centres of Employment and Entrepreneurship (TE Centres). TE Centres allocate public support on new entrepreneurship and innovation processes. Interconnections among rural & regional development & innovation policies have been derived through the regional strategies processed by Regional Councils. Co- operative planning has supported both in Rural and Regional Development Policies what concerns regional, national and EU based policy objective coordination. Innovation policy progress in Finland is divisible into four stages. National Innovation System was created in the early 1990's as one of the pioneers in Europe. Cluster approach adaptation in the early 1990's activated policy expansion towards Sectoral Innovation System. Finland's EU membership in the mid 1990's challenged the coordination between national and regional policies and supported the formulation of Regional Innovation System. Development of National Innovation System goes mainly through national institution TEKES and their regional agencies and risk financing organisations SITRA and FINNVERA. These organizations allocate direct public support for individual firms and projects. TEKES has also been active in Sectoral Innovation System development on national level through sectoral technology programs. Regional Innovation System has been created through two channels a) creation of regional intellectual capacities and strengthening of institutions and structures participating to the development and b) formation of regional based Sectoral Innovation Systems. Regional Centre Programs (for 34 city areas) are aimed to implement target a) for Regional Innovation System and Centre of Expertise Program has been among the major national policy initiatives in towards target b) for Regional Innovation System strengthening. There has been Centre of Expertise Network on Wood Products (PuuOske) aimed to support regional innovative milieu development but also social capital towards forest based value chain creation. There has been implemented number of technology programs that have supported policy formation and value chain creation in regional context. The supportive actions to Regional Innovation System are mainly outcomes from Rural and Regional Development Policy actions and programs. The recent Entrepreneurship Policy, a Finnish speciality, also supports national and EU based policy coordination. The networked advisory services on wood product entrepreneurship (PuuSuomi) have supported rural SME development related to Forest Based Industries Policy and Renewable Energy Policy respectively. Promotion of wood product SMEs has been a separate target in Rural Development Policy activities supporting the strengthening of innovation capacities in related companies and firms.*

[1]compiled by Pekka Ollonqvist*

1. Introduction

1.1. Innovation Policy in Finland

Innovation policy progress in Finland can be divided into four stages[2] . The systematic innovation policy initiated with high tech solution support in sustaining dominant industries. New innovation policy stage was attained when the support activities were directed to promote radical innovation processes towards new large international high tech corporations and business networks related to the locomotive high tech industries. Innovation policy aimed, only for high tech processes through National Innovation System was expanded and new public support activities & tools were developed and carried out through a) Sectoral Innovation System (mainly in the form of technology programs) and Regional Innovation System (mainly through enlargements and coordination of regional intellectual capacities). Current Innovation policy in Finland focus on a) expanding business and service innovations and b) Public Private Partnership solutions & networks towards successful innovation processes among SMEs (e.g. technopolis structures).

1.2. Country report contents

This country report is aimed to cover themes:
a) a concise description from the main features in innovation policy in Finland. This description identify the creation of National Innovation System (NIS) and consequent expansions to Sectoral Innovation System (SIS) and Regional Innovation System (RIS) in respectively. The four innovation policy stages in Finland are discussed and parallel policies concerning strategic (sustainable development and innovation), infrastructure creation (rural and regional) and business & entrepreneurship promotion (forestry, forest based industry & renewable energy production) are identified.
b) detailed evaluation of the relevant policies in the COST action: Forestry, Forest Based Industries, Innovation, Rural Development, Regional Development, Sustainable Development & Renewable Energy and are presented. A Finnish speciality concerning the policy for new entrepreneurship, Entrepreneurship Policy, is also briefly discussed.

c) evaluation of inter sectoral policy coordination in general and that of innovation policy implementation in particular.

[2] Oksanen, J. 2003. Finland – Innovation Policy Trends in the Nordic Countries, Historical reviews. In Koch, P & Oksanen, J. (eds.) Good Practices in Nordic Innovation Policies. Part 2. Innovation Policy Trends and Rationalities. Step report 7/03. Oslo

1.3. Innovation policy stages in Finland and parallel actions in relevant policies

Innovation policy I: High tech solution support in sustaining dominant industries

Innovation policy in Finland was focused up to the late 1980's to high tech innovations and linear innovation processes and implemented in the industrial policy based on direct firm subsidies and regional and sector subventions. Systematic public policy to business R&D was preceded by the establishment of The Scientific Council (1963), Public Foundation Supporting Risk Investments & Innovations (SITRA) in 1967, Regional Development Financing Fund (Kera) in 1971. SITRA started systematic national technological program activities in the mid 1980's. Innovations were new technical solutions and the conditions related to their commercial success were not on the agenda.

Allowance preconditions required from a firm to public innovation subsides were intra firm (or firm connected) innovation capabilities and resources for linear innovation processes. Production and innovation system in Finland was characterized by strong national orientation and by strong influence of large nationwide corporations. prior to the 1990s. Policies supporting innovation activities were directed towards new technical solutions. Promotion on the conditions related to their commercial success was not outstanding. The major assumption behind the agenda was the systemic competitive advantages related to technical innovations. The innovation activities in forest sector industries were driven by big companies. The support systems related to joint interest research institutes and firms like KCL (a research company owned by Finnish pulp, paper and board industries) focused on technological solutions based on laboratory research or engineering development.

Key features during Innovation policy I (prior to 1990's)

Forest policy: Progressive timber management dominated forest policy in Finland from the early post war years on. Extensive public subsidy programs to timber production investment in NIPFO forests were subsequently launched during a decade first 1960-70 and again 1980-90. Policy agenda was highly sector oriented and preparation and majority of implementation can be characterized by patterns applying corporatist structures. Policy concerning innovative solutions was technology oriented: the development of a) wood harvest mechanization for efficient wood procurement and b) planting culture targeting high productivity plants and commercial nursery for selected plants were in the innovation policy agenda to be assisted by public financing. The policy attempts towards new regular joint interest activities (joint management/ company modes) among non industrial private forest owners could not be implemented.

Forest Based Industries Policy: Industry development policy aimed to create opportunities for new products and more efficient production capacity especially in pulp and paper industries. The creation of competitive advantages in international

markets was partly assisted through national consolidation processes. The efficient utilization of positive economies of scale was applied in the creation of competitive advantages in pulp and paper product segments. The international business strategies were developed parallel with product and process innovations through intra firm innovation processes and by using intra firm R&D resources in addition to some joint research interest institutes. R&D activities were arranged through linear intra firm processes for the most. Growth of wood product departments in the main forest industry companies stabilized parallel with the stabilization of European wood product markets. The intra firm vertical value chains in wood product segments were dissolved through outsourcing or closing of secondary wood frame construction businesses. There are not many innovation processes identifiable in wood product industries from 1970- 1980's. Positive economies of scale with standard low added value products were the major source of competitive advantages in primary wood product industries.

Rural development policy: The original rural policy in Finland applied joint outlines and strategies with policies of other sectors, in particular those of agricultural and regional policy. Rural policy was primarily agricultural policy up to the 1960s with national self-sufficiency as the main goal. First formal rural policy agenda was introduced in 1983. The policy document was an output of the rural development committee II. The outcome of the policy document was the Rural Development Project aimed to be implemented during 1988-91. Project agenda listed the first tools of national policy.

Regional development policy: The early regional development policy aimed to economic equalization of regions was substituted with the geography approach of well-being and development. Regional development planning was an essential part in the Planning Department at the Prime Minister's Office. Policy agenda was top down and directly connected to macroeconomic planning of that time. Policy was targeted to declining old industry for productivity improvement in the existing strong industries. Instead of the traditional belt-like territorial divisions, regional support policy gained a more urban structural dimension (Vartiainen 1998). Special legislation for development area allowed loan and interest subsidies tax relieves and transport aids mainly to equalize profitability differentials in investment decisions.

Sustainable development policy: Policy activities related to sustainable development were issues and conditions on warranted economic growth up to the late 1980's. Sustainability of allowable cut reserves were of major concern in forest sector policies. Policy actions to promote annual yields and smoothly expanding annual harvests in non commercial private forestry dominated forest policy. The gradual growth of environmental issues brought forth new sustainable development policy issues. The establishment of Ministry of Environment 1983 reformulated inter sectoral activities towards sustainability.

Renewable Energy Policy: Intensive research for wood based energy processes (oil price shocks 1973 and 1979 respectively). Activities diminished gradually without remarkable new permanent capacity increments.

Innovation policy II: Promotion to large international high tech corporation/networks creation

New national industrial strategy formation, initiated during the early 1990's was preceded by the establishment of TEKES in 1983, national technology programs in 1984. The Finnish Science and Technology Policy Council (established 1987) introduced a concept of national innovation system at the early 1990's among the first countries in Europe. Targets for policy implementation were a) to strengthen the resource base on R&D and b) expanded researcher training. The new policy agenda was aimed to promote quantity and quality of resources through institutional changes to implement the new R&D policy agenda. Policy and institutions applied modern industrial policy thinking. TEKES became the key agency for new technology-oriented policy and made large involvement of supportive factors (eg the creation of NIS) to improve and intensify the utilization of new knowledge and know how (R&D, education and business firms). Policy was successful and provided potential for the development among the business networks of fast growing international corporations in new clusters.

International challenges Innovation policy II (during the early 1990's)

Forest policy: The transfer of Forest Policy objective from the progressive timber management to the sustainable forest management with dimensions of ecological and social sustainability originates from the resolutions of Rio Summit on Sustainable Development. The targets of ecological and social sustainability became parallel with those of economic sustainability due to enlarged international targets of sustainability.

Ecological and social sustainability were included as separate and identifiable sustainability dimensions parallel with economic sustainability. Finland has been active in the international processes (UNCED 1992, IPF1995-97, IFF 1997-2000, UNFF 2001- and MCPFE 1993-) that has created and updated principles of sustainability in forest management. The formal environmental program for forestry and criteria and indicators on sustainability were adopted 1994. Prior corporatist forest policy agenda was enlarged through arenas and forums providing participatory for forest relevant non- governmental organizations. Inter sectoral coordination: extensive participation of relevant public institutes (Ministries in Forest Council and regional authorities in Regional Forest Councils) was established in program preparation.

Forest Based Industries Policy: This policy was aimed to create opportunities for capacity expansion especially in pulp and paper industries. Three pulp and paper corporations were created through national and international consolidations. The tenure of the two corporations became international through listing into international Stock Exchanges. The global business strategies were adopted by those corporations. The R&D resources continued to be intra firm bases except some joint research interest institutes. R&D activities were arranged through

linear intra firm processes for the most. Major shift in FBSP occurred in 2006 with the plan to establish a joint enterprise with members from private and public organizations aiming for new and more radical innovations than earlier in chemical wood processing.

Rural Development Policy: There were three subsequent rural policy programs published in 1991, 1996 and 2000 by 2004 the fourth one. Finnish rural policy in those subsequent programs have consisted both broad and narrow policies: the mode of two parallel programs have been continued during the EU membership. Rural policy agenda focuses on a) mobilising the rural people at all relevant functional levels, b) on networking and c) on creating and applying alternative modes of action. Rural policy system can be regarded as a system innovation in policy but should be called an operational innovation at local action level.

Regional Development Policy: Provincial development allowances were provided to distant rural regions from the early 1980's to create new rural vitality through preservation of village level services. Policy agenda transfer was implemented through the regional policy assignments to the Ministry of the Interior providing arena to the representatives of local and regional policy stakeholders to promote regional specific development policy targets (Lievonen & Lemola 2004). Local development policy planning was allocated to Regional Councils in 1994 and preceded by program-based regional development launch some years before. Regional Development Act 1993 formalized independent and territorially balanced development. This new approach formalized bottom up agenda to policy promoting regional development eg. Through special program disciplines: regions with development and structural change respectively, centers of expertise and rural areas.

Sustainable Development Policy: National guidelines for sustainable development in Finland were written, already, in 1989 inspired by the report of Bruntland Commission in 1987. In the UN (UNGASS), as early as 1997, Finland reported the strategies of sustainable development. The international policy reformulations brought forth Sustainable Development Policy as the strategy principle into sectoral and intersectoral policy activities.

Innovation policy III: towards integrated NIS & SIS &RIS

Two new dimensions were included into NIP in the late 1990's: cluster approach and Sectoral Innovation System (SIS) correspondingly from 1996 on and the creation of Regional Innovation System (RIS) and the Centres of Expertise for implementation from 1994 on. The two new systems expanded the sphere of implementation in NIP by accepting embedded knowledge and value chain specific innovation potentials. Public sector started to allocate resources to facilitate and promote innovative RIS infrastructures (innovative milieus & learning districts). Major tool applied was the first Regional Centre program (1994-1998). TEKES carried out large sectoral technology programs during the late 1990's. These programs provided public resources for scientific organisation but also for

individual firms to be used in their innovation processes. Those applied in wood product cluster are discussed in Forest based sector policy chapter. The structural development funds available trough EU Structural financing implied renewed approaches to RIS. Another step of development was carried out from the beginning of the 2000's through the second Regional Centre program (1999-2006). NIP policy implementation through RIS was realized by creating knowledge regions based on co- operation activities among regional stakeholders (universities, polytechnics, adult schooling etc.). The enlarged innovation policy aimed to support a) technology innovations but b) also provided better access to firms for using regional knowledge base in their innovation processes[3].

Key features during Innovation policy III (EU membership from 1995)

Forest Policy: At the European level the national forest policy actions in Finland have taken into account the final acts of the ministerial conferences including criteria and indicator work. At the national level the sustainable forest policy is connected to the work of Finnish National Commission for Sustainable Development (FNCSD). Since 1993 the sustainable forest policy has been realized through several political actions, the most important being Finland's National Forest Program 2010. The programme also addresses the sustainable NWFP use of forests.

The Finnish criteria and indicators for sustainable forestry, which are developed and renewed by a work group appointed by the Ministry of Agriculture and Forestry, provide a basis for sustainable forest policy. The renewed set will be ready in summer 2007. The promotion of forest-based innovations was in the agenda of Finland's National Forest Program 2010. The proposed forum for innovations took the form of Future Forum on Forest of Finland (FFFF). The Forum was started in 2003 at the Faculty Forestry in Joensuu University. FFFF provided an arena for multidisciplinary and multi sectoral approach to search for innovative ideas for the evolving forest-based livelihoods and to foresee changes in the operational environment of forest sector organizations. A background development scenario was prepared by Finnish Forest Research Institute during 2007 for FNFP 2015 revision activity, outlined by Forestry Council. The FNFP 2015 is aimed to a) secure the wood supply for timber processing industries threatened by the announced and radically higher timber export taxes of Russia, b) improving the conservation of forest biodiversity as a part of sustainable forest management and c) supporting a wider structure of livelihoods and entrepreneurship based on the utilization of forests and wood. It is likely that the positive experiences from the voluntary contract system for non industrial private forest owners to conserve nature valued forest environments (METSO) will lead into its extension alongside

[3] Lievonen, J & Lemola, T. 2004. Alueellisen innovaatiopolitiikan haasteita - tutkimustulosten tulkintaa. Alueiden kehittäminen Sisäasiainministeriö. Julkaisu 16/2004. Helsinki.
Lemola, T- 2005. Innovaatioympäristö innovaatiotoiminnan ehtona, tukena ja talouskasvun lähteenä. teoksessa Hyytinen, A. & Rouvinen, P. (toim.), Mistä talouskasvu syntyy.: Helsinki.
Lemola, T.2006. Alueellisen innovaatiopolitiikan suunta. Kauppa- ja teollisuusministeriö. Julkaisu 10/2006. Helsinki

the FNFP 2015. Both programmes (the FNFP 2015 and the METSO –program) are planned to be decided in January 2008 by the Finnish Government. It appears that the FNFP 2015, although prepared in a participatory manner, will remain top down planned policy document, which is seeking the highest possible consensus among the participating organizations and stakeholders. This holds a risk that the FNFP 2015 concentrates only on issues like forest growth, timber supply and ecological sustainability that are already well represented in the forest policy and organizations' and stakeholders' priorities. Looking for a high consensus may inhibit the opportunities of new issues like organizational innovations or development of new forest and wood uses to appear high in the policy agenda.

Forest Based Industries Policy: The outsourcing of production capacity has continued in global business corporations since the turn of the millennium. The investment decisions are based on global strategies both in pulp and paper and wood product industries. The promotion of wood product SMEs has been a separate target in Rural Development Policy activities for new rural entrepreneurship. The Centers providing wood product and wood frame construction expertise have had network mode. The networked advisory services on wood product entrepreneurship (PuuSuomi) have supported rural SME development. The system of Centers of Expertise (PuuOske) has been among the public initiatives through regional development activities to create support on the strengthening of innovation capacities in related companies and firms. These centers have brought together the R&D potentials from universities and research centers to build up permanent or temporary capacities and networks combining business and R&D interests for innovation activities. Centre of Expertise for Wood Products 2003–2006 expanded the field of interest what concerns the future development of wood product value chains. The recently established Centers of Expertise, including the Forest Industry Future- supporting wood fiber solutions, Future Energy Technologies- supporting wood based energy solutions and Living Cluster- supporting wood based construction, are aimed to support value chain creation based on the utilization of existing structures of the Finnish innovation system. The Finnish Forest Cluster Research Portal from 2007 on and joint interest company Forest Cluster Inc. are aimed to provide arenas for new partnership among R&D communities and business firms (see FBSP). At the same time as the system of Centers of Expertise and other initiatives have tried to support the development of Finnish based forest industries, the outsourcing of production capacity of large international corporations has continued in a global scale. The investment decisions of large international corporations have been based on global strategies both in pulp and paper and wood product industries. Nationally, it is expected that the public support for R&D and the business supporting innovation structures will motivate the forest industry and forest cluster firms to keep their production in Finland.

Innovation policy: The development of regional dimensions of Finnish innovation policy was mainly motivated by the regional policy of EU through membership from 1995. Also the deep recession and subsequent fundamental transformation of the Finnish economy in the beginning of the 90's opened up new opportunities for economic restructuring of actors and development activities also at the

regional level. The establishment of the new Employment and Economic Development Centres provided ways for concentrated support delivery to enterprises on regional level. There were systemic steps, e.g. Centres of Expertise Programme, the Programme of Regional Centres, applied in integration of innovation policy activities in Finland.

Entrepreneurship Policy: Innovations and entrepreneurship: Policy program of Government Strengthening of knowledge- based entrepreneurship through fast intake of commercial ideas and new technology solutions into the bases of competitive advantages. Important tools for sustainable managerial solutions aimed to intensify the more efficient use of knowledge resources and competent employees. Innovation policy is aimed to strengthen innovation capability with focused knowledge investments into the promotion of competence creation and risk entrepreneurship.

Rural policy: A bias towards individualistic approach has been identified from the rural policy of early 1990's. The issues related to autonomous business development and self-governing entrepreneurs was enlarged only by network formation for the rural activities without adequate links to the rest of the value chain. Component manufacturers could combine their input to the final product, which was then intended to be manufactured in large enough quantities to meet the quantity demand of the market instead of creating truly innovative solutions. The solutions that became permanent in this context were consolidated firms that turned to become cost leaders and provide their services as subcontractors of large retail companies or other core firms. Gradually the national rural area innovation policy is more and more closely linked to bringing together the regional strengths and expertise underlining the increasing role of clusters of expertise and enterprises. The EU co-financed Rural Development Programme for mainland Finland 2007-2013 determines the policy framework more than national rural policy programme targets or means fulfilling also strategy principles of EU Commission what concerns innovations and forest policy. The policy priorities related to forest based value chains the production and use of wood energy and other forms of renewable bio energy are mentioned. The development of knowledge base and skills among non industrial private forest owners in the use and management of forests and to maintain the diversity of forest nature are in the agenda.

Regional Development Policy: National governance with top down preparation and implementation traditions has to some extent been decentralized after EU membership to meet the implementation requirements of the EU programmes. Central administration has delegated some power and responsibility to its regional line organizations – mainly the task of delivering EU development / Structural Funds programme money. Regional Councils are responsible for designing an overall development strategy (including innovation policy), the so-called Regional Strategic Programme, which should combine and direct all other development programmes in the region. The concrete impact of the Regional Strategic Programme varies from Region to Region.

Sustainable Development Policy: The formal adoption of Sustainable Development Policy into the policy formation took the form: continuous, guided process of societal change at the global, regional and local levels, aimed at providing every opportunity to present and future generations to live a good life. The broad definition added explicitly the three operational dimensions: economic, ecological and social & cultural. Innovativeness in sustainable development context enhance the approach referred to as a „Finnish Model", which means both high-level political leadership combined with networking co-operation and programmes of the administration, scientific and civil organizations. Finland's policy process observes the European Union sustainable development policy in accordance with the Lisbon Strategy (2000). The targets of National Strategy and Action Plan for the Conservation and Sustainable Use of Biodiversity in Finland for 2006-2016 are included into the National Strategy for Sustainable Development covering also the Action Plan for the protection of forest biodiversity.

Renewable Energy Policy: Majority of wood based energy is processes in forest industries as sub products or sub processes respectively. The increasing scarcity and uncertainty related to fossil fuel supply together with atmospheric carbon balance challenges have supported the policy initiatives towards the new ways/value chains to use wood in for energy (heath, electricity and liquids). These policy activities have been coordinated with the parallel activities in chemical and food industries respectively. There is currently a ten percent share for wood based energy sources in distant heath processing. The recent national scenarios related to bio energy processes consider wood as the major primary source. The share of wood base can cover half of new bio energy creation by 2015. The major interests what concerns innovation promotion relate to bio refineries. There are parallel technology programs coordinated and financed by TEKES on going. There are scenarios proposing ten percent share of traffic fuel supply to be based on wood based value chains in Finland by 2020.

Innovation policy IV: creation of PP networks & technopolis structures

The Science and Technology Policy Council lifted up three main targets for the development of funding in the review proposal in 2003: a) education, the development of research careers and broad-based increases in researched knowledge, b) strengthening of social and technological innovations and c) expert development of innovations. The national innovation system, introduced into Finnish policy, allowed a broad and systematic approach to policy making by comprising the major factors behind the development and utilisation of new knowledge and know-how. The new policy agenda was aimed to facilitate quantity and quality of resources to be introduced and important institutional changes were carried out to implement the new policy agenda.

The enlargement of innovation concept was implemented in NIP through a) the restructuring TEKES from the former technology center to technology and innovation center in the early 2000's what concerns NIS and b) through Centre of Expertise Program 2007-2013 what concerns RIS. TEKES has enlarged NIS in

their innovation programs supporting policy covering the current OECD innovation concept sphere. NIP through RIS cover diversified policy activities what concerns the supply base of intellectual but also financial resources for innovation activities in addition to The Centre of Expertise Program. NIS is considered to dominate over RIS in NIP of Finland currently (Niemi & Virkkala 2005)[4].

[4] Niemi, K. & Virkkala, S. 2005. Yritysten innovaatiotoiminta elintarvike- ja matkailualoilla Keski-Pohjanmaalla ja elektroniikka alalla Oulun Eteläisessä. Chydenius instituutti. Selvityksiä 2/2005. Kokkola

2. National Innovation Policy related to forest sector

Frequent interfaces with other policies characterize National Innovation Policy agenda in Finland. Main feature is open policy coordination adopted through the Lisbon Summit strateg. Private and public stakeholders related to innovation policy area participate to endogenous policy target formation processes. Regional and rural development policies aim to strengthen the focuses of region specific strengths and specialties in the areas and especially in rural context. The Regional Councils, the major strategy formation stakeholders in regional context, try identify to options to win- win networks among the regions. Innovation policy is among the key issues among the policy activities to promote new entrepreneurship. The latter is especially true with the new entrepreneurship in rural areas. There are parallel policy formation activities on national and regional level. Regional Councils apply bottom up processes when formulating their policy targets and strategy implementation plans are coordinated on national level towards implementation agreements for public financing when applied. Implementation is supervised and evaluated through reporting and inspections by County Supervisors on regional level, Miniseries on national level and EU institutions respectively.
Forest Policy constitutes an exception in regional policy formation partly due to the national policy base but also for the agenda applied. There is only a loose strategy on EU level concerning forest policy targets and principles. Finland accepted National Forest Program among the pioneers among EU Countries in the late 1990's. National policy agenda and objectives support top down solutions irrespective the open process agenda applied in policy formation on regional level.

Policy implementation

National policy objectives, like in forest policy, are challenging what concerns coordination and implementation with respect to EU based structural policies. Policy actions have national base creating dependence on Parliamentary arena public financing decisions. Different approach can be applied in policies with EU based strategies and financing tools. Innovation policy in Finland transmits EU coordinated targets. Finland apply country specific approach what concerns National Innovation System but also Regional Innovation System. Superior knowledge creation is aimed to develop through establishing the joint venture (public private) creation of Centres of Expertise as one of the key elements in RIS. Priorities in innovation policy are currently in business design and organizational innovations. These activities benefit from coordinated RIS and corresponding financing. The latter is true partly due to the expansion of innovation policy especially in low tech industries. Business and organizational innovations are supported parallel with the prior technology based product and process innovations favored up to 2000's. Regional Development Policy implementation promotes the creation of parallel supporting policy activities into schooling, R&D and technology promotion issues. Subsidy delivery identify also the demand base potentials (what firms need for their innovations).

Increased R&D financing with public private coordinated actions is introduced recently in forest cluster innovation and R&D policy. The creation of new R&D partnership platforms tends to expand business based research financing alternatives through venture capital solutions. Innovation creation does not cover forest policy. The latter, with the Forest Future Forum as the major policy implementation arena, is in the stage of abstract innovation policy formation. Little has been implemented so far except the forums for scientific activities as well as those coming from rural and regional contexts. Recent examples listed in the table below are outcomes of innovation activities created and financed outside forest policy area.

Table 1: Innovation areas: Currently Important Innovation in Categories – FINLAND

Area / Type	Territory based services	Value added chain
Product	*joint products (trails etc)* combine the services of several SMEs to one product under one brand/label www.vilman.fi Wellness products/services	*Radio Frequency Indentification (RFID)* *Wood Composite Products* *Natural fibre composite materials* are produced by Kareline Oy Ltd. Contact the company on www.kareline.fi *The die-cast electric guitars produced by Flaxwood Tmi http://www.flaxfood.com/eng/index.php in drinking vessels, www.kupilka.fi* *The FENRON -window, www.fenron.fi*
Process	*Network based operations:* Hit Ky, Finnature www.hikingtravelhit.fi/, www.finnature.fi/	*wireless software in wood harvest and transportation* Computer (Windows-infrastructure) assisted harvest instructions and stand map operating environment allowing centrally planned management for the whole wood harvesting and transport chain.
Marketing method	*e-marketing in nature tourism*: (www.lomarengas.fi)	*Timber Platform-frame construction system* covering multi-storey wood frame house construction *Moneral Design:* aspens into cocktail and dinner plates. Internet and dealer network. http://www.moneral.fi/eng/index.php
Organisational model	*VilliPohjola: the state's forest areas:* own marketing unit for nature tourism services. www.villipohjola.fi *Theme Group work*: national Theme Groups http://www.maaseutupolitiikka.fi/ *Official nature guide education*: http://www.erakarkku.fi/Ammattitutkinto/ *Temporary forest conservation contracts*: http://www.metsakeskus.fi/web/fin/palvelut/	*- Leader firm partnering network* offered to the Finnish SME an effective channel to export markets, a superb logistics system and the opportunity to develop their operations with electronic business-operation support. http://www.finnforestus.com/product_list.asp?path=1;554;659;1110 - Finnish Forest Cluster Ltd - WoodWisdomNet - Future Forum on Forests) - Forest Academy for decision makers - The Networked Centre of Expertise for Wood Products 2003-2006 - Wood Finland I 1998-2005 and Wood Finland II 2006-2007

Table 2: Selected relevant policy documents

Forest Policy (Regional or National Forest Programme):

Document: Finland's National Forest Programme 2010(Kansallinen metsäohjelma 2010)
http://www.mmm.fi/attachments/5fLUy9oi5/5gpA9OecX/Files/CurrentFile/The_programme_2010en.pdf
Website of the document: http://www.mmm.fi/en/index/frontpage/forests/nfp2010/documents_reports.html
Publication Date: Min. Ag.For. publications 2/1999
Website: http://www.mmm.fi/kmo/toteutus_seuranta/Liitteen1bliite.rtf

Supplementary documents: 5 + background report
* 2005. National Forest Programme 2010. Follow-up report 2004. (Draft)

* 2004a. National Forest Programme 2010. Follow-up report 2002-3. Min. Ag. For. publications 7/2004

* 2002b. National Forest Programme 2010. Follow-up report 2001. Min. Ag. For. publications 6/2002
http://www.mmm.fi/attachments/5fLUy9oi5/5hmGJvkTc/Files/CurrentFile/KMO_follow_01.pdf
word count: 11 innovation/innovation related words

*2001. National Forest Programme 2010. Follow-up report 2000. Min. Ag. For. publications 4/2001
http://www.mmm.fi/attachments/5fLUy9oi5/5hmGB5rHX/Files/CurrentFile/Follow_up_report.pdf

*1999 Finland's National Forest Programme 2010 Background report (Kansallinen metsäohjelma Taustaraportti) Min. Ag. For. publications 6/1999

Forest Based Sector Policy (Sector Policy Strategy), if any:

Documents: (PUBLIC)
Forest based Industries - Finnish Forest Industry Scenarios and their impacts to wood raw material production
Publication Date 29.4.2005 MAF &FFIF&CUUAP (in Finnish)
Website: wwwb.mmm.fi/julkaisut/metsatalous/310505raportti.pdf

Wood Product industries
Website: http://www.ktm.fi/files/14702/PuuVNpe17.03.2005EN.pdf
www.environment.fi/default.asp?contentid=123817&lan=en - 26k

Woodworking Industrial Programme 2004–2010
Website:http://www.ktm.fi/files/14701/puutuoteohjelma_lop.pdf

Wood Construction Development Programme 2004–2010
Website:http://www.ktm.fi/files/14699/Moniste_147.pdf

Supplementary documents (INDUSTRY):
* Woodworking Industries 2020 http://www.metsateollisuus.fi/files/newsletter/Puturaportti.pdf

* Finnish Forest Cluster Research Strategy

Innovation Policy (Regional or National Reform Programme):

Document: Science, Technology and Innovation. Science and Technology Policy Council of Finland 2006
Publication Date: June 2006
Website: http://www.minedu.fi/export/sites/default/OPM/Tiede/tiede-_ja_teknologianeuvosto/julkaisut/liitteet/Review_2006.pdf?lang=en
Supplementary documents:
* Hallituksen strategia-asiakirja 2006 (The government's strategy document 2006)
http://www.vnk.fi/julkaisukansio/2006/j03-strategia-asiakirja-2006/pdf/fi.pdf (in Finnish). Outlines the actions for next four years.

* The Lisbon Strategy for Growth and Jobs – The Finnish National Reform Programme 2005-2008. Ministry of Finance. Economic and Economic Policy Surveys 3b/2005.
http://ec.europa.eu/growthandjobs/pdf/nrp/FI_nrp_en.pdf

Rural Development Policy (Regional or National Rural Dev. Programme, Forestry Part):

Document: Manner-Suomen maaseutuohjelma (Rural Development Programme for mainland Finland 2007-

2013)
Publication Date: 13.4.2007
Website: http://www.mmm.fi/fi/index/etusivu/maaseutu_rakentaminen/uusikausi/mannersuomi.html. The word innovation appears 69 times in total 358 pages

Supplementary documents:

* Elinvoimainen maaseutu – yhteinen vastuumme. Maaseutupoliittinen kokonaisohjelma 2005-2008 (Viable countryside – our joint responsibility. Rural Policy Programme 2005-2008, English Summary
Publication Date: 2004
Website: http://www.maaseutupolitiikka.fi/julkaisut/julkaisut_2004/YTR_julkaisu_19_2004.pdf
(heet://maaseutupolitiikka.fi the english summary version
The word 'innovation' appears 67 times on the total of 324 pages.

* Alueellisen innovaatiopolitiikan haasteita. Tutkimustulosten tulkintaa. Alueellinen kehittäminen 16/2004

Regional Development Policy (Regional or National Regional Dev. Programme):

Document: The Lisbon Strategy for Growth and Jobs- The Finnish national Reform Programme 2005- 2008. 3b/2005

Publication Date: 2005

Website:
http://www.vm.fi/vm/en/04_publications_and_documents/01_publications/02_economic_surveys/97179/97206_en.pdf

Supplementary documents:

* Regional Programs (comprised of 34 city region programs) Ritsilä, J. & Laakso, S. & Haukka, J. & Kostiainen, E. & Storhammar, E. & Kuisma, H. 2006. Aluekeskusohjelman tulokset ja vaikutukset - arviointi 2001-2006 Sisäasiainministeriön julkaisu 28/2006. www.intermin.fi/julkaisut

* Regional Structural Programs Mykkänen, J. 2007. Integrating regional policy (Eheyttävään aluepolitiikkaan) Feasibility survey on regional development policy Publications ministry of interior 23/2007

* Centre of Expertise Program Kanninen, S. & Mikkonen, R.& Kuusisto, J. & Lemola, T. & Halme, K. & Viljamaa, K. 2006. Osaamiskeskusohjelma 1999–2006 loppuarviointi

Sustainable Development Policy (Regional or National Sustainable Dev. Strategy):

Document: Kohti kestäviä valintoja – kansallisesti ja globaalisti kestävä Suomi. Kansallinen kestävän kehityksen strategia. Towards sustainable choices. A nationally and globally sustainable Finland. The national strategy for sustainable development.

Publication Date: 5/2006, 7/2006 (English version)

Website: http://www.environment.fi/download.asp?contentid=53983&lan=fi (Finnish version)
http://www.vnk.fi/julkaisukansio/2006/j05-kohti-kestavia-valintoja/pdf166091/fi.pdf (English version)

Supplementary documents:

Renewable Energy Policy (Regional or National (renewable) Energy Strategy):

Document: Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol

Publication Date: 24th of November 2005

Website: http://www.ktm.fi/index.phtml?s=7

Supplementary documents:

9 background studies documents (in Finnish) and Programme for enhancing renewable energy 2003-2006 (Working group suggestion), 5/2003, (In Finnish only, Uusiutuvan energian edistämisohjelma) http://www.ktm.fi/?s=164

3. Forest Policy

Pekka Ollonqvist and Anssi Niskanen

3.1. Introduction to the Forest Policy

New institutional structure Forestry Innovation Working Group (FIWG was created during the preparation of Finland's National Forest Program 2010 (FNFP 2010) in 1999. Organizational innovations in the preparation in FNFP 2010 included the transparent and open process with Web based interactive communication arena. FIWG proposed the Forest Sector Innovation Forum (FSIF) to define important development targets for the creation and operational development of innovations and to gather experts and customers within the field together. The forum was never established but in March 2003 so called Future Forum on Forest of Finland (FFFF) started at the Faculty Forestry of the Joensuu University. FFFF provided an arena for multidisciplinary and multi sectoral approach in searching for innovative ideas for the evolving forest-based livelihoods and changes in the operational environment of forest sector organisations. The major stakeholders in policy processes are in the Figure 1.

Figure 1. Bodies of Finland's national Forest Programme

National Forest Program revision FNFP 2015, to be prepared during 2007, was outlined by Forestry Council in 2006 utilising the futures scenarios published by Finnish Forest Research Institute, and the future works of FFFF and the Forestry

Academy for Decision Makers. The major agenda during preparation for FNFP 2015 is focus on the intensive and cost effective wood production, use of allowable cut resources and strengthening of knowledge base. An innovation of the FNFP 2010 was the creation of temporary organizational structures for forest conservation. These temporary structures were developed under so called a METSO --program, providing a contract system for non industrial private forest owners to conserve nature valued forest environments. There are also other recent institutions aimed to promote innovation processes in the forest sector: Centre of Expertise for Wood Products 2003–2006 and The Finnish Forest Cluster Research Portal from 2007 on. The recent reformulation of the Centre of Expertise institution expanded the field of interest what concerns forest sector value chains. The new fields of expertise are supporting value chain basis the innovation activities. Forest Industry Future- to support wood fibre solutions, Future Energy Technologies- to support wood based energy solutions and Living Cluster- to support wood based construction.

3.2. TABLES – Forest Policy

Part A - General document information

Name:	**Finland's National Forest Program 2010**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☒ Government ☐ Ministry:_____ ☐ Others: The Finnish National Commission on Sustainable Development ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: 1999
Validity period:	Valid until revision (started in 2007)
Revision:	Revision process on going towards Finland's National Forest Program 2015 Aimed to end during 2007 In charge: Forest Council Revision based on futures analysis reported in: Finland's Forest Sector Future Review http://www.mmm.fi/attachments/5enfdAPe1/5jkFkYIGy/Files/CurrentFile/
Monitoring / Evaluation:	Annual Evaluation (Follow Up Reports) 2000 -2004 (above) The document rather sets the strategic targets for forest policy than defines the concrete actions for implementation. Therefore it is not monitored as the following renewed NFP will be.
Related documents:	*Evaluation* 2005 Interim evaluation of the National Forest Programme (eds.): Pihlajamäki, P.& Saarentaus, A. & Saarenpää, T. 2005. MAF 5a/2005 *Follow Up*

	2004a. National Forest Programme 2010. Follow-up report 2002-3. Min. Ag. For. publications 7/2004 2002b. National Forest Programme 2010. Follow-up report 2001. Min. Ag. For. publications 6/2002 2001. National Forest Programme 2010. Follow-up report 2000. Min. Ag. For. publications 4/2001.
Geographical scope:	☒ National ☐ Regional; name: RFPs (13) ☐ Local, name: NFP 13 Regional Forest Programmes (RFPs) supervised by Regional Forest Councils 2006 Evaluation of RFPs: Weckroth, T. 2006. Regional Forest Programs 2006–2010 Summary Survey (in Finnish). MAF publication 4/2006 http://wwwb.mmm.fi/kmo/alueelliset/AMO_2006_2010_nettiin.pdf
Budget:	Mill.€ Wood Production 57, energy wood 5, Extension to NIPFOs 11 Biodiversity 7
General description of contents as written in document	
Objective of the document	The National Forest Programme continues the tradition of Finland's previous forest programmes to increase the forest industry's annual use of domestic roundwood by 5 - 10 million cubic metres by the year 2010, to double the value of the wood industry's exports to EUR 4.2 billion per year and to increase the annual use of wood for energy production by 5 million cubic metres. The production of industrial roundwood is aimed to increase 63 - 68 million cubic metres per year. Increased harvests calls for a raise in silvicultural and forest improvement investments. In collaboration with companies and entrepreneurs the Government committed to ensure good, competitive conditions for the forest industry; such as competitive energy prices, an adequate road network and technology and development programmes for the wood industry and the use of wood energy. The ecological sustainability of forests will be secured by a further development of the ecosystem management of commercial forests based on the environmental programme for forestry of 1994. The subsidy for ecosystem management will be increased. Hunting, reindeer husbandry, wild berry and mushroom picking, landscape and cultural values, outdoor recreation and tourism will be taken into account and advanced within forest management and protection. Forestry know-how and innovative activities within the forest sector will advance by means of developing research, implementation of results and training. A Forum for Innovation will be formed in order to increase the interaction between the parties representing theory and practice. By taking an active part in the international forest policy, by forest research and training cooperation and by media exposure about forests and the environment, Finland will secure its own interests and further sustainable forestry.

Priorities	1. Economic sustainability of wood based value chains using industrial roundwood 2. Preservation of subsidies to silvicultural investments among NIPFOs 3. Progress ecological sustainability through a) preserving valuable environments in private forests, b)restoration investment in conserved forests and c) contracting temporary private forest conservation in valuable forest environments 4. Maintaining social and cultural sustainability related to forests by a) intensifying and expanding multiple use activities and b) subsiding entrepreneurship in nature tourism applying forest resources .
Structure	STARTING POINTS *Vision*: Sustainable welfare courtesy of diverse forests. Background and purpose of the Forest Programme PROGRAMME The forest cluster supports sustainable development Good prospects for the forest industry to grow Forestry is profitable and creates employment Ecological sustainability will be secured The forests will be well managed Forests provide recreation and nature's products Forest know-how will be strengthened Finland takes an active part in international forest policies PREPARATION AND EVALUATION OF THE PROGRAMME Transparent and open process Economic effects Social effects Environmental effects Chances for the programme to succeed RESOURCES OF THE PROGRAMME PROGRAMME IMPLEMENTATION, FOLLOW-UP AND DEVELOPMENT Appendix 1. Development of the forests according to different alternatives Appendix 2. Preliminary assessment of environmental impacts Appendix 3. Financing by the Ministry of Agriculture and Forestry Appendix 4. Working groups

Measure Areas	1. Criteria and Indicators of Sustainable Forestry 2. European Criteria and Indicators of Sustainable Forestry 3. Use of Allowable Cut & fulfilment of regional targets for cuttings & priorities related to thinnings & young stand mgmt (National Forest Inventories) 4. Utilization of wood fibre properties in product/process development 5. Expansion of added value in wood product industries (growth of added value of wood product export) 6. Expanded use of wood in energy production (Statistics) 7. Competitive roundwood markets (new market information channels) 8. Parallel multiple use of commercial forests (RFPs proportions of alternative uses) 9. Preservation of nature diversity and living environments (fulfilment of Environmental Program for Forests) (Fulfillment of RFP targets) 10. NIPF tenure (creation of joint interest activities) 11. Intellectual capacity creation & Innovation promotion (Forest Future, Centre of Expertise Network for Wood Products) 12. Social sustainability (new entrepreneurship, rural communities, women in forests)
Follow-up / Implementation	
Follow-up measures:	☐ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adapted regulations/laws; name: ☐ New or adapted informational campaigns/instruments; name: ☐ New or restructured institutions/organisations; name: ☐ Implementation in forest policy: Criteria and Indicators of Sustainable Forestry European Criteria and Indicators of Sustainable Forestry *NFP Evaluation* 2005 Interim evaluation of the National Forest Programme (eds.): Pihlajamäki, P.& Saarentaus, A. & Saarenpää, T. 2005. MAF 5a/2005 *NFP Follow Up* 2004a. National Forest Programme 2010. Follow-up report 2002-3. Min. Ag. For. publications 7/2004 2002b. National Forest Programme 2010. Follow-up report 2001. Min. Ag. For. publications 6/2002 2001. National Forest Programme 2010. Follow-up report 2000. Min. Ag. For. publications 4/2001.
General comment:	FNFP 2010 is Central Strategy document (preparation of evaluation in 4 groups) Economic sustainability Ecological sustainability Social and cultural sustainability

	International forest policy (International harmonisation) *Formulation of document*: **NFP** Forest Council (Minister of MAF as Chairperson and Director-General of MAF as Vice Chairperson& 20 members representing major forest related policy stakeholders) **RFPs** (13) Regional Forest Councils (18-22 members in each representing major forest related policy stakeholders)

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the more generic terms 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document	☐ never ☒ sometimes ☐ frequently **19 innovation/innovation related words**
	Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document	☐ never ☒ sometimes ☐ frequently **Innovation Forum**
	Please mark the frequency of occurrence of the terms that are related to innovation, for example entrepreneurship, diversification, competitiveness	☐ never ☒ sometimes ☐ frequently Terms used: competitiveness, entrepreneurship, create

	Preparation Strengthening of know how in forestry became one of the key pillars for FNFP 2010 process. Plans to establish a Forum for Innovation and implemented interactive public forums for communication were among the innovative solutions created during the FNFP2010 process (Saarenmaa & Ihalainen, 1999) The strengthening of infrastructure on innovation activities was taken as an important objective for FNFP 2010 during its preparation. So called Forestry Innovation Working Group (FIWG) was established to assist Forest Committee in the FNFP 2010 preparation. Two other ad hoc working groups gathered to the preparation of FNFP 2010 were a) Forest management and conservation and b) Forest use and market groups (Reunala et al. 1999). *Implementation*: In 2002, another attempt was made and the Ministry of Agriculture and Forestry (MAF) opened a call for tenders to implement a five year project which aim was to foresee and analyse the impacts of future changes on forest-based livelihoods in Finland. The work of the so called Future Forum on Forest of Finland (FFFF) started in March 2003 at the Faculty Forestry of the Joensuu University. The FFFF has especially since 2005 emphasised multidisciplinary and multisectoral approach as a fundamental principle in searching innovative ideas for the evolving forest-based livelihoods..
Relevance of innovation: Please mark how much relevance is given to innovation in the document (one answer)	☐ No relevance at all ☐ Marginal issue ☐ One issue among others ☒ Important issue ☐ Central issue Comments:
Degree of specification: Please mark how general or specific innovation is addressed by the document (one answer) Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry	☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☒ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☐ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Ministry of Agriculture and Forestry (MAF) opened a call for tenders to implement project to foresee and analyse the impacts of future changes on forest-based livelihoods in Finland. Future Forum on Forest of Finland (FFFF) started in 2003 emphasised multidisciplinary and multisectoral approach as a fundamental principle in searching innovative ideas for the evolving forest-based livelihoods.

Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☒ Systemic innovation policy with S&T policy elements ☐ Predominantly systemic innovation policy Comments: Innovation support mainly through intellectual capacity creation In addition: NIS technology programs providing also firm level support to innovation programs

Goals and objectives:

Innovations are aimed to get support with research, education and improving the information flows from research to practise. Knowledge sharing between information producers and users are improved through the establishment of the Forum for Innovations. The development of forest industries and especially the woodworking SMEs in rural areas are supported. Wood use for energy is supported with a goal to increase annual energy wood use to 5 million cubic meters by 2010.

Issues, problems and related topics:

It is implicitly assumed that the research information does not meet the needs of its clients, i.e., the industry, administration and policy making.

Innovation areas: Innovation promotion (explicit and indirect solutions)

The most important innovation areas in the NFP are:
- process innovation in value added chain: increased wood growth, increased use of wood for energy, improved transportation network, higher coverage of forest management plans
- product innovation in territory based services: promotion of tourism entrepreneurship
- product innovation in value added chain: promotion of woodworking SMEs (+ general support for various programmes in woodworking industries)
- institutional innovations in value added chain & territory based services: creation of Forum for Innovations, improved knowledge sharing between information producers and users
- marketing method in value added chain: strengthening forest certification

General comment:

NFP cannot be considered as a stand alone document to evaluate innovations or policy integration in Finnish forest policies. For this it is too general and too implicit.

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	The NFP does not provide direct funding for R&D. The annual expenditure on forest research, predominantly based on public funding, is approx. EUR 50 million. The research funding within the public sector is channeled mostly through the Technology Development Centre Tekes and the Academy of Finland. Both of these organisations support various forest-related projects and programs.
	Diffusion of innovation	The NFP is weak in supporting the diffusion of innovations. However, the NFP builds a link to other programs where the diffusion of innovation is stronger, e.g.: Wood Finland II (PuuSuomi II) – action program 1998-2005.
	Strengthening the knowledge base	The NFP aims strongly to strengthen the knowledge base in the forest sector. One of the principle aims of the whole programme is to strengthen the knowledge base of the forest sector. The program emphasises especially the knowledge sharing between information producers and users. Aside the NFP there are several other initiatives in Finland that have the goal to strengthen the knowledge base of the forest sector, e.g., Centre of Expertise Network for Wood Products, Forest Academy for Decision Makers Päättäjien Metsäakatemia), Knowledge Creation for Children (Lasten oppimispolku), etc.
	Strengthening interaction	The NFP emphasises the constant interplay with Regional Forest Programmes. The program emphasises especially the knowledge sharing between information producers and users. The program attempts to raise the interest of private forest industry companies to increase their investments (through increased amount resources for their use). Aside the NFP there are several other initiatives in Finland that have the goal to strengthen the interaction between different actors in private and public sector, e.g., Forest Academy for Decision Makers (Päättäjien Metsäakatemia), Knowledge Creation for Children (Lasten oppimispolku), etc.
	Demand creation	The NFP does not put much emphasise on the demand creation of products or processes based on wood and forests. Rather, the program builds-up general conditions for demand creation such as overall sustainability of forestry. Also other initiatives have been developed for the demand creation purposes for the forest sector in Finland, e.g. Marketing Campaigns for Wood Products (Year of Wood, Era of Wood).

	Improving frame conditions	The forest sector environment in Finland is rather stable and secure. The NFP does not put much emphasise on improving the institutional conditions for companies to innovate. However, the NFP improved the national commitment to implement the targets agreed in the International Panel on Forest (UN Forest Panel) emphasised the continuation of active participation in International Forum on Forests (UN Forest Forum) and MCPFE, FAO, ITTO, UNDP and UNEP activities. These interlink the national forest policies to international processes.
	Comments Strengthening of national inter sectoral commitment to the policy activities created through FNFP 2010 implementation	
Priorities		The priority of the NFP is clearly in wood production, sustainability issues and promotion of bioenergy, knowledge base and international forest policy.
Assessment of overall relevance		The NFP is generally speaking not an innovation oriented program. As it was seen at the time when the program was planned, that innovation are important for the long term success of the Finnish forest sector, this question (on innovations) was later on discussed in so called forest innovation working group (FIWG).
Promotion of innovation		The NFP hold and intention to establish a Forum on Innovations, which in 2003 took the form of foresight in the Future Forum on Forests (implemented in University of Joensuu).
General comment:		

Part B - Cross-sectoral coordination

Policy formulation	
Co-ordination with other processes and documents	Establishment of National Forest Council (multi sectoral participation of Ministries an forest sector relevant primary NGOs) Ministry of Trade & Industry: coordinated development of SMEs & their networking in forest based value chains Ministry of Internal Affairs: Regional development Ministry of Education: Forest & Wood schooling Ministry of Environment: forest conservation and ecological sustainability
Administrative Co-ordination:	☐ between different sections/departments within the same ministry; specify: ____ ☐ between different ministries, specify: ____ ☒ between ministries and other public organizations / agencies, specify: ____ Comments: Shortly explain the role of the main administrative actors
Stakeholder involvement	☒ Forestry: The Central Union of Agricultural Producers and Forest Owners MTK ☒ Forest-based industries: The Confederation of Finnish Industries EK, The Federation of Finnish Enterprises ☒ Agriculture: The Central Union of Agricultural Producers and Forest Owners MTK ☐ Tourism: name most important organisations: ____ ☐ Energy: name most important organisations: ____ ☒ Environment: The Finnish Association for Nature Conservation ☐ Other sector: Trade Unions: The Central Organization of Finnish Trade Unions SAK, The Confederation of Unions for Academic Professionals in Finland AKAVA ☐ Other sector: **Trade Unions**: The Central Organization of Finnish Trade Unions SAK, The Confederation of Unions for Academic Professionals in Finland AKAVA **Commerce:** The Federation of Finnish Commerce **Local and Regional representatives:** The Association of Finnish Local and Regional Authorities, The Regional Council of Lapland **Youth:** Finnish Youth Co-operation – Allianssi **Development Cooperation**: The Service Centre for Development Co-operation (KEPA) Comments:
Coordination	☒ Formal (central) coordination body: **Sustainable**

mechanisms:	**Development Strategy Group** ☒ Formal coordination process ☒ Inter-sectoral working groups ☒ Inter-sectoral advisory body ☒ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe ____) ☐ Others: ____
Policy Implementation	
Responsible actors and their roles:	Ministry of Agriculture and Forestry Ministry of Environment
Level of delegation	☐ Decentralized, e.g. ☒ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☐ Local, e.g. by municipalities ☒ Regional, e.g. by regional public actors ☐ Others:
General comment	

3.3. Appendix to the tables

3.3.1 Finnish National Forest Programme 2010 (1999)

A. Programme preparation

Innovation issues (explicit and indirect identification & proposals) in program preparation:

Strengthening of know how in forestry became one of the key pillars for FNFP 2010 process. Plans to establish a Forum for Innovation and implemented interactive public forums for communication were among the innovative solutions created during the FNFP2010 process (Saarenmaa & Ihalainen, 1999)

Forestry Innovation Working Group to strengthen forestry know-how:

The strengthening of infrastructure on innovation activities was taken as an important objective for FNFP 2010 during its preparation. So called Forestry Innovation Working Group (FIWG) was established to assist Forest Committee in the FNFP 2010 preparation. Two other ad hoc working groups gathered to the preparation of FNFP 2010 were a) Forest management and conservation and b) Forest use and market groups (Reunala et al. 1999).

Inter sectoral coordination (participation & other contributions)

There were 10 members in the FIWG representing ministries, regional forestry centers, universities, sectoral research centers, etc. It was chaired by the Ministry of Agriculture and Forestry and it had three secretaries. The major task of the FIWG was to prepare R&D policy targets and program to improve research activities and effective knowledge transfer for implementation. The FIWG prepared background papers for a) forest cluster knowledge in NIS, b) Forest Sector Innovation Forum, and c) Network of Communication. In the Network of Communication knowledge base development and interaction between extension services and schooling were emphasized (Reunala et al. ibid).

Organizational innovations in FNFP 2010 preparation

- *Transparent and open process*
  The main principles to the preparation of the FNFP 2010 were transparency, co-operation, bottom-up decision-making and comprehensiveness. The drafting organization had widespread representation at all levels, which ensured that different points of view were brought to light and integrated. During the process, different working groups heard 38 experts. FNFP 2010 was discussed with 59 different public forums numbering a total of 2,900 participants. Aside the FNFP 13 Regional Forest Programmes were prepared for 13 Regional Centres of Finland. Preparation of these programmes followed the same spirit of open co-operation with the various interest groups as the preparation of FNFP 2010.

- *Web pages for interactive communication*
  Internet (including programme specific web-pages) was used for the first time for forest policy formulation in Finland during the FNFP 2010 process. FNFP web-link contained basic documents of the National Forest Programme, the reports of the working groups, various statements and a column for discussion. The various drafts

of the Forest Programme dated 3.11.1998, 16.11.1998 and 16.12.1998 were set up for a public view on the web pages for everyone interested at the very same time as they were handed out to the members of the working groups and the programme managing group. By the end of December 1998 web pages had had 6 800 visitors.

- *Improved forest-related know-how*
  Improved use of forest-related know-how was included into the strategic targets of FNFP 2010 through stronger innovation based research and education, and expanding internationalization. The interaction among the branches and companies throughout the forest cluster was considered a source of new knowledge, skills and innovations. Innovations were considered vital components for the improved competitiveness of the forest cluster. A proposal for the *Forum for Innovation for the forest sector* aimed for the establishment a forum, which would improve the interaction between producers and users of information to result into a higher number of innovations in the sector.

- *Forest Sector Innovation Forum*
  A task force for Forest Sector Innovation Forum (FSIF) was established to define important development targets for the creation and operational development of innovations, to gather experts and customers within the field together and to foresee forest products' future demand changes. Participatory expert meetings were organised to discuss the agenda for the FSIF. Among the proposed issues was an idea to establish an interactive forum where supply and demand of inventions would be explored to support innovation process formation (Okko & Ihamuotila, 2000). Although the expert meeting directed the main responsibility concerning risks and implementation of innovation processes to the private sector, the public sector was considered an appropriate supporter for theses activities in many ways. To make the innovative process more effective, public sector can for example work to strengthen interactive teamwork among various parties.

  Participatory expert meetings identified two key tasks to the FSIF: a) search and creation of expertise based visions to facilitate innovation potentials and b) creation of physical (resource based) and mental infrastructures, which could improve innovation processes (Heikurainen 1999).

  Under these key tasks, it was seen that research should become more customer oriented. In the selection of research subjects and in the planning of research projects the importance of customers' information needs must be stressed. An approach, which could be called "from the markets to the forest" should be adopted. Via the Forum for Innovation, the users of information would be included in the process of setting up targets for research and development and they should also be allowed to take part in the actual research process. It was planned that the secretary general of the Forum for Innovation and the group of experts would participate in the preparatory work of forest sector research programmes and support the extension of the research results into practical use. The productive use of innovations in SME's should be advanced – according to the plan for the Forum for Innovation – by paying more attention to the small companies' needs within the public funding of research and development. It was seen that that the co-operation and support of the Employment and Trade Centres and Centres for Excellence are important for example in national and international networking.

B. Formal program

Innovation issues - towards strategic foresight in the forest sector

Despite intensive planning in 1999-2000, the Forum for Innovation was never established in its originally planned form (Hellström 2000b, Hellström & Kailasto 2002). Aside the technical and organizational problems, a mental barrier to establish an open forum for innovations existed. It was seen problematic to openly discuss and present ideas or concepts that could support entrepreneur specific business development. In the external evaluation of the FNFP 2010 the innovation forum was however still considered important, and the evaluation report recommended that the forum would be established in one way or another (Kivinen & Paldanius 2002).

Public involvement (financing, institutional structures) - Innovations and foresight

In 2002, another attempt was made and the Ministry of Agriculture and Forestry (MAF) opened a call for tenders to implement a five year project which aim was to foresee and analyse the impacts of future changes on forest-based livelihoods in Finland. The work of the so called Future Forum on Forest of Finland (FFFF) started in March 2003 at the Faculty Forestry of the Joensuu University. The FFFF has especially since 2005 emphasised multidisciplinary and multi sectoral approach as a fundamental principle in searching innovative ideas for the evolving forest-based livelihoods.

Prior to the establishment of the FFFF, it was seen that foresight could make forest policy planning more proactive on the changes likely or possibly occurring in the future. Without structured analyses of futures, it was seen difficult – or even impossible – to build sustainable strategies on the use of forests. Aside forest policy planning, the FFFF results were expected to support strategic decision making in different forest sector organizations.

Future Forum implementation

Foresight was not yet included in the FNFP 2010 design at the late 1990s. Because the foresight work was established ex post to the FNFP 2010 design, it had a direct link only to the implementation of the programme. This problem was focused in a joint paper of the secretary generals of the Finnish National Forestry Committee and the FFFF in 2004 (Niskanen & Suoheimo 2004).

Maybe as a result of the paper and due to increased awareness and expanding use of foresight in Finnish forest sector, the planning of FNFP 2015 in 2006 was started by implementing a futures work on forest sector. The MAF invited the work from the Finnish Forest Research Institute (Hetemäki et al. 2006).

Based on the futures work of Finnish Forest Research Institute, futures works of FFFF and the Forestry Academy for Decision Makers, the Forestry Council published in October 2006 a strategic outline concerning focuses and aims for the forest sector in the future (MAF 2006),. This outline will be used as a key background document for the FNFP 2015 prepared in 2007.

The FFFF has defined the relationship between foresight and innovations as indirect. This means that through foresight it may not be possible directly find new ideas or concepts for business development, but to stimulate different stakeholders for creative thinking on the

new business opportunities in the future. In its mid-term review, for example, the FFFF raised the issue (which was supported by the futures work of the Finnish Forest Research Institute one year later) that the future of the Finnish forest-based livelihoods should rely on two strategic goals: a) continuous development of existing processes and their cost-effectiveness, and b) greater emphasize on new wood or forest-based products and business concepts. At the same time as this suggestion was made, an EU initiative called Forest-based Sector Technology Platform was established, which similarly focused on new business opportunities in the sector (Niskanen 2005). These works can be seen as important milestones in the discussion in the forest sector, that the existing products, their incremental improvement and cost-efficiency focus are not sustainable sources for competitiveness in the long run. As a consequence, the Finnish forest sector and its stakeholders are currently discussing intensively on new products and business brake-troughs much more than earlier. As a result, a concrete new initiative is currently under development, namely Forest Cluster Ltd, which is a joint enterprise of private companies and public sector organizations aimed to support business development in new products and processes. The work of Forest Cluster Ltd is meant to start in the first half of 2007 with public and private funding.

C. Program implementation

Innovation promotion (explicit and indirect solutions):

The Centre of Expertise Programme - general

- Centres of Expertise started in 1994 and was extended for period covering 1998 to 2006 by appointing new centres of expertise. There were 22 centres of expertise in the institution covering 45 fields of expertise for the period of 2003–2006.

The Networked Centre of Expertise for Wood Products

- This centre of expertise covered various areas of expertise in the forestry and wood products business chain and it offered customized services and promotion for research and development projects. The centre consist 55 actors, and it functioned as a contact point for actors from different parts of Finland via which companies could increase their knowledge in the field of wood products and abilities to act as a developer of regional economies.

  There were universities and research institutes co-operating with the centre which performed research and development projects in the field of wood product industries, including:
  - Modern wooden town
  - Structure systems for multi-purpose buildings and large wooden structures
  - Open timber construction system for wooden buildings
  - Products for the construction of external areas and landscapes
  - Wooden interior decoration products and
  - Products made from processed birch wood

  The actors concerned were distributed geographically and served also as engines of regional development. Cooperation within the Wood Finland Programme enabled active transfer of expertise and helped to find solutions for the problems of small and medium- sized companies.

Inter sectoral arrangements & coordination

The National Forest Council and Regional Forest Councils are key networks supporting the implementation of FNFP 2010 covering also issues of innovation and integration with other programs that are relevant for forest policies. Although the FNFP 2010 considered the elements of a number of other national policies, the program itself can be considered as forest sector specific. For example, the issue of social sustainability is better covered in rural policies than in the FNFP 2010. Because the content of the FNFP 2010 is much wood production oriented, the support for the born end development of other non-wood or service based livelihoods is weak.

The Regional Forest Programmes: Regional Forestry Centres (13) are responsible in drafting and following the Implementation of the Regional Forest Programmes (RFP). The aim of RFP is to maintain and update the development plan of the whole forest sector of the region concerned. The Programme defines the needs and objectives for the management of forests, forest-based businesses, and multiple use and protection of forests, as well as proposes the measures and necessary funding to reach the objectives. Various actors from public organisations to forest owner associations, forest industry and NGOs are represented in the Councils, which also function as communication channel between the stakeholders. The term of the Councils is three years and they are appointed by the Ministry of Agriculture and Forestry on the proposal of the Forest Centre. The Programmes are revised at least every five years. Revisions for 2006-2010 were made in 2005.

Centre of Expertise for Wood Products - National network provides a good foundation for international networking. The focus of the Centre in 2003–2006 was on internationalization, which meant close cooperation with other research and development programmes for the wood industry such as the Wood Europe campaign and the WoodWisdom research programme.

Renewal is one of the key targets of the Research Strategy of the Finnish Forest Cluster and the Strategic Research Agenda of the European Forest-based Sector Technology Platform. Aside the key strategies, efficient tools will be needed to enable researchers from traditional forest and forest based industry research areas as well as from completely new areas to together contribute the implementation of the national and Europe-wide research agendas.

The Finnish Forest Cluster Research Portal is designed to help researchers in Finland and abroad to prepare for the implementation of the Finnish NRA. On the portal based on Wiki technology, research groups can solicit their competencies, post research ideas, and plan projects. Help is provided by facilitators who will put forward research needs derived from the research agenda and the subsequent programs. The programs will be launched by a national Strategic Centre for Science, Technology and Innovation of the Forest Cluster. http://www.forestclusterportal.fi/index.php/Main_Page

Public involvement (financing & institutional structures)

Tekes, coordinate and deliver public subsidies to new entrepreneurship and innovation creation. The technology programmes have been developed to lay background to the development financing. There are forest sector development programmes aimed to a) deliver R&D financing through research projects and b) to create background for the future financing portfolio. Programme approach, towards integrating scientific and

technology knowledge produced by public institutions available to commercial industry firms, has become a common norm for Tekes funding. Technology programmes of Tekes have strengthened co-operation and interaction between different parts of the national innovation system during the last 10-15 years. Typically Tekes operates with larger companies even though via different kind of special projects they have been trying to focus also to smaller companies.

3.3.2 Program revision - Finnish National Forest Programme 2015

Revision preparation for the FNFP 2015 during 2007

The FNFP 2015 revision is currently on-going. The new program is expected to be completed by the end 2007 so that the Finnish Government can agree and decide its content at the same time as the content for the conservation program for the voluntary and temporary forest protection (METSO program) in January 2008.

The FNFP 2015 revision in 2006 and 2007 has had four elements illustrated below:

a) Background preparation through
- scenario evaluation comprised by Finnish Forest Research Institute,
- future analyses of the FFFF
- futures workshops of the Forestry Academy for Decision Makers

b) Strategic outlines concerning focuses and aims for the forest sector in the future published by Forestry Council. Targets:
- value chain approach: from forest to product market interface
- macro and regional balance full & sustainable resource use
- three groups of preparation on economic & ecological & social sustainability
- systems of innovations
- use of knowledge resources

c) Pre-evaluation of the FNFP 2015 aside the program preparation. The pre-evaluation was consulted by Indufor ltd and Suomen Itsesuunnittelu Ltd.

Government Program for the period 2007-2011.

The focal points of the FNFP current draft of the FNFP 2015 are:
- to support the forest industry development in Finland
- to improve forestry profitability
- to increase the climate mitigation benefits and forest bioenergy use
- to improve and secure the benefits from forest protection and conservation
- to support balanced regional development in Finland
- to improve the competitiveness of forest sector through R&D and education
- to help the international forest policies to support sustainable development

Aside the preparation of revised FNFP 2015, there is another forest policy process ongoing, namely the Preparation of the Forest Biodiversity Program for Southern Finland (METSO) 2008-2016. This preparatory work utilizes the experiences from the implemented periodical program (2000-2006) of temporary contracting between public authorities and non industrial private forest owners to maintain endangered forest environment against compensation payment. The contract system was accompanied with diversified research activities concerning the efficiency of the system (both economic and

ecologic efficiency) and its effectiveness to meet the conservation objectives. It is expected that the tested tools for voluntary and compensated conservation measures are extended, which decision can be made in the Finnish Government at the same as the FNFP 2015 is decided in January 2008. http://wwwb.mmm.fi/metso/ohjelman_esittely/

3.3.3 Conclusions

The Finnish forest policy design has for long been based on public programs. In the programs targets and the means to reach the targets are defined and agreed. At present there are a high number of programs that are directly integrated into forest policy implementation (e.g. National and Regional Forest Programs, programs for the conservation of forest biodiversity) or which are linked into the forest policy implementation (e.g. forest or wood based Centers if Expertise programs and the programs of the national technology funding agency Tekes that are directly linked with the forest sector). Aside these there are a number of non-sectoral programs like rural and regional development programs that have components that are interlinked with the planning and implementation of forest policy programs. The core institutions to support the integration of various programs are National and Regional Forest Councils, nominated to prepare and follow the National and Regional Forestry Programs, respectively.

Recently, new approaches have been introduced to improve the efficiency of forest policies to support innovations. First sign of this was an establishment of a public forum for forest based innovations that was initially called a “Forum for Innovations”. Prior its establishment, the name and the focus was turned into “Future Forum on Forests”, aiming to foresee long-term changes affecting the forest-based livelihoods in Finland. The use of futures research and foresight in forest policy design was widened remarkably in 2006 when the decision was made that the preparation of FNFP 2015 would be based on the different futures works implemented by that time. Just recently (in 2007) another new approach has been introduced to support the born of new innovations, namely the establishment of a new company called Forest Cluster Ltd to collect and utilize public and private funding for the creation of new innovations in the forest cluster. The coming FNFP 2015 is closely interlinked with the forest cluster development aims, creating however a danger that the other parts of the forest use (i.e. not solely fiber or biomass based) are less present in the forest policy formulation. The introduction of these new approaches to support forest-based innovations is a sign of the change where the Finnish forest sector is moving from investment based development towards more innovation based development era.

Although the first efforts to actively look for the forest sector development through innovations have been introduced, the core forest policy programs still provide little support for the development of forest sector innovations. The programs provide support, first of all, for the development of the operational environment of forest sector enterprises (e.g. tending of young forests and maintaining forest road network) but little direct support to born and success of forest sector enterprises (e.g. information services for wood processing SMEs). It appears that the forest policy programs concentrate only on issues like forest growth, timber supply and ecological sustainability that are already well represented in the forest policy and organisations’ and stakeholders’ priorities. This may be because the forest policy programs are seeking high consensus among the participating organisations and stakeholders. A too high consensus may inhibit the opportunities of new issues like organizational innovations or development of new forest and wood uses to appear in the policy agenda.

4. Forest Based Industries Policy

Pekka Ollonqvist and Anssi Niskanen

4.1. Introduction to the Forest Based Industries Policy

Tradition mechanical and chemical forest industries have separate R&D, policy and promotion programs in Finland. For this reason the Business & Entrepreneurship programs for Woodworking Industries and Wood Frame Construction are reported separately from chemical forest industry in ***PART 1 tables****.*

A recent phenomena has been that forestry and forest industry has utilized extensive futures works to define their strategies. Two of these futures works are reported in ***PART 2 tables****:*

- Research Strategy of the Finnish Forest Sector Cluster
- Finnish woodworking industries 2020: Final report of the scenario and strategy analysis.

The tables are followed by an appendix where policy evaluation & discussion are presented in detail. The appendix is divided into four parts. Some features of forest industry innovation infrastructure in Finland are presented in part A. This part discusses wood product dominated public programs, mainly concentrating to primary industries but covering also some features of secondary industry. Part B concentrate to the detailed discussion of two national technology programs plus related policy documents (public and non governmental respectively). Part C cover large variety of innovation related scenario and other policy activities. Part D discusses the current evaluation concerning the future alternative options towards innovation processes to create new value chains based on wood materials.

4.2. TABLES - Forest Based Industries Policy

TABLES FOR PART 1: ***Business & Entrepreneurship programs for Woodworking Industries and Wood Frame Construction.***

Part A - General document information

Name:	**Wood Product Industries and Wood Construction Value Chains**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☒ Government DECISION-IN-PRINCIPLE ON PROMOTION OF WOOD USE AND WOOD-BASED CONSTRUCTION ☐ Ministry:_____ ☐ Others: Level: ☒ National ☐ Regional ☐ Local Adoption date: 4 2004
Validity period:	- Woodworking Industrial Programme 2004–2006 - Wood Construction Development Programme 2004–2006.

Revision:	To be continued as a competitive enhancement program 2007-2011
Monitoring / Evaluation:	Not decided.
Related documents:	Woodworking: * Facing the Challenge. The Lisbon strategy for growth and employment. Report from the High Level Group chaired by Wim Kok. **Wood Construction Development / Governmental** ***** Wood Construction Technology (Puurakentamisen teknologiaohjelma) TEKES 1995 *word count: 11 innovation/innovation related words* *****Value Added Wood Chain (Tukista Tuplasti) TEKES 2004 *word count: 5 innovation/innovation related words* *** F**orest Sector Future Review- Outlines by Forest Council *word count: 8 innovation/innovation related words* http://www.mmm.fi/attachments/5enfdAPe1/5jkFkYIGy/Files/CurrentFile/Metsasektorin_tulevaisuuskatsaus.pdf **Wood Construction Development / Non Governmental** *****Research Strategy of the Finnish Forest Sector Cluster http://www.forestclusterportal.fi/index.php/Main_Page Paper Industries http://www.metsateollisuus.fi/files/newsletter/Paperiteollisuus_loppuraportti_31-05-2006FINAL.pdf ***** Woodworking Industries 2020 word count: 8 innovation/innovation related words http://www.metsateollisuus.fi/files/newsletter/Puturaportti.pdf
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	TOTAL 87 M€ (for 5 years) and annually Woodworking 6 M€ 3,8 (public) 2,2 (private) Wood construction 6,5 M€ 6,2 (public) 0,5 (private) Joint 5 M€ 2,5(public) 0,3 (private)
General description of contents as written in document	

Objective of the document	**Woodworking** *Promotion on new business model creation* *Enhancing to regional development* (public support reorganisation: R&D support, schooling, simplified public support delivery) *Reorganisation to R&D financing* **Wood construction** *Promotion of competitive advantages* in wood frame construction: (single/medium rise apartment houses, agricultural, office, gardebn and infrastrurture construction as well as renovation construction) *Creation of equal opportunities to wood frame construction* (fire prevention norms…) with that of concrete or steel construction *Demand based land use/city planning principles*: equal opportunities to single house & low rise construction with that of high rise *Promotion of value chain creation* based on partnership solutions between developers and land use, component industry and construction entrepreneurship
Priorities	**Woodworking** Public support focus to key areas of knowledge: *high environmental performance* on wood products, *new business models*, *competitive standardized technology solutions* for wood construction: - IT applications - architecture - in house component production **Wood construction** Competitive advantages to wood frame construction through: *Organisational innovations:* developer wood frame construction (wood construction knowledge expansion in partnerships) *Process innovations:* in house BtoB construction industry (new solutions to in house wood module/component production) *Institutional innovations:* promotion of low rise apartment construction planning (new land use/infrastructure planning through pilot projects)
Structure	**Wood construction** I. State of art & evaluation on barriers & opportunities & opportunities & methods for wood frame promotion II Dissemination plan for implementation & specific public support activities
Measure Areas	**Wood construction** Target plans: measures to be determined during the detailed n implementation plan
Follow-up / Implementation	
Follow-up measures:	**Woodworking** ☐ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adapted regulations/laws; name: ☐ New or adapted informational campaigns/instruments; name:

	☒ New or restructured institutions/organisations; name: Forest Cluster Inc. http://www.tkk.fi/nyt/nyt_tiedotteet_2007/tapahtumat/metsaklusteri_innov_yritys.htm ☒ Implementation in forest policy: Inter sectoral Connections to FNFP2015 revision To be included into Forest Sector Future expertise network **Wood construction** ☐ No follow-up activities so far ☒ New or adapted funding programme(s) /budget line; name: ☐ New or adapted regulations/laws; name: ☐ New or adapted informational campaigns/instruments; name: ☒ New or restructured institutions/organisations; name: Part in the Living Cluster Centre of expertise network related to living ☒ Implementation in forest policy: Inter sectoral Connections to FNFP2015 revision
General comment:	The document rather sets the strategic targets for wood product industry development in wood frame construction value chains especially in BtoB construction demand segments. Inter-sectoral connections into Forest Policy & Renewable Energy Policy

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the more generic terms 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document	☐ never ☒ sometimes ☐ frequently *See above with documents*
	Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document	☐ never ☒ sometimes ☐ frequently *See above with documents*
	Please mark the frequency of occurrence of the terms that are related to innovation, for example entrepreneurship, diversification, competitiveness	☐ never ☒ sometimes ☐ frequently *See above with documents*
	Frequencies of words Prod Constr innovation new products 2 10 processes - 17 business models 7 10	
Relevance of innovation: Please mark how much relevance is given to innovation in the document (one answer)	☐ No relevance at all ☐ Marginal issue ☒ One issue among others *Woodworking* ☒ Important issue *Wood construction* ☐ Central issue Comments:	
Degree of specification: Please mark how general or specific innovation is	**Woodworking** ☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)*	

addressed by the document (one answer) Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry	☒ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☐ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?) **Wood construction** ☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☐ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☒ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?)
Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	**Woodworking** ☐ Predominately traditional science and technology policy ☒ Traditional S&T policy with systemic elements: module production ☒ Systemic innovation policy with S&T policy elements: BtoB networking ☐ Predominantly systemic innovation policy Comments: also promotion of business and marketing innovations: wood as sust. material **Wood construction** ☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☒ Systemic innovation policy with S&T policy elements ☐ Predominantly systemic innovation policy Comments: Also Developer structures. Innovation issues are among the general means to enhance international competitiveness
Goals and objectives: **Woodworking**: *capacity restructuring*: new business concepts, business internationalization, IT based marketing system, *resource coordination*: R&D Centre of wood product expertise network & Wood Finland restructuring, standardization, *policy implementation:* firm level activities & coordination of regional public support systems (based on Regional technology strategies through Employment and Technology Centres) **Wood construction:** *Re engineering in wood frame construction* process as a part of general construction process re engineering (e.g. SARA program by TEKES: value chain development in construction)	
Issues, problems and related topics:	

Woodworking: restructuring of business among SMEs: networking based on core firms **Wood construction:** High cost competitiveness & knowledge base in concrete construction value chains, public norms in wood frame construction
Innovation areas: **Woodworking**: restructuring of business among SMEs: networking based on core firms **Wood construction** Product, process organisational and market innovations, but mentioned in a relatively general way
General comment: *Business architecture challenges* in wood frame construction value chains: mismatch of competitive advantages in primary/secondary wood prod. Industries and construction *Impacts from construction process re engineering upflow* especially into forestry

Part B - Innovation Support Measures

Research and Development	**Woodworking** *Creation of national research programs* (projects in Finnish Forest Cluster Research Portal http://www.forestclusterportal.fi/index.php/Main_Page Forest Cluster Inc. , *Creation of international research programs* Wood Wisdom Net http://www.woodwisdom.fi/default.asp?docId=12471 **Wood construction** R&D financing (TEKES), Wood frame construction promotion in Europe Joint projects for firms in export markets University professors: wood engineering & architecture Doctoral program: wood construction Wood construction schooling (paractical)
Diffusion of innovation	**Woodworking** *Implementation of wood product industries objectives* in regional research strategies through regional Employment and Entrepreneurship Centres http://www.tek.fi/ci/pdf/teknologia//alueelliset/alueelliset.pdf **Wood construction** Value chain compatible planning & wood module production & information especially in BtoB construction

Strengthening the knowledge base	**Woodworking** *Reorientation of WoodFinland program*((advisory & consulting for wood product SMEs towards innovation networking) *Wood Product Industries in Centres of Expertise networks* *Reorientation of wood product professional training* in Regional Universities of Applied Sciences *Large integrated research programs* (TEKES) **Wood construction** *Diffusion of knowledge from pilot projects*(low rise apartment construction) *Creation of international doctoral program* - Modern Wood Town *Large integrated research programs* (TEKES)
Strengthening interaction	**Woodworking** *Reorientation of WoodFinland program*((advisory & consulting for wood product SMEs towards innovation networking) **Wood construction** *Developer based value chain formation* *Increased interaction with public authorities* (land use, construction regulations…)
Demand creation	**Woodworking** *Creation of superior export pilot projects* **Wood construction** *Export promotion from wood frame construction projects/ components*
Improving framework conditions	**Woodworking** **Wood construction** Strengthening in knowledge base see above
Priorities	**Woodworking** *Business innovations* Improvement of international competitiveness *Product innovations* Creation of new added value products **Wood construction** *Increase in the use of wood construction elements*. Higher rate of comprehensive utilization Increased use of in house produced elements and modules
Assessment of overall relevance	**Woodworking** **Wood construction** Support on the creation of wood based value chain in BtoB construction. Innovative solution targets are interconnected.
Promotion of innovation	**Woodworking** **Wood construction** Innovative solutions are considered part of overall re engineering of construction processes. Wood frame construction value chain development is an application in construction re engineering process.
General comment:	**Woodworking** **Wood construction** Improvement of international competitiveness & added values in relevant value chains

Part B - Cross-sectoral coordination mechanisms.

Policy formulation	
Co-ordination with other processes and documents	**Woodworking, Wood construction** Both programs prepared under common umbrella Construction Re-engineering
Administrative Co-ordination:	Joint steering organisation under umbrella of WoodEurope 2001-2005 campaign co operation of four ministries MAF&ME&MT&C&MF **Woodworking** ☒ between different sections/departments within the same ministry; specify: within the Ministry of Agriculture & Forestry and Trade & Commerce respectively ☐ between different ministries, specify: ____ ☐ between ministries and other public organizations / agencies, specify: ____ Comments: **Wood construction** ☒ between different sections/departments within the same ministry; specify: within the Ministry of Environment (& inter sectoral coordination with MAF, MI with Housing Fund of Finland (wood frame construction public support see http://www.metla.fi/tapahtumat/2005/woodconstruction/Toivonen.pdf ☐ between different ministries, specify: ____ ☐ between ministries and other public organizations / agencies, specify: ____ Comments: Active inter sectoral coordination among relevant ministries in charge & relevant public and business stakeholders
Stakeholder involvement	**Private** CUAP Central Union of Agricultural Producers and Forest Owners FFIF Finnish Forest Industries Federation **Public** HFF Housing Fund of Finland TEKES Finnish Funding Agency for Technology & Innovation MAF Ministry of Agriculture and Forestry MF Ministry of Finance MI Ministry of Intermal Affairs MNE Ministry of Environment (Ympäristöministeriö) MTI Ministry of Trade and Industry
Coordination mechanisms:	☐ Formal (central) coordination body; name: ____ ☒ Formal coordination process ☒ Inter-sectoral working groups ☐ Inter-sectoral advisory body ☒ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe ____) ☐ Others: ____Z Formal (central) coordination body; name: ____
Policy Implementation	

Responsible actors and their roles:	**Woodworking** **Wood construction** To be implemented in the activities of Government 2007-2011
Level of delegation	☐ Decentralized, e.g. ☒ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☒ Local, e.g. by municipalities ☒ Regional, e.g. by regional public actors ☐ Others: _____
General comment	

TABLES FOR PART 2: FOREST SECTOR FUTURE

- Research Strategy of the Finnish Forest Sector Cluster (2 tables)
- Finnish woodworking industries 2020: Final report of the scenario and strategy analysis (1 table)

Part A – General document information

Name:	**Research Strategy of the Finnish Forest Sector Cluster**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☐ Government ☐ Ministry:_____ ☐ Others:_____ ☒ No formal approval Level: ☐ National ☐ Regional ☐ Local Adoption date: October 2006
Validity period:	Permanent
Revision:	No update.
Monitoring / Evaluation:	Evaluation not planned.
Related documents:	Forest-Based Sector Technology Platform. 2005. Innovative and sustainable use of forest resources. Vision 2030. A technology platform initiative by the European forest-based sector. CEI-Bois, CEPF, CEPI, European Commission. 16 s. Forest-Based Sector Technology Platform. 2006. A strategic research agenda for innovation, competitiveness and quality of life. CEI-Bois, CEPF, CEPI, European Commission. 26 s.
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	No budget, but indicated that the strategy should be supported through hundreds of millions of private and public funds in the future.
General description of contents as written in document	
Objective of the document	The documents provide a strategic research agenda for the forest cluster future innovations.

Priorities	- operational efficiency - new products and business innovations - sustainable development
Structure	
Measure Areas	
Follow-up / Implementation	
Follow-up measures:	☐ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adaptation of regulations/laws; name: ☐ New or adaptation of informational campaigns/instruments; name: ☒ New or restructuring of institutions/organisations; name: Establishment of parastatal company Forest Cluster Ltd ☐ Implementation in forest policy:
General comment:	There is a clear need to study innovation system rather than separate lines of policies. For example, this document listed here is not actually a policy document but it will have a strong policy impact on how business supporting measures are developed in public/private organisations.

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the more generic terms 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document	☐ never ☐ sometimes ☒ frequently
	Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document	☐ never ☒ sometimes ☐ frequently
	Please mark the frequency of occurrence of the terms that are related to innovation, for example entrepreneurship, diversification, competitiveness	☐ never ☐ sometimes ☒ frequently Terms used:
	Further comments on overall innovation orientation of the document: The whole document is about to support innovations!	
Relevance of innovation: Please mark how much relevance is given to innovation in the document (one answer)	☐ No relevance at all ☐ Marginal issue ☐ One issue among others ☐ Important issue ☒ Central issue Comments:	
Degree of specification: Please mark how general or specific innovation is addressed by the document (one answer) Please use comments	☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☐ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☒ rather specific *(innovation is addressed in concrete goals, measures are formulated)*	

section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry	☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments:
Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☒ Systemic innovation policy with S&T policy elements ☐ Predominantly systemic innovation policy Comments: Sector/cluster innovations support through R&D.
Goals and objectives: To double the turnover of Finnish forest cluster by 2030.	
Issues, problems and related topics: New materials and products, business innovations, customer solutions, sustainability to support business innovations, raw material quality and availability, new processes, technology development	
Innovation areas: Product innovations, process innovations, social (structural) innovations, new business concepts	
General comment:	

Part A - General document information

Name:	**Finnish woodworking industries 2020: Final report of the scenario and strategy analysis.**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☐ Government ☐ Ministry:_____ ☐ Others:_____ ☒ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: November 2006
Validity period:	Permanent
Revision:	No planned.
Monitoring / Evaluation:	No.
Related documents:	Not yet available.
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	No budget (strategy document)
General description of contents as written in document	
Objective of the document	To assess the opportunities for woodworking industry development in the future.
Priorities	
Structure	

Measure Areas	
Follow-up / Implementation	
Follow-up measures:	☒ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adaptation of regulations/laws; name: ☐ New or adaptation of informational campaigns/instruments; name: ☐ New or restructuring of institutions/organisations; name: ☐ Implementation in forest policy:
General comment:	There is a clear need to study innovation system rather than separate lines of policies. For example, this document listed here is not actually a policy document but it will have a strong policy impact on how business supporting measures are developed for woodworking industries.

4.3. Appendix to the tables

4.3.1 Forest based industry innovation infrastructure in Finland

The forest industry capacity in Finland can be divided into subgroups not only by a) pulp and paper industry, b) primary wood product industry and c) secondary wood product industry, but by size and business orientation (Finland. 2005. COST E30 Homepage).

Production capacity as well as business orientation in a) is global. These interests identifiable in multi sector global corporations in a) have also large domestic business interests in b) covering sawmills and wood plate mills but also planning and some engineering wood product mills. One of the reasons for the international pulp and paper companies being interested on primary wood product industry and especially sawmilling is that two thirds of the Finnish forests are privately owned, and majority of the incomes from wood sales comes from sawn- or plywood. To have access to the privately owned timber resources for pulp and paper, the international companies need to be present in log- and plywood markets as well. Moreover, the international companies are often the only enterprises able to buy all wood assortments form the forest owners and this provides them a clear advantage in roundwood markets.

The international pulp and paper corporations have long been innovation oriented with their joint interest on so called knowledge intensive business services (KIBS) companies like KCL: a privately-owned Finnish based research company serving the global paper and related forest cluster industries as well as the end-users of paper and board products http://www.kcl.fi. Although the innovation orientation has been strong in international pulp and paper corporations, it should be pointed that the majority of the innovation activities in this context have been product improvements and process innovations. These firms have also large internal R&D activity arrangements available for linear innovation processes. Aside developed domestic innovation capacity, these firms run also large internal R&D activities to support their linear innovation processes.

Majority of companies in b) and c), when calculated by number of firms, are SMEs with limited or no permanent internal R&D activities available. According to Peltola (2007), one of the major obstacles for being innovative in SMEs in primary wood processing industries

is the low profitability of the companies. There are simply no resources for product development of business reorientation investments.

The above illustrated characteristics that (i) the large international pulp and paper corporations in Finland have been strategically innovation oriented, but focusing mostly (also at their own cost) on the existing products and processes with linear innovation processes and (ii) the SMEs in primary wood processing industries have had limited opportunities to invest in R&D. This is necessary to know before forest industry innovation infrastructure in Finland can be understood. One outcome of the characteristics has been that most program-based public support for innovations has been targeted rather to SME based primary and secondary wood processing industries than to the processes of large international pulp and paper corporations since the 1980s. The innovation infrastructure (research and education organisations and institutions), which was established largely before the 1980s, has focused, however, still mostly on the problems relevant for the large international pulp and paper corporations in Finland – e.g. efficient wood procurement, pulping technologies and paper machinery development.

This being the history, there has been also a fundamental change in the innovation infrastructure in the mid 2000s, as the large international pulp and paper corporations have faced severe market challenges due to e.g. the overcapacity in the most important paper grades in Europe and limited opportunities to export excess production overseas to China or US as Euro has been particularly strong against US dollar in the early 2000s. This change has shifted the interest of program-based public support towards the creation of new opportunities for large international pulp and paper corporations in Finland.

- Biorefine (TEKES funded programme started in April 2007)
- Forest Cluster Inc. established in 2007

a) Promotion related to incremental process innovation potentials

Public financial and knowledge promotion to industrial R&D activities are in majority carried out through coordinated programs arranged by a singe institution TEKES - Finnish Funding Agency for Technology and Innovation from the early 1990's on. Often the TEKES programs focus on supporting new technical solution towards product and process innovations. The following programs have been funded by TEKES in order to shift the value chain from primary wood product industries into secondary wood product industries:

- Mechanical Wood Processing and Wood Based Panels Industry technology programmes 1992-1996
- Wood Construction Technology Programme 1995-1998
- The Value Added Wood Chain Programme 1998-2003
-

b) Promotion related to business and organizational innovation potentials - Wood Finland programs

WOODFINLAND program was implemented 1992-1994 in a close connection with Rural Development Program of that time to proceed i) in the establishment of wood product SME's in rural areas for higher and new employment partly to substitute and partly to complement employment decrease in non industrial private (NIP) forestry related activities development during 1992-1994 program period and ii) for the creation of network based groups of wood working SME's in rural regions. Subsequent programs to create new business networks focused into iii) the expansion of wood product industry

SME's during 1998-2002 and iv) networking European wood product markets during 2003-2007.

c) Promotion of marketing innovations and expanded use of wood

At the time of the millennium two development programs were implemented to support marketing of wood-based products and expand the use of wood. The first of the below mentioned programs was aimed to promote the use of wood as raw material and wood products and to promote secondary processing industries at the domestic markets. The second program was aimed to promote the use of wood and the development of wood processing industries in Finland through the expanded wood use in Europe.

- Domestic wood use promotion - Wood Time 1997- 2000
- European wood use promotion – Wood Europe 2001-2005

d) Promotion of innovations in secondary wood product industries – furniture production and design.

The technology program for furniture production and design by TEKES 1999-2002 concentrated to the identification of market innovations. The program was expected to help domestic industries to sustain increasing competition from low production countries in furniture markets and the parallel creation of internal retail market networks. The program was expected to support and create organizational innovations to improve the international networking of domestic furniture SMEs (Divan 2003).

Evaluation: Public subsidies to primary wood product industries in Finland from the early 1990's on have intensified parallel with the expansions of the production and export values and the turnover of these industries (see Kärnä 2005 and references there). The four major dimensions to promote innovation development in primary wood processing industries identified above can be summarized:
1) process and partly product oriented technology programs to support competitive advantages among individual firms in export markets
2) extended program activities to help SMEs to build innovative business solutions through networking and efficient use of R&D knowledge provided by Centre of Expertise network (Kärnä 2005)
3) public financing to support marketing innovations among firms in wood product and related industries
4) promotion of wood based furniture innovations (both technology and marketing e.g. through joint design activities)

4.3.2 Program - Wood Frame Construction Value Chains

a) Wood Product Industries and Wood Construction Value Chains.

Public Wood Industry & Wood frame construction development programs have partly international background what concerns issues to improve and create competitive advantages in the value chain. European Confederation of Woodworking Industries (CEI-Bois) issued non governmental program action in 1999 with companion of EU Commission to study on the future scenarios of EU woodworking industry. The project outcome – the Roadmap 2010 – was a joint effort of the various Cei-Bois member corporations. The

members of Finnish Forest Industry Federation were active in the process through Nordic Timber Council. Program brought forth an updated analysis on key factors and challenges affecting the woodworking industries, identified the opportunities, described the ideal position and produced an action program for the European woodworking industries towards 2010.
http://www.fagosz.hu/fataj/Roadmap2010CEIBois/PDFs/1_Objectives/Introduction-and-work-packages.pdf

International program scheduled required policy action targets to meet the set goals for the value chains in wood frame construction and wood interior development.
http://www.roadmap2010.eu/

The domestic wood products industry started parallel implementation of Roadmap 2010 from 2003 on with other European wood product industries. The Finnish Government launched two parallel programs in 2004 to promote entrepreneurship and business development in wood product industries and wood construction:

Woodworking Industrial Programme 2004–2010
http://www.ktm.fi/files/14701/puutuoteohjelma_lop.pdf

Wood Construction Development Programme 2004–2010
http://www.ktm.fi/files/14699/Moniste_147.pdf

These programs evaluated in Tables on *Wood Product Industries and Wood Construction Value Chains* were supported by parallel inter sectoral activities towards reformulation of National innovation System supporting Wood Frame Construction value Chains.

b) Creation of innovative infrastructure in wood product industries

Centre of Wood Product Expertise Network - Phase I
The creation of networked centre of expertise for wood products supported rural development implementation w.r.t. the creation of wood product value chains. Centres of Expertise were grouped on the basis of supporting innovation development in the relevant fields of wood product use (Wooden Town and Structural Components, New Business Concepts, Large Scale Wood Engineering and Structural Systems, Diversification of Wood Utilization, Business Based Development of Technology, Living with Wood and Design).

National network centre of expertise called PUUOSKE was focusing on business development and innovation management in wood product industries. PUUOSKE's aim was to be an umbrella organization for Finnish research in the field of wood products and provide customized, high-quality expertise for different research and development projects (PUUOSKE 2006). However, it can be evaluated than at regional and local level the potential of PUUOSKE was not been fully utilised. In the new centers of expertise programme there were no network types of centers included, although networking itself was emphasized.

Innovation policy implementation - WoodFinland business network creation promotion - Phase I 1998-2005
Focus in SMEs and aiming to a) enlarge expertise in technologies and business knowledge through incremental innovations and b) promote export oriented business networks. Activities through regional development activators.

Domestic non governmental program for wood product industries - Woodworking Industries 2020
http://www.metsateollisuus.fi/files/newsletter/Puturaportti.pdf

Enlarged Centre of Expertise Network 2007- 2013 – forest industry, energy technologies and living & housing

In the new Centre of Expertise Programme 2007-2013 there has been approved at this point 21 regional centres of expertise and 13 nationally significant cluster centres of expertise (Valtioneuvoston Tiedote 402/2006). Cluster based centres of expertise, directly focused on woodworking industries: *Forest Industry Future;* directly focused on wood frame construction: *Knowledge Cluster in Housing;* and directly focused on energy solutions: *Future Energy Technologies Cluster*.

4.3.3 Forest Sector Future – Innovation System Creation

a) Forest Sector Future

Forest sector future has been intensively studied and evaluated in the 2000s in Finland (e.g. Seppälä 2000, Jaakko Pöyry Consulting 2005, Kärkkäinen 2005a and 2005b, Niskanen 2005, Hetemäki et al. 2006, Metsäteollisuus ry and Paperiliitto ry 2006, Suomen puutuoteteollisuus … 2006). It has been expected that futures analyses would support forest sector innovations and development. The need for innovations and new strategic thinking is based on the marketing difficulties of especially Finnish based international pulp and paper companies, which have not been able to succeed in the markets in 2000s despite the high economic growth around the world. This has increased concerns on the sector's future in Finland in the long run.

It appears that some futures works support the view that the development of forest sector in the future should be based on gradually improved products, improved cost efficiency and better marketing (e.g. Jaakko Pöyry Consulting 2005, Kärkkäinen 2005a and 2005b, Metsäteollisuus ry and Paperiliitto ry 2006). Other futures works put a greater emphasize on new products and business concepts (e.g. Seppälä 2000, Niskanen 2005, Hetemäki et al. 2006, Suomen puutuoteteollisuus … 2006). In the following, the futures work on Finnish forest sector are assessed from the perspective on how and why their have evolved towards a higher support for radical innovations and what linkages the futures works build on other than forest sector policies.

Before looking to the future, one should be aware of the long history and the dominant role that forest sector has played in Finland. Up to the 1980s, the sector was far most important economic sector in the country. Due to its economic importance, it had some privileges in the Finnish society e.g. large public support for forestry and forest sector know-how as well as such political decisions as devaluation of Finnish markka, which was regularly made to increase the price competitiveness of exporting forest industry companies. The economic role of forest sector remained exceptionally high until the 1980s, when other sectors and especially the information and technology sector started to develop and attract new investments on R&D, for example.

Focusing on mass production and economics of scale since the 1960s had made especially the pulp and paper industries very resource oriented. The key strategy has been to

gradually improve the energy and material efficiency of production and to improve the overall productivity to maintain cost competitiveness. This strategy included focusing on core products and merging and acquisition of forest sector companies, which appears still today to be the most valid strategy among major large scale pulp and paper companies.

The focusing strategy has faced some fundamental concerns in the 1990s and the 2000s. One reason for the concern is the declining growth in the papers markets except in developing economies. This trend has attracted investments close to growing demand in the countries like China. The other reason for the concern is the growing importance of fast-growing plantations to provide cheap material for pulping. This has resulted into major pulp mill investments in South-America in particular. Aside the growing investments overseas, the pulp and paper companies have announced cost saving programs that are likely to cut production in Finland.

In this trend, some futures works argue that the success of the sector in Finland cannot be based on existing pulp and paper processes and products. This view in the whole Europe was supported by the European Commission established Forest-Based Sector Technology Platform (2005, 2006), which has resulted in Finland into the creation of National Research Agenda for the Forest Cluster up to 2030 (Maailman johtavana … 2006), and into the establishment of so called Forest Cluster Ltd. (Metsäteollisuus ry 2007), which is a company expected to coordinate the use of company and public funding for sectors renew ability and innovations.

The establishment of Forest Cluster Ltd. has been supported by the general innovation policy in Finland which emphasizes the key role of the most globally competitive clusters and their further support. Forest cluster has been nominated to be among the five most important clusters in the country (Tiede- ja teknologianeuvosto 2006), which development and sourcing has been included in the recent program of the Finnish Government at the 19th April 2007
(http://www.valtioneuvosto.fi/hallitus/hallitusohjelma/pdf/fi192852.pdf).

The high emphasize of public R&D policies on forest industry based cluster is somewhat surprising when the development in the 1990s is focused. At that time especially large scale pulp and paper industries rather spend their own money for R&D than relied on public support. Actually, it was not only that the companies didn't ask for the support, but it was also the policy of e.g. TEKES that it would not support incremental process innovations.

In the mid 2000s the question is fully different. The establishment of Forest Cluster Ltd provides new environment for R&D, where the private and public funding would be available for joint efforts to maintain and improve the cluster's international competitiveness and innovations. Concerns have been expressed, however, how committed that Finnish based but internationally operating companies are for the cooperation (Häyrynen ym. 2007).

Interestingly, the United States, Canada and Sweden have published very similar futures strategies as Finland to increase their forest sector development:

- **USA:** Forest products industry technology roadmap (2006)
- **Canada:** Forest science policy forum on transformative technologies (2006)
- **Finland:** Strategic research agenda for the Finnish forest cluster (2006)
- **Sweden:** En nationell strategisk forskningagenda för den skogsbaserade näringen i Sverige (2006)

In all countries issues such issues as biorefining (for traffic fuels) and bioenergy has been mentioned as new opportunities for the forest sector development. Finland is however more emphasizing the future development of forest *cluster* (rather than sector) in order to utilize the advantage that the forest sector supporting industries are particularly strong in the country.

An important note is that mechanical (primary or secondary) wood processing is not included at the core research agenda of the Forest Cluster Ltd. Rather, the development of mechanical forest industries is planned to be more independent from the development of pulp and paper industries, thus decreasing the emphasise for vertical integration in forest industries in general. In mechanical forest industries, future development is rather much focusing on customer businesses in construction, increasing markets in Russia and new opportunities in bioenergy.

b) New Value Chain Innovation Policy

There are ongoing research and other activities of development towards the creation of new added value chains & reformulation of the current ones. There are challenges coming from business related activities (Roadmap 2010, Forest Technology Platform (CEI Bois)) towards new orientation of wood based value creation towards the better use of sustainable development performance among wood based value chains.

Scenario activities towards the evaluation of Forest sector Industries

from the 1990's on has been accentuated into

1) the availability of wood input and employment in forest industries
2) development of wood based value chains
3) solution alternatives to intensify wood based energy value creation

Consult evaluations on availability ordered by MAF
Wood input:
Finnish Forest Industry Scenarios and their impacts to wood raw material production
29.4.2005 MAF &FFIF&CUUAP (in Finnish)
wwwb.mmm.fi/julkaisut/metsatalous/310505raportti.pdf

Employment
Availability of employment in forest management, wood harvesting & roundwood road transportation to 2020 Jaakko Pöyry Consulting 2005,
http://www.metsafoorumi.fi/dokumentit/tyovoima

Tourism and recreation
Koivula, E. and Saastamoinen, O. 2005. Näkökulmia luontomatkailuun ja sen tulevaisuuteen. University of Joensuu, Faculty of Forest Sciences. Research Notes 165. 80 p.

Development of wood based value chains
Available on communication, construction, bio-based production and tourism (Paltola 2007, forthcoming) http://www.metsafoorumi.fi/dokumentit/

Wood harvesting
Asikainen, Antti, Ala-Fossi, Antti, Visala, Arto & Pulkkinen, Päivi. Metsäteknologiasektorin visio ja tiekartta vuoteen 2020
http://www.metla.fi/julkaisut/workingpapers/2005/mwp008.htm

Public – pulp and paper industry

Metsäteollisuus ry ja Paperiliitto ry. 2006. Paperiteollisuus – Toimialan tilanne ja tulevaisuuden haasteet. (Paper Industry: State of the Art & Challenges for the Future) Paperiteollisuuden tulevaisuustyöryhmän raportti (Report of the Paper Industry Future Working Group: FFIF, UPW) 31.5.2006. 97 s.

Maailman johtavana metsäklusterina vuoteen 2030. 2006. Suomen metsäklusterin tutkimusstrategia. Metsäteollisuus ry. 39 s.

Cluster approach in R&D

The Finnish Forest Cluster Research Portal is designed to help researchers in Finland and abroad to prepare for the implementation of the Finnish NRA

- *Forest Cluster Inc.* is a company participated by private companies and public organisation in order to build a research agenda and to find necessary resources for R&D activities for the forest cluster
- Reformulated *Centre of Expertise Networks* institution expanded the field of interest what concerns forest sector value chains. The new fields of expertise are supporting value chain basis the innovation activities.
    - Forest Industry Future, aimed to support wood fibre solutions,
    - Future Energy Technologies wood based energy solutions and
    - Living Cluster wood based construction.

International network approach

- *Wood Wisdom Net (Networking and Integration of National Programmes in the Area of Wood Material Science)* is a research network that is participated by 18 different national research agencies that support the research on wood material sciences. The work is co-ordinated by Tekes, Finland.

4.3.4 Conclusions

Since the early 1990s the large pulp, paper and board industries has not been in the core focus of national innovation or other development programs. Rather, different public R&D programs have supported the development of mechanical forest and wood construction industries (often SME companies). Despite the support of different ad hoc initiatives on mechanical and wood construction sectors, many of the public institutions (sector research institutes, education, norms and regulations, etc.) have been supportive for the development of the mentioned large-scale industries.

The economic success of the large-scale forest industries in the 1990s turned suddenly down in the early 2000s, which increased the need to rapidly react on the foreseen structural changes in the large-scale forest industries. As a result, program-based (ad hoc) public programs became more targeted also to the large scale industries (or forest cluster as a whole) than it was in the early 1990s. Two examples of these recently established tools are: the establishment of Forest Cluster Ltd in 2007 and the Biorefine Technology Program that was initiated also in 2007.

Increasingly important tools to support forest-based industry innovations have been specific programs (e.g. specific programs for wood processing industries and the Center of

Expertise program) targeted to directly support the development of wood processing and related enterprises. These programs have had an aim to provide knowledge and other facilities to the enterprises that they can develop their business models and operation. Another important element in these programs has been that they were prepared to strengthen the already strong clusters or industries in Finland. This strategic shift from "strengthening the weak industries" to "supporting the already strong industries" has helped the forest industry to re-enter into the core of innovation policies in the 2000s.

It appears that the forest industry policies are currently more integrated to national economic and innovation policies but less integrated to rural and regional development or energy policies. This is logical as the forest industry development is a key to the national welfare in Finland, and innovation policies are seen the most important element in supporting the national welfare creation in the future. Rural and regional development policies have been more important for the development of SMEs in the wood processing and wood construction businesses than in the development of large scale processing industries. Energy policies have traditionally supported the competitiveness of processing industries (through low energy prices) but after the major shifts in EU energy policies in 2003-2007, energy policies have become an important element in creating new business opportunities to forest industries, especially wood-based heat and electricity production and biorefining.

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5. Innovation Policy & Entrepreneurship Policy

Miika Kajanus and Anne Matilainen (Innovation Policy), Pekka Mäkinen (Entrepreneurship Policy)

5.1. Innovation Policy

5.1.1 Introduction to the Innovation Policy

The Finnish innovation policy structure has horizontal approach overlapping with sectoral and other horizontal policies. There is not one extensive national Innovation policy document (yet) instead the innovation policy is included into several different policy documents and programmes. The new Government Programme published April 19, 2007, however, underlines that the Government will start it's work by preparing special Finnish Innovation Strategy document. The strategy is meant to be ready in March 2008 (www.innovaatiostrategia.fi/en/overview).

Nevertheless, at the moment the basis of the innovation policy has been outlined in the reports produced by The Science and Technology Policy Council of Finland. The role of these national level documents is to outline the key areas and actions and development lines needed to enhance the innovation policy in national level. The documents are related to the Government strategies as well as to The Lisbon Strategy for Growth and Jobs – The Finnish National Reform Programme 2005-2008. However, the strategy documents of the Science and Technology Policy Council of Finland represent the most coherent national approach specialising to innovation policy, when other mentioned documents are more widely focused. Therefore, as the analysed document there has been selected the report: Science, Technology and Innovation (2006), which is at the moment the most recent report outlining the innovation strategy made by the Science and Technology Policy Council of Finland.

The Science and Technology Policy Council of Finland is the co-ordinating actor in the innovation policy in national level. The council is chaired by the Prime Minister and its role is to advise the Council of State and its Ministries in important matters concerning research, technology and their utilisation and evaluation. The Council is also responsible for the strategic development and coordination of Finnish science and technology policy as well as of the national innovation system as a whole. The Council was established in 1987. The New Decree on Council came into force 1 st of January 2006. According to it, the tasks of the Council include e.g. following international developments in research and technology and the development needs they cause in Finnish research and technology, address major matters relating to science and technology policy and preparing plans and proposals concerning them for the Government. The role of the Council is also to address the development and allocation of public research and innovation funding.

The Science and Technology Policy Council publish science and technology policy reviews. The reviews analyse past developments, draw conclusions and make proposals for the future. The latest review, called Science, Technology and Innovation consists in addition to analysing the past development, of the national strategy and the development plan for the years 2007-2011. The strategy presents the focus areas, funding principles, development of structures, and internationalisation at the heart of development activities, horizontal development measures, development of human resources and development of innovation dynamics. The development plan outlines the main development lines as well as the estimated funding available (Government's budget funding). The strategy and development plan are connected to the Government's strategy documents that outline the priorities for the government's programmes.

The key agency for new innovation and technology-oriented policy on national level is Tekes (former technology center; now technology and innovation center), which aims to coordinate the direction of public subsidies to new entrepreneurship and innovation management. They use the concept of technology programmes into their service and instrument portfolio that was intended to lay background to the development financing. Technology programme of Tekes has strengthened co-operation and interaction between different parts of the national innovation system during the last 10-15 years. Typically Tekes operates with larger companies even though via different kind of special projects they have been trying to focus also to smaller companies.

The Finnish innovation policy has also been characterized by rapid increase in both public and private research funding. For example in 1991 R&D expenditure accounted for 2.1 per cent of GDP, whereas in 2001 the figure was 3.4 per cent of GDP. Large nationwide corporations have had traditionally a strong influence to the innovation system in Finland (Kautonen 2006). Also at the moment the enterprise sector stands for the majority of the R&D expenditures in Finland — in the recent years the private sector has covered over 70 per cent of all R&D inputs (Tekes 2007). This means that a large part of new knowledge and new technologies is produced outside academia or other public research organisations.

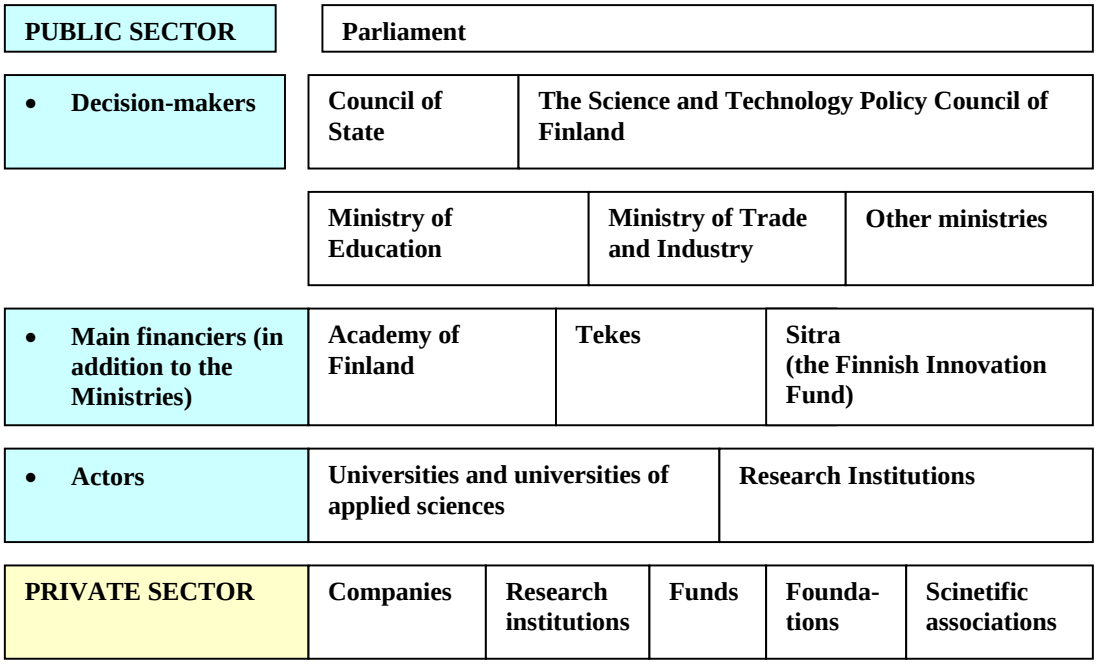

Figure 2. The national innovation system, administrative approach (Sources Science and technology Council, Kolehmainen 2007)

Regional approach to innovation policy

Even though the national strategy provides the basis for the regional and sectoral innovation strategies and programmes, there are several national, regional and local policy documents effecting to the formulation of the innovation environment in practical level. The innovation policy is included into several different policy documents and programmes and it can be identified various different policies from different industry sectors effecting to the innovation in forest based sectors. In addition even though the framework and guidelines of the policy documents are stipulated in the national and EU levels, the regional priorities have a strong role in directing the innovation policies at the regional level. When all this is combined to the SME's often unique requirements for regional innovation systems (see e.g. Kautonen 2006), the innovation environment, as a whole, can appear in very different and sometimes complex way to the companies. The policies significantly effecting to the innovation systems of companies especially in rural areas are regional and rural policies. Although Finnish innovation policy in the broader sense does not have direct territorial aims, the issue of how significant parts of the territory and population of Finland can benefit from innovative environments and processes is a topical question there too.

The development of regional dimensions of Finnish innovation policy was mainly motivated by the regional policy of EU, which Finland joined in 1995. Also the fundamental transformation of the Finnish economy in the beginning of the 90's opened up new opportunities for economic restructuring of actors and development activities also at the regional level (Jääskeläinen 2006). The

establishment of the new Employment and Economic Development Centres (TE-Keskus), with main task to develop regional economies in a systemic way, has also strengthened the regional dimension. The Centres of Expertise Programme, the Programme of Regional Centres and the recent introduction of Universities of Applied Sciences (former polytechnics) with strong regional orientation into the Finnish education system underline the increased regional focus of Finnish innovation policy and the role of regional key actors. In a Finnish context the regional innovation approach on the firm level consist of the four main elements of the general innovation environment: market, industry, technology and geography (Kautonen 2006) see Figure 3. Beyond these are institutions that are focal, consisting of a wide range of formal and informal, created and emergent, and other type of institutions.

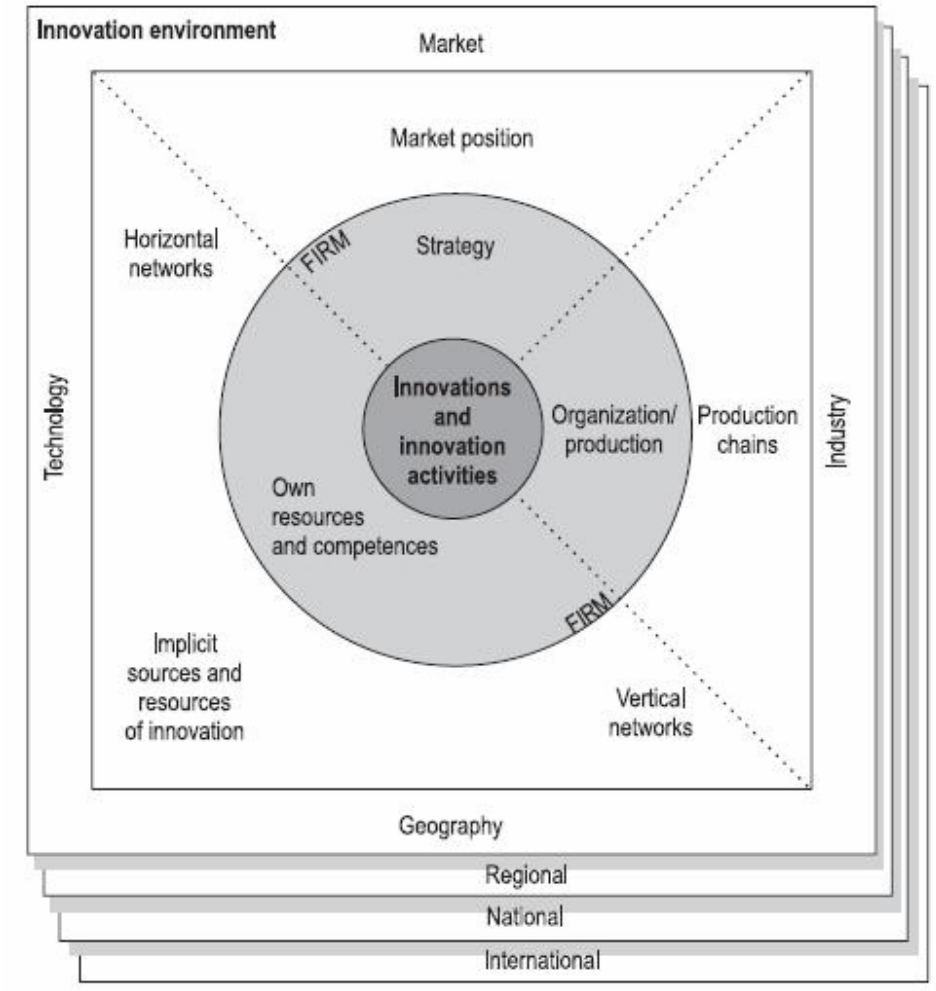

Figure3. Innovation environment characteristics by Kautonen (2006).

The focus of the national strategy Science, Technology and Innovation 2006

The innovation is the key element in the national strategy Science, Technology and Innovation. The aim of it is to contribute to the development of the whole society and the innovation system in order to guarantee the successful development of the country. The pivotal factors for realisation of this are increasing employment (accordingly, decreasing unemployment) and ensuring high productivity and international competitiveness. The innovation policy has a significant role in this. On a general level, the policies must be able to respond to global mega-trends and simultaneously support the continuing development of domestic activities on the current basis. As mega-trends have been recognised:

• increasing internationalisation on all levels
• continuing change in economic and social structures
• competitive factors directed at the innovation dynamics
• changes in R&D: increased professionalism, co-operation and networking, growth of the size of units and infrastructures, interdisciplinary and cross-technological activities.

In addition to these, a trend particularly evident in Finnish society is the ageing of the population.

The strategy is strongly focused on knowledge capacity building in the innovation systems and the structural solutions related to that (higher education, universities, sectoral research organisations, R&D Institutes). In addition national and trans national networking and co-operation and horizontal development activities are highlighted. The strategy also outlines development needs for policies. The policies must promote the development of the entire society and contribute to improving the production of innovations that support development and the functioning of the innovation system. Due to the horizontal nature, the innovation strategy has several connections to different parts of the Forest based sector.

The focus of the Development programme 2007–2011

The development plan for 2007-2011 highlights the co-ordination of the resources, centralising the activities (structural) in order to create the critical mass of expertise and focusing on the top quality expertise based on the demand driven approach. In addition the development plan states that the resources should be focused better on the strategically selected sectors. One of the most significant new forms of co-operation between the public and private sector in this is the *Strategic Centres of Excellence scheme*. The centres are international top-level competence centres for science, technology, and innovation (STI) in fields that are crucial to the future of the Finnish business sector and society. The Science and Technology Policy Council has identified five subject areas in which concrete measures should be taken. One of these areas focus directly on Forest sector and and at least two other have links to it. The areas are: *1) energy and the environment* (e.g., environmentally friendly energy production), *2) metal*

products and mechanical engineering (e.g., moving machinery and vehicles as well as manufacturing and automation technology), *3) the forest cluster* (e.g., comprehensive exploitation of materials such as wood and its derivatives as well as intelligent products), *4) health and well-being* (e.g., well-being of the elderly and development of individualised medical care and diagnostics), and *5) the information and communication industry and services* (e.g., services and products of the future information society). In parallel to the centres, it is important to reinforce such important and promising fields as biotechnology, new materials, nanotechnology, software engineering, and knowledge-intensive services. (Science, Technology and Innovation 2006)

Inter sectoral approach

The Finnish innovation policy structure in general has horizontal approach overlapping with sectoral and other horizontal policies. There is not one extensive national Innovation policy document instead the innovation policy is included into several different policy documents and programmes. The Science and Technology Policy Council of Finland advise the Council of State and its Ministries of different sectors in important matters concerning research, technology and their utilisation and evaluation. As stated out in the development plan for 2007-2011 one of the most significant new forms of co-operation between the public and private sector in this is the *Strategic Centres of Excellence scheme (*more information in regional policy chapter). The centres are international top-level competence centres for science, technology, and innovation (STI) in fields that are crucial to the future of the Finnish business sector and society. The Science and Technology Policy Council has identified five subject areas in which concrete measures should be taken *1) energy and the environment*, *2) metal products and mechanical engineering*, *3) the forest cluster*, *4) health and well-being*, and *5) the information and communication industry and services*.

Related programmes

The new Government Programme published in 19th April 2007 stated out that innovation capacity is seen as a engine to enhance competitiveness and to increase of productivity. The main points are the strategic knowledge inputs to chosen objectives and to increase the R&D finance to 4 % of GNP. The above mentioned *Strategic Centres of Excellence scheme* has been mentioned in the Governments Programme as well as the establishment of the University of Excellence. The Government also plan to enhance the risk finance to the enterprises and to make the make structure and the task deviation of the innovation organisations more efficient.

The Government programme is in line with the The Lisbon Strategy for Growth and Jobs – The Finnish National Reform Programme 2005-2008. In the Finnish National Reform Programme innovation is seen as one key factor in achieving the objectives of the Lisbon Strategy. The strategy outlines the Finnish innovation

policy e.g. by mentioning the Science and Technology Councils role as the lead actor in the innovation policy.

Also the Regional Innovation Strategies has been prepared for several regions. During years 2001 – 2003 almost every region in Finland had prepared regional technology strategies, in which the developing clusters and action plan are defined. In the evaluation report (Kivioja 2004) nine regional technology strategies were evaluated and seven of them had forest and forest industry cluster mentioned. Most often knowledge and know how were seen as a main object to develop.

A systemic view of innovation development has meant that instead technology strategies regions develop regional innovation strategies. For example Eastern Finland's Innovation Strategy (published in May 2007) defines seven clusters: the intelligent processes of forest industry, the moving equipments, environment-energy technology, wellbeing, safety, components in building, tourism; and three research and development areas supporting those clusters: optics- sensor- and measurement technology, material technology (plastic composites) and supporting the increase of the enterprises (innovation services).

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5.1.2 TABLES – Innovation Policy

Miika Kajanus and Anne Matilainen

As the analysed document there has been selected the report: Science, Technology and Innovation (2006), which is at the moment the most recent report outlining the innovation strategy made by the Science and Technology Policy Council of Finland.

Part A - General document information

Name:	**Science, Technology and Innovation (2006)**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☒ Government ☐ Ministry:_____ ☐ Others:_____ ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: June 2006
Validity period:	Development programme 2007-2011
Revision:	Is (regular) revision/ update of the document planned? Has it already taken place, when? The document is a definition document of the innovation policy. It estimates the current development on the innovation related policy activities and summons the strategic aims and targets for the Finnish innovation policy for the future. The Science and Technology Policy Council of Finland (chaired by the Prime Minister) revise suchlike document regularly.
Monitoring / Evaluation:	Is the implementation of the document formally monitored? Has an evaluation taken place? Is an evaluation foreseen? Regular evaluation of the different sectors of innovation policy. (Shall be evaluated on the basis of the overall impact of policy measures.) The document sets both the strategic targets for innovation policy and also defines some concrete actions for implementation.
Related documents:	Please list further specifications or amendments of the document and documents that are closely related, i.e. have a direct reference to the document. This might include working programmes, annexes, etc. These documents should be analysed together with the main document. ***Previous definition documents of innovation policy*** Knowledge, innovation and internationalisation 2003. The Science and Technology Policy Council of Finland Review 2000: The Challenge of Knowledge and Know-How The Science and Technology Policy Council of Finland ***Related documents:*** Hallituksen strategia-asiakirja 2006 (The government's strategy document 2006) http://www.vnk.fi/julkaisukansio/2006/j03-strategia-asiakirja-2006/pdf/fi.pdf (in Finnish). Outlines the actions for next four years. The Lisbon Strategy for Growth and Jobs – The Finnish National Reform

	Programme 2005-2008. Ministry of Finance. Economic and Economic Policy Surveys 3b/2005. http://ec.europa.eu/growthandjobs/pdf/nrp/FI_nrp_en.pdf
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	Amount of budget in € (indicate whether per year or for whole document period); indicate the source for the budget, i.e. state, EU, regions, co-financed, etc. Total input for research and development 33 060 Mill € (includes estimations on private funding): Government (2007-2011) Mill. 9 500 €, based on governments decisions and estimations 2006) Increase to the research funding 2007-2011 suggested in the programme: Government 400 Mill. €
General description of contents as written in document	
Objective of the document	Name shortly the main objective of the document (as written down in preamble, introduction part, vision or mission statements). The aim of the document is to define the key areas, actions and development lines needed to enhance the innovation policy in national level. The policy is strongly focused on knowledge capacity building in the innovation systems and the structural solutions related to that. In addition national and transnational networking and co-operation and horizontal development activities are highlighted. “Finland’s strategy is to ensure sustainable and balanced social and economic development. Determined development of knowledge and expertise and their quick and flexible exploitation are core prerequisites for the implementation of the strategy. This requires further investments in science, technology, and innovation.”

Priorities	Name the thematic priority areas of the document. In the area of content development, it is crucial to promote measures implementing the national strategy. The vision is to create international strategic centres of excellence in science, technology, and innovation in the fields of competence most critical to the future of business and society in Finland. The aim is to allocate already existing and new R&D resources to the centres in a new way and on a clearly larger scale than hitherto. Structural measures are also required for the development of research and for keeping it internationally competitive. In particular, top research is increasingly built around strong competence clusters and around creative research environments and high-quality infrastructures reaching the so-called critical mass. The so-called horizontal innovation policy emphasises horizontal co-operation at all levels, and through this the importance of governance is emphasised. The policy includes also facilitating access to research and other data for use in research performed in various fields." As strategic Strategic Centres of Excellences The Science and Technology Policy Council has identified five subject areas in which concrete measures should be taken. The areas are: 1) energy and the environment, 2) metal products and mechanical engineering 3) the forest cluster, 4) health and well-being, and 5) the information and communication industry and services In addition important to reinforce such important and promising fields.
Structure	Shortly sketch the basic structure of the document, i.e. different thematic parts, basic elements (e.g. action areas, indicators, etc.) The document consists of national strategy and the development plan for the years 2007-2011. The strategy presents the focus areas, funding principles, development of structures, and internationalisation at the heart of development activities, horizontal development measures, development of human resources and development of innovation dynamics. In the development plan there are outlined the main development lines as well as the estimated funding available (Government's budget funding)
Measure Areas	Name measure areas as described by the documents and general types of measures the document introduces. The measures can be divided: • developing the structures (increase efficiency, co-operation, critical mass) • the development of contents (top knowledge, world-class R&D in the fields that are most significant for the national economy, societal development, and the citizens' well-being) - identification of key areas for development - choice of appropriate funding instruments - ensuring of appropriate infrastructure and other basic prerequisites.
Follow-up / Implementation	
Follow-up	☒ No follow-up activities so far

measures:	☐ New or adapted funding programme(s) /budget line; name: ☐ New or adaptation of regulations/laws; name: ☐ New or adaptation of informational campaigns/instruments; name: ☐ New or restructuring of institutions/organisations; name: ☐ Implementation in forest policy:
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used The innovation policy document have strong linkages to the several other policy sectors. word count: 215 innovation/innovation related words Potential research question: How the forest sector has been represented in different innovation policy measures? Are there differences between wood and non-wood value changes?

Part B - Cross-sectoral coordination mechanisms

Innovation Policy

Policy formulation	
Co-ordination with other processes and documents	**Please list other processes or documents with which the considered document is formally co-ordinated** ____ Hallituksen strategia-asiakirja 2006 (The government's strategy document 2006) http://www.vnk.fi/julkaisukansio/2006/j03-strategia-asiakirja-2006/pdf/fi.pdf (in Finnish). Outlines the actions for next four years.
Administrative Co-ordination:	☐ **between different sections/departments within the same ministry; specify:** ____ ☒ **between different ministries, specify:** ____ ☒ **between ministries and other public organizations / agencies, specify:** ____ **Comments:** **Shortly explain the role of the main administrative actors**
Stakeholder involvement	☐ **Forestry: name most important organisations:** ____ ☐ **Forest-based industries: name most important organisations:** ____ ☐ **Agriculture: name most important organisations:**____ ☐ **Tourism: name most important organisations:** ____ ☐ **Energy: name most important organisations:** ____ ☐ **Environment: name most important organisations:** ____ ☐ **Other sector:** ____**: name most important organisations:** ____ ☐ **Other sector:** ___**: name most important organisations:** ____ **Comments:** **Shortly describe the type of stakeholder involvement**
Coordination mechanisms:	☒ **Formal (central) coordination body; name:** The Science and Technology Policy Council of Finland (chaired by the Prime Minister) ☐ **Formal coordination process** ☐ **Inter-sectoral working groups** ☐ **Inter-sectoral advisory body** ☐ **Formal mandatory consultation process** ☐ **Formal voluntary consultation process** ☐ **Informal consultations (please describe** ____**)** ☐ **Others:** ____
Policy Implementation	
Responsible actors and their roles:	**Shortly explain the role of the main actors in the implementation of the document**

	The Science and Technology Policy Council of Finland is the co-ordinating actor in the innovation policy in national level. The council is chaired by the Prime Minister and its role is to advise the Council of State and its Ministries in important matters concerning research, technology and their utilisation and evaluation. The Council is also responsible for the strategic development and coordination of Finnish science and technology policy as well as of the national innovation system as a whole.
Level of delegation	☐ **Decentral, e.g.** ☐ **Central, e.g. ministry, public agency** ☐ **Outsourced to private actors** ☐ **Local, e.g. by municipalities** ☐ **Regional, e.g. by regional public actors** ☐ **Others: _____**
General comment	**List research needs you identified, they might be taken up in phase II of COST E51** **Name further reference sources used**

Part B - Overall Innovation Orientation

Innovation Policy

<table>
<tr><td rowspan="4">Overall innovation orientation
(use word search function).</td><td>Please mark the frequency of occurrence of the <u>more generic terms</u> ‘innovation’ or synonyms (‘new products’, ‘new services’, ‘new processes’, new marketing methods’ , ‘new business models’) in the document</td><td>☐ never
☐ sometimes
☒ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the forest sector ‘innovation frontier’ – innovation areas identified in Chapter 3 - in the document</td><td>☐ never
☒ sometimes
☐ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the <u>terms</u> that are related to innovation, for example entrepreneurship, diversification, competitiveness</td><td>☐ never
☐ sometimes
☒ frequently
Terms used:</td></tr>
<tr><td colspan="2">Further comments on overall innovation orientation of the document:</td></tr>
<tr><td>Relevance of innovation:
Please mark how much relevance is given to innovation in the document (one answer)</td><td colspan="2">☐ No relevance at all
☐ Marginal issue
☐ One issue among others
☐ Important issue
☒ Central issue
Comments:</td></tr>
<tr><td>Degree of specification:
Please mark how general or specific innovation is addressed by the document (one answer)
Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry</td><td colspan="2">☐ very general (innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)
☐ rather general (innovation is addressed in overall goals, needs are identified but no specification of measures)
☒ rather specific (innovation is addressed in concrete goals, measures are formulated)
☐ very specific (quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)
Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?)</td></tr>
<tr><td>Understanding of innovation policy
Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1</td><td colspan="2">☐ Predominately traditional science and technology policy
☒ Traditional S&T policy with systemic elements
☒ Systemic innovation policy with S&T policy elements
☐ Predominantly systemic innovation policy
Comments: Please describe further the undertanding of innovation policy</td></tr>
<tr><td colspan="3">Goals and objectives:
Please specify further what objectives and goals (quantitative and qualitative) are formulated in relation to innovation?
The overall goal is to ensure sustainable and balanced societal and economic development in Finland and safeguard the national strengths like high level of education of the population and increasingly wide-ranging development and application of knowledge and expertise.

The document aims to influence to the successful implementation of national policies. The education, science, technology, and innovation policies of the coming years may be judged successful if they contribute to the development of the whole society and the</td></tr>
</table>

innovation system in the intended manner. Success requires high-quality research and competence as well as honing of all activities within the remit of the The Science and Technology Policy Council of Finland. The main principles in the development are prioritisation of operations, national and international profile-building and selective decision-making based on foresight as they are core elements in all development activities.

The aim of development measures 2007-2011 is to: 1) promote the overall functionality of the
innovation system and the system's ability to renew itself, 2) enhance the knowledge base, 3) improve the quality and targeting of research, 4) promote the adaptation and commercialisation of research results, and 5) secure adequate economic prerequisites for the activities.

Issues, problems and related topics:

Please describe shortly what main issues and problems are formulated in relation to innovation? Does the programme address other issues that are related to innovation, e.g. competitiveness of the sector, diversification etc.? Please describe shortly

The innovation strategy combines the innovation related issues from education, science, technology and innovation policy. The implementation of the strategy is strongly connected to the implementation of the development activities of different sectoral ministries and policies.

Innovation areas:

Please name the most important innovation areas named by the document and compare with the results gathered in table 3.1.

Product, process, institutional and social innovations

General comment:

List research needs you identified, they might be taken up in phase II of COST E51

Name further reference sources used

word count innovation 209 innovative 5

Part B - Innovation Support Measures

Research and Development	- Share of RD costs by enterprises is targeted to remain about 70 % of total - "A special challenge for Finland is also the fact that 57 per cent of enterprises (50% of industrial and 63% of service enterprises) do not carry out innovation activities…The accessibility, efficiency, and impact of public innovation services (funding, education, guidance, internationalisation) must be improved considerably."
Diffusion of innovation	"The special characteristic of Finland is that enterprises prefer to innovate by themselves rather than acquire innovations made elsewhere. This is seen as a weakness; that is, it seems that Finns are bad buyers and not so much poor sellers.
Strengthening the knowledge base	"Innovation policy is grounded in the high level of education of the population as well as increasingly wide-ranging development and application of knowledge and expertise. These national strengths must be safeguarded for the future. To this end, more international co-operation is needed." In the document there are several measures targeted to strengthen the knowledge base on the selected areas: general increase of RD inputs, Strategic Centres of Excellence, world-class researchers to work in Finland for two to five years (FiDiPro),
Strengthening interaction	The interaction between key actors are supported at international, regional and horizontal levels, e.g. mobility programmes in between research organisations and enterprises and strategy processes among actors: "A special challenge lies in the creation of strategy processes combining public and private parties and national and regional innovation environments. We must ensure that development activities at regional and local level and the national policy are interactive and complementary to each other. The development of strategy processes supporting this aim should proceed simultaneously in many different directions, and not in a centralised manner steered by a single authority, organisation, or interest group. Core parties in the strategy process are the Ministry of Trade and Industry, the Ministry of Education, and the Ministry of the Interior. At regional level, the main parties are Employment and Economic Development Centres, Tekes, and the technology centres. Also, VTT – a research institute well connected to regional innovation environments – must participate in the processes. The same applies to regional and local, often private, parties and educational and research organisations."
Demand creation	The document do not promote real measures for demand creation, however, it notes the importance of those: "Need- and demand-based activities must be strengthened alongside supply-based development. Thus we can increase the positive effects of research and education investments and promote employment, productivity, and competitiveness. Several global developments affecting all countries constitute the background to the demand."

Improving framework conditions	- Strategic Centres of Excellence in STI (e.g. forest cluster) - Structural development of higher education, research and development infrastructure in Finland "Co-operation between financiers and pooling of resources is one clear line of development. Another is developing the structures, financial governance, and management of research organisations in such a way that the central contentual target of the Government resolution is reached – i.e., world-class R&D in the fields that are most significant for the national economy, societal development, and the citizens' well-being." -
Priorities	Improving framework conditions STI 130 infra 20 research careers 50 graduate schools 15 Overhead of FA 20 competitive R&D 60 research 60 Technology 20 Sectoral 25 Total 400
Assessment of overall relevance	Totally relevant for innovation support
Promotion of innovation	Focusing on institutional innovations
General comment:	

5.2. Entrepreneurship Policy

Pekka Mäkinen

5.2.1 Entrepreneurship Policy Programme

The Government of Finland implemented their Entrepreneurship Policy Programme as part of its economic and industrial policy during their period 2003 - 2007. Public support to new entrepreneurship was among the priorities of the Government and there was minister level participation from 5 Ministries in addition to the Minister of Trade and Industry (MTI). The main objectives in the program were to: a) safeguard a stable and predictable operational environment for enterprises and b) ensure the adequate use of the resources available for promotion of entrepreneurship. The main focus of the Entrepreneurship Policy Programme was in the support of new entrepreneurship and the growth of SMEs by:

- entrepreneurial training and consultancy
- establishment, growth and internationalization support on SMEs
- entrepreneurial taxes and payment arrangements
- regional entrepreneurship support
- provisions governing entrepreneurship and the functioning of markets

PPP approach was applied in program implementation. Supported implementation through the consultative committee for entrepreneurship consisting of the representatives of various interest groups. Their mandate was to promote commitment to the objectives of the programme.

6. Rural Development Policy

Hilkka Vihinen

6.1. Introduction to Finnish Rural Policy

Finnish rural policy has taken as its starting point the fact that countryside has value as such. Countryside offers an alternative to urban regions and lifestyles, and its very existence and availability is an important social value. It is not just a hinterland affected by the positive or negative forces deriving from population centres, but a region with a will and vision of its own. However, like urban areas, it needs active development methods of the public sector. Hence, the task of rural policy is to guarantee the existence of viable and functioning countryside. (Viable countryside – our joint responsibility 2004.)

Essential in Finnish rural policy is that it cuts across sectoral concerns and has a territorial orientation. The strategic objective of rural policy is to incorporate rural areas more closely to general development work carried out by public and private actors, and to make the rural point of view acknowledged in the daily running of the society. This is done by pursuing both **broad and narrow rural policy**. Broad rural policy refers to the efforts to influence all actions that impact rural areas implemented within and by the different administrative sectors as part of the development of the society. Narrow rural policy consists of the measures targeted specifically at the rural areas.

As in many other countries, rural policy was in Finland originally based on the outlines and strategies of other policy sectors, in particular agricultural and regional policy. Up till the 1960s, rural policy was primarily agricultural policy with self-sufficiency as the main goal. Agricultural policy was also used to support national independence and cohesion within society during the politically unstable years after WWII. During the 1960s, agricultural policy adopted also aspects of social policy at the same time as it aimed at modernising agricultural production. From the late 1960s onwards, industrialising regional policy was used to promote employment in rural areas. (Vihinen 1994.) The establishment of the Nordic welfare state system all over the country in the turn of the 1970s was, however, probably the most important rural policy event during these decades: it led to a regionally comprehensive provision of services and in practice established a lot of new jobs in the welfare sector in particular for rural women (Pyy and Lehtola 1996).

The rapid structural change in agriculture culminated in early 1970s, during the years of rural depopulation and emigration to Sweden. The dramatic changes gave rise to various responses, one of which was the emergence of rural ‘grassroots activity’, i.e. village-level action and development projects. The roots of Finnish rural policy lie both in the initiative of the rural areas themselves and in policies and administration. In the administration it was more widely recognised that a central problem in rural development by regional policies was that the

necessary functions and operations were divided between several, insufficiently coordinated sectors of administration.

The evolution of rural policy thinking was a slow and gradual process. The term 'rural policy' appeared officially for the first time in 1983 in the document of the rural development committee II. The Rural Development Project (1988-91) listed the first tools of national policy as follows:

- Planning and funding of the regional rural development projects;
- Drafting the National Rural Policy Programme;
- Implementation of national development and pilot projects; and
- Retargeting of state budget grants for rural objects.

Rural Policy Programmes have remained as the main rural policy tool also after the EU accession in 1995. The present programme from 2004 is the fourth, previous ones were published in 1991, 1996 and 2000. As described above, Finnish rural policy consists of both broad and narrow policies, and both have continued in EU membership, as well.

The main national narrow policy instruments are:

- Formulating and implementing the Rural Policy Programme;
- Work of the local action groups (partly nationally financed);
- Work of the Theme Groups;
- National research and development projects;
- Village action assuming responsibility for development work.

A list of single policy measures can hardly catch the spirit and strategy of the national approach. It makes perhaps more sense to talk about mobilising the rural people at all relevant functional levels, about networking and about designing and offering alternative modes of action. Although the Finnish rural policy system can be regarded as a **system innovation** in policy, and the Finnish version of local action work can be called an **operational innovation** (Vihinen 2007), the role of innovation in rural policy is not simple.

Finnish rural policy and innovation

"Osaamis- ja yrityskeskittymät eivät ole perinteisesti kuuluneet maaseudun kehittämisen ytimeen, mutta tässä suhteessa elämme selvästi paradigmamuutoksen aikaa. Kuntakohtaisessa kehittämisessä näkyy jo nykyisin hyvin vahva klusteriajattelu. Samoin menestykselliset keskukset ja keskittymät maaseudulla ovat antaneet uskoa siihen, että osaamis- ja klusterimuodostuksen tukeminen eri muodoissaan soveltuu myös maaseudulle (2006, 113)

The quotation above in Finnish is from 1999 when Petri Ruuskanen argued that at that time there was an individualistic bias in the rural policy's way of promoting entrepreneurship. According to him, the rural policy rhetoric did not emphasise the innovative character of this undertaking, as it concentrated on educating people to become 'spontaneous', 'autonomous' and 'self-governing' entrepreneurs. Ruuskanen uses 'The Finnish Woodwork Project', which was

financed by the Committee of Rural Policy in 1992-1994 and again from 1997 onwards, as a case in point. The project was organised at two levels: the modelling and building of the network were the tasks of certain 'Lead Companies' – presumed to be larger, medium-sized companies – which were already equipped for the export trade, while a regional organisation was responsible for the rural activities and sought out potential entrepreneurs to act as links in the production chain. The idea was that the first woodwork unit in the chain, the sawmill, could be rather small, possibly sorting, cutting and packaging the products, the next link in the chain, again possibly small units, worked up the timber further, into components or blanks. Several component manufacturers could combine their input to the final product, which was then intended to be manufactured in large enough quantities to meet the demand of the market. Ruuskanen argues that in enhancing flexible specialisation and industrial networking in this manner Finnish rural policy did not encourage the innovations, technologies and labour and marketing skills of rural enterprises or the strategy of permanent innovation.

On the other hand, a more recent study by Storhammar and Virkkala (2003) shows that rural policy has later gained some results in facilitating rural entrepreneurship and innovation by creating 'enabling' environment. According to this study, wood processing is one of the rural industrial sectors where small enterprises are continuously renewing themselves by utilising the support of customer and supplier innovation networks. Others to name could be electronics and ICT software.

Generally speaking regional innovation policy in Finland aims at developing in particular those sectors that are based on the use of expertise, knowledge and technology. Most recently, in the context of rural areas, innovation policy is more and more closely linked to bringing together the regional strengths and expertise. Anttiroiko et al. (2006) underline the increasing role of clusters of expertise and enterprises as the corner stone of innovation policy in developing rural industries. According to Anttiroiko et al (ibid., 113-116), clusters have traditionally not belonged to the core of rural development, but now a paradigm shift is on the way. Rural expertise is more common in traditional low-tech production sectors than in high-tech sectors, and the scale of expertise is smaller than in urban areas and thus the expertise clusters that can be found are mainly a kind of micro clusters (ibid., 292-293).

Rural development and innovation policy are potentially in tension if the aim of regional development is regional equality, since innovation policy implies a tendency to cluster expertise as a prerequisite for development. This is shown in the reserved and critical stand taken by the current Finnish rural policy programme (Viable countryside.., 2004, 231): regional competitiveness is a problematic political aim from the rural point of view, since competitiveness tends to improve most and easiest in those areas, where it is already good.

Inter sectoral approach: Rural policy system

Rural policy is basically inter sectoral. The Finnish rural policy system (see table 1) consists of four bodies (below in red) which are all cross-sectoral, and of three main practical methods (in blue below). In the core of the system is the Rural Policy Committee, which had functioned under different names for 12 years until it was recognised in law (Regional Development Act 602/2002).

The Committee is appointed by the Finnish Government and has 21 members. It consists of 9 ministries, of other public organisations and of private stakeholders on a partnership basis. From the forestry sector, forest owners, forest experts and the Forestry Development Centre Tapio are represented in the Committee. The daily functioning of the Committee is run by a Secretary General, who in turn is assisted by a Deputy Secretary General and of part-time secretaries in 60 different public and private organisations. This is the so-called kitchen method of rural policy, which allows for continuing effect of the rural policy system on the broad rural policy at different societal levels. The fourth part of the system is the Project Group which manages both the national research and development projects on rural policy.

The three main working methods of the rural policy system are the (national) Rural Policy Programme, national research and development projects and the Theme Groups. The Rural Policy Programme deals with broad policy issues – rural impacts of the actions of different sectoral policies and means to alleviate the negative impacts and reinforce the positive consequences. The programme is revised about every four years, and it contains both a strategic perspective and concrete proposals with explicit references to those responsible for implementing them. The Rural Policy Committee carries forward the proposals of the programme through negotiations, projects, theme group work and by influencing various processes. The preparation of the Rural Policy Programme includes the preparation of the so-called Special Policy Programme, which contains only those issues and actions that are under the competence of the Government.

In the recent years the Rural Policy Committee has used about 3 million euros per year for about 70 research and development projects. The funded projects are often closely connected to the implementation of the policy programme. There are 10-15 Theme Groups working on specific themes. In some cases the theme group is a kind of a laboratory which elaborates a new idea. These groups are often temporary. Permanent groups, such as the one for LAGs, Theme Group for Rural Tourism and Theme Group for Welfare Service are important factors in their own field.

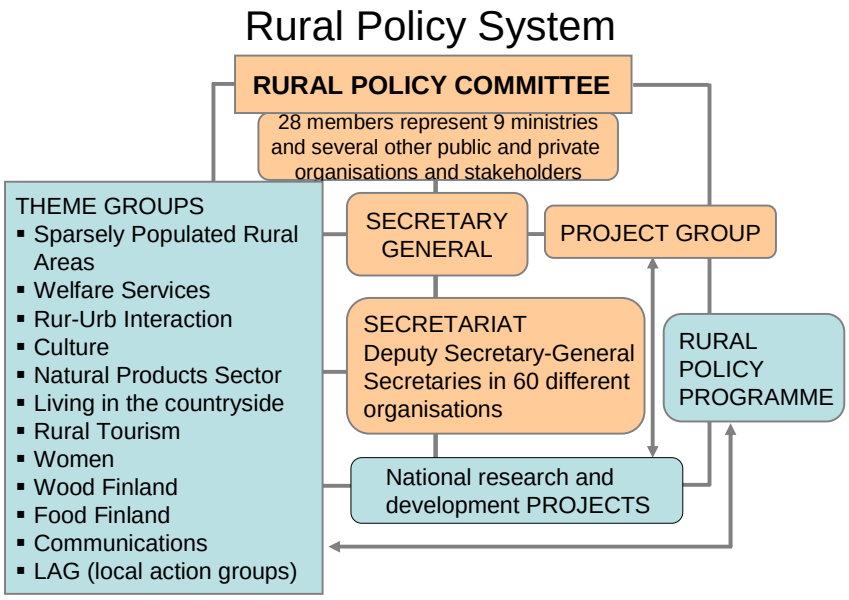

Figure 4 Finnish rural policy system

As described above, rural policy in Finland is essentially inter sectoral, and it goes beyond the structural or formal level. Namely, the national rural policy programme, currently the 'Viable Countryside', contains detailed proposals. In each proposal, the actors responsible for implementing the proposal are mentioned by name. This is the tactic by which the numerous members of the rural policy committee and of the wider system are committed to the policy programme. In the current programme, the actors bound to the implementation of the forestry part are: the government, Finnish Funding Agency for Technology and Innovation Tekes, universities of applied sciences and the technology units of the regional Employment and Economic Development Centres, Ministry of Agriculture and Forestry, Regional Forestry Network, Finnish regional councils, the social partners in the forest sector, Ministry of Education and Ministry of Trade and Industry (Viable countryside – our joint responsibility, 2004, 150).

Innovation policy in rural programmes: national rural policy programme and the Rural Development Programme for mainland Finland 2007-2013

In the national rural policy programme, Viable countryside – our joint responsibility (2004) there is only a short chapter devoted for innovation environments and expertise, but none for innovation policy as such. It had not yet in 2004 caused a paradigm change in the sense Anttiroiko et al. foresee. In this programme, innovation policy is connected to the national regional policy pursued by regional centre and expertise centre programmes. It is considered that these

innovation-based programmes complement the national rural policy programme. In addition, developing innovation environments is mentioned as a rural policy tool to improve expertise. The responsible actors responsible for this are the Finnish Funding Agency for Technology and Innovation Tekes, universities of applied sciences and the technology units of the regional Employment and Economic Development Centres.

Innovation policy is included in the programme in a very pragmatic way so that it pops up frequently in different contexts. For example, research, training and networking are core concepts in developing expertise and products regarding specific sectors such as nature products entrepreneurship and furniture industry.

In the fairly short section on forestry, its contribution to rural employment is linked to processing and 'new innovative products' (ibid., 145). The rural policy programme calls for a stronger rural and regional dimension in forest policy programmes. It also requires that regional forest programmes should be more integrated with regional development programmes. From the rural point of view investments in woodwork industry are particularly welcome (ibid.). In addition, bioenergy and the use of forest nature for recreation are important elements in the forest section of the national rural policy programme. The connection to innovation policy, however, is loose or non-existent in these respects.

In a simple content analysis of the programme text it comes out the word 'innovation' appears 67 times in the national rural policy programme which has 324 pages in total. As it comes to improving the enterprise environments and innovation structures, traditional sectors are underlined next to new sectors based on expertise. Finnish rural policy is inclined to emphasise organisational and operational innovations as well as new methods. All in all, in a sparsely populated country like Finland, the role of networking and interaction among different actors in enabling innovation is evident. ICT is regarded as an important means in spreading innovations among rural enterprises. Furniture industry has been raised as an example of a functioning expertise cluster (ibid. 205-206).

The national rural policy has traditionally been fairly critical towards the Finnish forest sector that has been strongly labelled by the interest of huge multinational corporations. One of the main problems from the rural policy point of view has been the energy-, investment- and clean water intensity, and low labour-intensity of the paper and pulp production. From the rural development point of view, the Finnish forest sector could have much stronger links to the local economy and employment. So far rural policy has concentrated in supporting mechanical wood processing, since this is more labour-intensive and also often has more links to other local actors.

The Rural Development Programme for mainland Finland 2007-2013 has a more formal and more before-hand set structure than the national rural policy programme. As it is based on the strategy of the Commission, which states the approach and policy measures available, the connections of innovation and forest policy are partly pre-written in the script.

In the 358 pages of the programme (appendixes included) innovation appears 69 times. The priorities set in the strategy for improving the competitiveness of the agricultural and forestry sector (axis 1) include the following forestry tasks:

1. To develop the production and use of wood energy and other forms of renewable bio energy. To increase the value added of small-scale wood processing. To increase the development and utilisation of new products, production methods and technologies based on innovation.

2. To improve the knowledge and skills of forest holders on the use and management of forests and to maintain the diversity of forest nature.

The programme introduces the following measures under axis 1 (the code of the measure in brackets):
- vocational training and information actions (111);
- adding value to agricultural and forestry products (123); and
- cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector (124).

Of the Community contribution for axis 1, a minimum of [50%] is allocated to the structural development of agriculture and a minimum of [4%] is allocated to utilising research and promoting innovation to develop, in particular, the food, wood and bio energy sectors. A significant part of axis 1 is funded nationally, either in the form of additional national payments within the programme or outside the programme, such as the National Quality Strategy for the Food Sector.

The priorities connected to forestry and set in the strategy for improving the environment and the countryside (axis 2) are the following:

1) To support the reduction in greenhouse gases and the preservation of organic matter in the soil and carbon sink effect through renewable bio energy produced on agricultural and forest land.

2) To preserve biodiversity in agricultural and forest environments. Special emphasis is given to the preservation of the Nature 2000 network of agricultural and forest areas.

The programme introduces the following measures under axis 2 (the code of the measures in brackets):
- natural handicap payments in mountain areas (211) and payments in other areas with handicaps (212);
- agri-environment payments (214);
- non-productive investments (216).

In terms of funding, the strategy and the programme focus on axis 2 where at least [50%] of the Community contribution to meet the objectives is allocated to

natural handicap payments and at least [30%] is allocated to agri-environment payments.

The priorities set in the strategy for diversifying the rural economy and improving the quality of life in rural areas (axis 3) are the following. They are only indirectly connected to innovations in the forest sector:

1. To slow down the decrease in the population of sparsely populated rural areas and rural heartland areas and to contribute to an improvement in employment at the same pace in the whole country.

2. To support an increase in the number of rural enterprises and jobs and the diversification of economic activities. To reinforce the share of women and the young in economic activity. To promote new innovations and product development and their utilisation to create employment opportunities in rural areas. To improve skills in both entrepreneurship and in the fields of information and other technology in rural areas.

3. To improve the attractiveness of rural areas as places of residence and leisure. To contribute to the efforts aimed at maintaining the activity and vitality of villages.

The Leader approach has proven a highly appropriate tool for rural development in Finland, and it will play a central role in reaching the objectives in axis 3. The local action groups, whose work covers the whole country, ensure the local perspective in rural development in support of the Community objectives. In addition to a community spirit, the Leader approach promotes regional, national and international cooperation and networking.

The programme introduces the following measures under axis 3 (the code of the measure in brackets):
- diversification into non-agricultural activities (311);
- support for the creation and development of enterprises (312);
- encouragement of tourism activities (313);
- basic services for the economy and rural population (321);
- village renewal and development (322);
- conservation and upgrading of the rural heritage (323); and
- training and information (331).

The forest sector and innovations in bio energy production have a strong role in the Finnish Rural Development Programme. As in the national programme, networking among the different actors is regarded essential for increasing innovations in the forest sector. The connection to national programmes is made explicit in particular as it comes to innovations in micro-enterprises in mechanical wood processing (ibid., 96). In the list of specific support measures to be used in different policy measures innovation support will be used in Finland only in the measure ‘cooperation for development of new products, processes and technologies in the agriculture and food sector and in the forestry sector’.

6.2. TABLES – Rural Development Policy

Hilkka Vihinen

To be able to safeguard the comparability of the transnational analyzing, the most relevant document for the analyzing process is Rural Development Programme for mainland Finland 2007-2013. However, Finland has a wide horizontal national Rural Policy Programme and its national relevance can not be overtaken in the document analyzing. Therefore, both documents has been analyzed in separate tables and the results of document analyzing of the Rural Policy Programme can be used as supplementary information as feasible when interpreting the results.

Rural Development Programme for Mainland Finland 2007-2013

Part A - General document information

Name:	**Rural Development Programme for Mainland Finland 2007-2013**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☐ Government ☒ Ministry:_Ministry of Agriculture and Forestry ☐ Others:_____ ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: 13.4.2007
Validity period:	2007-2013
Revision:	According to the EU programme procedure
Monitoring / Evaluation:	Ex ante evaluation has been made 31.3.2006; The programme procedure includes both mid-term and ex post evaluation
Related documents:	Please list further specifications or amendments of the document and documents that are closely related, i.e. have a direct reference to the document. This might include working programmes, annexes, etc. These documents should be analysed together with the main document.
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	The total budget for the whole programming period is 7 407 965 754 euro; of which the EU co-funding is 2 062 453 331 euro. The rest is national funding.
General description of contents as written in document	
Objective of the document	To preserve a viable and active countryside, improve the state of the environment and promote the sustainable use of renewable natural resources.

Priorities	*Agriculture and forestry are practised in a way that is economically and ecologically sustainable as well as ethically acceptable in all parts of the country:* Ensuring the preconditions for the operation and continuity of multifunctional agriculture in the northernmost country of Europe. Preserving the active and sustainable use of agricultural land with special attention to maintaining the open, cultivated farming landscape. Promotion of environmental protection in agriculture and forestry, biodiversity and welfare of production animals. Production and processing of pure, high-quality products which meet the consumer expectations. Promoting the production and use of bio energy. *Action favouring and furthering the competitiveness of businesses, new enterprise and networking among entrepreneurs to diversify rural economies and improve employment:* Encouraging innovation in the development and introduction of production methods and processing of raw materials. Improving the opportunities of farmers to earn a living from other rural industries. Improving the employment opportunities of women and young people, in particular. Contributing to the development of basic services and the complementary private service sector both to take care of the ageing population and to attract new residents. *Strengthening local initiatives to improve the viability and quality of life in rural areas*
Structure	Follows the basic structure of EU rural development programmes: analysis of the situation, justification of chosen priorities, information of axes and description of measures, financing, description of monitoring and evaluation;
Measure Areas	Axis 1: Improving the competitiveness of the agricultural and forestry sector Conditions for measures aimed at promoting knowledge and improving human potential Conditions for measures aimed at restructuring and developing physical potential and promoting innovation Axis 2: Improving the environment and the countryside Conditions for measures targeting the sustainable use of agricultural land Axis 3: The quality of life in rural areas and diversification of the rural economy Conditions governing the measures to diversify the rural economy Conditions governing the measures to improve the quality of life in rural areas Axis 4: Leader Local rural development plans of action groups
Follow-up / Implementation	
	☒ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adaptation of regulations/laws; name: ☐ New or adaptation of informational campaigns/instruments; name: ☐ New or restructuring of institutions/organisations; name: ☐ Implementation in forest policy:
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Overall Innovation Orientation

<table>
<tr><td rowspan="4">Overall innovation orientation
(use word search function).</td><td>Please mark the frequency of occurrence of the <u>more generic terms</u> ‘innovation’ or synonyms (‘new products’, ‘new services’, ‘new processes’, new marketing methods’ , ‘new business models’) in the document</td><td>☐ never
☐ sometimes
☒ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the forest sector ‘innovation frontier’ – innovation areas identified in Chapter 3 - in the document</td><td>☐ never
☒ sometimes
☐ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the <u>terms</u> that are related to innovation, for example entrepreneurship, diversification, competitiveness</td><td>☐ never
☐ sometimes
☒ frequently
Terms used:</td></tr>
<tr><td colspan="2">Further comments on overall innovation orientation of the document:</td></tr>
<tr><td>Relevance of innovation:
Please mark how much relevance is given to innovation in the document (one answer)</td><td colspan="2">☐ No relevance at all
☐ Marginal issue
☐ One issue among others
☒ Important issue
☐ Central issue
Comments:</td></tr>
<tr><td>Degree of specification:
Please mark how general or specific innovation is addressed by the document (one answer)
Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry</td><td colspan="2">☐ very general (innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)
☒ rather general (innovation is addressed in overall goals, needs are identified but no specification of measures)
☐ rather specific (innovation is addressed in concrete goals, measures are formulated)
☐ very specific (quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)
Comments: Innovation is not a goal as such, it is rather a means of improving competitiveness or for increasing jobs.</td></tr>
<tr><td>Understanding of innovation policy
Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1</td><td colspan="2">☐ Predominately traditional science and technology policy
☒ Traditional S&T policy with systemic elements
☐ Systemic innovation policy with S&T policy elements
☐ Predominantly systemic innovation policy
Comments: Innovation policy is in particular connected to Axis 1 measures; efforts are planned to enhance ‘innovative cooperation’ among forest owners, wood processors, research institutes, universities, and other actors who participate in developing the forestry sector; Axis 2 is not innovation related, whereas in Axis 3, that is geared towards diversifying rural industries, includes support for innovations in micro enterprises.</td></tr>
<tr><td colspan="3">Goals and objectives:
Quantitative goals: news jobs and new enterprises</td></tr>
<tr><td colspan="3">Issues, problems and related topics:
Innovation policy is in particular connected to Axis 1 measures; efforts are planned to enhance ‘innovative cooperation’ among forest owners, wood processors, research institutes, universities, and other actors who participate in developing the forestry sector; Axis 2 is not innovation related, whereas in Axis 3, that is geared towards diversifying rural industries, includes support for</td></tr>
</table>

innovations in micro enterprises.
Innovation areas: Innovative production methods, new products, production methods and techniques that are based on innovation
General comment: List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	
	Diffusion of innovation	Measure 111: Vocational training and information actions Measure 123: Adding value to agricultural and forestry products (in forestry: only wood processing micro enterprises are eligible for this support) Measure 124: Cooperation for the development of new products, processes and technologies in the agriculture and food sector and in the forestry sector Measure 312: Support for the creation and development of enterprises Measure 331: Training and information
	Strengthening the knowledge base	Measure 124: Cooperation for the development of new products, processes and technologies in the agriculture and food sector and in the forestry sector
	Strengthening interaction	Measure 124: Cooperation for the development of new products, processes and technologies in the agriculture and food sector and in the forestry sector
	Demand creation	
	Improving frame conditions	
	Comments	
Priorities		Diffusion of innovation – it is understood that this is currently the bottleneck. On the other hand, most of the support is meant for the small rural enterprises (in particular to farms)
Assessment of overall relevance		Not the main target.
Promotion of innovation		This programme furthers in particular the diffusion of existing innovations. In addition, it may promote new innovations in bioenergy production. This document is relevant for rural development, since it has a huge budget, although most of the budget is directed to LFA-support and agri-environmental support, for which only farmers are eligible, and which do not include an innovation aspect.
General comment:		

Part B - Cross-sectoral coordination mechanisms

Policy formulation	
Co-ordination with other processes and documents	The programme document includes a part where the connections to the CAP, to cohesion policy, to common fisheries policy, to structural funds programmes and to regional development are considered. This section of the programme is not very sophisticated, and the coordination to other programmes has seemingly not been of high importance here.
Administrative Co-ordination:	☒ between different sections/departments within the same ministry; specify: between agricultural and forestry sections ☐ between different ministries, specify: ☒ between ministries and other public organizations / agencies, specify: it is compulsory to establish a network for coordinating the change of information and good practices and for facilitating internationalisation Comments: Shortly explain the role of the main administrative actors
Stakeholder involvement	☒ Forestry: name most important organisations: producer organisations (both Finnish- and Swedish-speaking ☐ Forest-based industries: name most important organisations: not mentioned in the document____ ☐ Agriculture: name most important organisations:____ ☐ Tourism: name most important organisations: ____ ☐ Energy: name most important organisations: research organisations____ ☐ Environment: name most important organisations: NGOs, research organisations ☐ Other sector: ____: name most important organisations: ____ ☐ Other sector: ____: name most important organisations: ____ Comments: Shortly describe the type of stakeholder involvement
Coordination mechanisms:	☒ Formal (central) coordination body; name: Ministry of Agriculture and Forestryx☒ Formal coordination process ☐ Inter-sectoral working groups ☐ Inter-sectoral advisory body ☐ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe ____) ☐ Others: ____
Policy Implementation	
Responsible actors and their roles:	
Level of delegation	☐ Decentral, e.g. ☒ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☐ Local, e.g. by municipalities ☐ Regional, e.g. by regional public actors ☐ Others: _____
General comment	

Appraisal of effects: Rural Development Programme 2000-2006
Most of documents that will be analysed in Part A and Part B are rather new, and effects will not be separately appraised. Task 2 "Appraisal of effects" will therefore be implemented only for the Rural Development Programme 2000-2006 wherever country capacities allow. Sources to be used are monitoring data, mid-term evaluation and final evaluation reports.

Appraisal of Effects - General Information

	Whole document (RDP)	**Forestry Part**
Total amount of funding	Amount of budget in mil. €	Amount of budget in mil. €
Total number of projects		
Total number of beneficiaries		
Average amount of funding per project		
Median of project funding		
Average amount of funding per beneficiary		
Median of funding per beneficiary		
General comment: During the period 2000-2006 there was no single RDP programme in Finland, but four different EU co-financed rural development programmes were funded in Finland: two Objective 1 area programmes (for Northern Finland, and for Eastern Finland), then the horizontal rural development programme (which includes LFA- and agri-environmental aids), and the territorial rural development aid programme. Because LFA- and agri-environmental support measures are by far the biggest in the terms of money, and they are not organised as projects, it would not make any sense in filling this table in the case of Finland.		

Rural Policy Programme

Part A - General document information

Name:	**National Rural Policy Programme**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☒ Government ☐ Ministry:_____ ☐ Others:_____ ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: 25.8.2004
Validity period:	2005-2008
Revision:	Is (regular) revision/ update of the document planned? Has it already taken place,

	when? New programme will be made till the present one runs out (end 2008)
Monitoring / Evaluation:	Is the implementation of the document formally monitored? Has an evaluation taken place? Is an evaluation foreseen? The implementation of the policy measure suggestions is followed regularly. The whole Finnish rural policy was evaluated in 2004.
Related documents:	Please list further specifications or amendments of the document and documents that are closely related, i.e. have a direct reference to the document. This might include working programmes, annexes, etc. These documents should be analysed together with the main document.
Geographical scope:	x☒ National ☐ Regional; name: ☐ Local, name:
Budget:	106 milj. euro for the period 2005-2008. Includes both state, EU, regions, co-financed and private budget sources. Most of the money already exists for the intended purposes, the programme concerns improvements in the way the money is used. Only about 46 milj. euro is clearly 'new money'. Forestry part is a small part of the whole – many proposals affect forestry indirectly, so it is impossible to give exact numbers.
General description of contents as written in document	
Objective of the document	To incorporate the rural areas more closely to the other national development work.
Priorities	• to improve the functional structures of rural areas • to renew rural industries and rural work • basic services in rural areas • to improve the level of expertise
Structure	As to the forestry part: • why forestry sector is important for Finnish rural areas • the employment and GDP share of forestry in rural areas • regional differences in the forestry sector • forestry in relation to other rural industries • the future of forestry, European trends; No indicators mentioned
Measure Areas	• national forestry programme will be reoriented in a way that is has stronger rural and regional approach. The possibility of using contracts in forestry related tasks has to be investigated. • Regional forestry programmes have to be better integrated to provincial strategies and to the planning of regional industries. Regional forestry boards have to be reformulated so that they can act as an expert body on development measures in forest and wood sector • All actors in the forestry sector have to make joint efforts so that forest work will become more attractive for young people. • The proposals that will be made by the Wood industry programme (that enhances building with wood) have to be funded 100 percent.
Follow-up / Implementation	
Follow-up measures:	☒ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adaptation of regulations/laws; name: ☐ New or adaptation of informational campaigns/instruments; name:

	☐ New or restructuring of institutions/organisations; name: ☐ Implementation in forest policy:
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the <u>more generic terms</u> 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document	☐ never ☒ sometimes ☐ frequently
	Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document	☐ never ☒ sometimes ☐ frequently
	Please mark the frequency of occurrence of the <u>terms</u> that are related to innovation, for example entrepreneurship, diversification, competitiveness	☐ never ☒ sometimes ☐ frequently Terms used: entrepreneurship, competitiveness, expertise, innovative products
	Further comments on overall innovation orientation of the document: Innovation orientation is not very strong in the document	
Relevance of innovation: Please mark how much relevance is given to innovation in the document (one answer)	☐ No relevance at all ☐ Marginal issue ☒ One issue among others ☐ Important issue ☐ Central issue Comments:	
Degree of specification: Please mark how general or specific innovation is addressed by the document (one answer) Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry	☒ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☐ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☐ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: It is a strategy for reorienting the sector	
Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☒ Systemic innovation policy with S&T policy elements ☐ Predominantly systemic innovation policy Comments: Although innovation policy is by no means the basic line of thought in the document, the way how it is used indicates both systemic approach and innovation policy with S&T	
Goals and objectives: Just qualitative		

Issues, problems and related topics: As to the forestry part of the programme, innovation is connected to products and to the need of reorienting the forestry sector from traditional products to novelties – also to forestry based services, tourism, recreation, to multifunctional use of forest (the word per se is not used, but the idea is there); innovation is also connected to bioenergy
Innovation areas: Improvement of competitiveness by reorienting forestry products
General comment: List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	No enterprise level proposals
	Diffusion of innovation	None
	Strengthening the knowledge base	None
	Strengthening interaction	Regional forestry programmes have to be better integrated to provincial strategies and to the planning of regional industries. Regional forestry boards have to be reformulated so that they can act as an expert body on development measures in forest and wood sector All actors in the forestry sector have to make joint efforts so that forest work will become more attractive for young people.
	Demand creation	None
	Improving frame conditions	Regional forestry programmes have to be better integrated to provincial strategies and to the planning of regional industries. Regional forestry boards have to be reformulated so that they can act as an expert body on development measures in forest and wood sector
	Comments	
Priorities		Regional forestry programmes have to be better integrated to provincial strategies and to the planning of regional industries. Regional forestry boards have to be reformulated so that they can act as an expert body on development measures in forest and wood sector The synergy of different development programmes at the regional level is a prerequisite for any innovation support for the sector.

Assessment of overall relevance	Innovation is not the most relevant aspect in the way how forestry has been dealt with in this programme. The programme is more concerned about strengthening the overall territorial approach in forestry sector policies.
Promotion of innovation	In the forestry part it is not promoted explicitly. In other parts of the programme, in particular as enterprises and expertise are concerned, it is much stronger. National rural policy pays also much attention to functional and social innovations.
General comment:	

Part B - Cross-sectoral coordination mechanisms

Policy formulation	
Co-ordination with other processes and documents	National rural policy programme has a status as a government policy programme, and it has to be coordinated with all other crucial policy programmes in the country
Administrative Co-ordination:	☒ between different sections/departments within the same ministry; specify: between agricultural and forest policy ☒ between different ministries, specify: the programme concerns 9 ministries ☒ between ministries and other public organizations / agencies, specify: the programme concerns also the regional administration under the 9 involved ministries Comments: In addition, the rural policy programme is prepared and implemented by a number of private and NGO bodies. All in all, the rural policy committee whose programme it is consists of 28 different actors (both public, private and NGO) It is implemented by 60 part-time secretaries in different public and private organisation all around the country.
Stakeholder involvement	☒ Forestry: name most important organisations: the section of the ministry, forest owners' organisation (both Finnish- and Swedish-speaking organisations) ☐ Forest-based industries: name most important organisations: ____ ☒ Agriculture: name most important organisations: ministry section, farmers' organisation (both Finnish- and Swedish-speaking organisations) ☐ Tourism: name most important organisations: ____ ☒ Energy: name most important organisations: ministry section ☒ Environment: name most important organisations: ministry section ☒ Other sector: name most important organisations: village organisations, extension organisations (ProAgria, Tapio); entrepreneur organisation, labour organisation, researchers Comments: Shortly describe the type of stakeholder involvement
Coordination mechanisms:	☒ Formal (central) coordination body; name: The Rural Policy Committeex☐ Formal coordination process ☒ Inter-sectoral working groups ☒ Inter-sectoral advisory body ☒ Formal mandatory consultation process ☒ Formal voluntary consultation process

	☒ Informal consultations (please describe going on all the time with different actors depending on what is actual____) ☐ Others: ____
Policy Implementation	
Responsible actors and their roles:	The above mentioned actors who form the rural policy committee are responsible also for the implementation of the programme.
Level of delegation	☒ Decentral, e.g. ☒ Central, e.g. ministry, public agency ☒ Outsourced to private actors ☒ Local, e.g. by municipalities ☒ Regional, e.g. by regional public actors As there are proposals that concern the central level, the task is delegated there, proposals concerning regional, private, NGO, local or municipal levels are delegated accordingly ☐ Others: _____
General comment	

7. Regional Development Policy

Sinikka Mynttinen & Pekka Ollonqvist

7.1. Introduction to Regional Development Policy

Finland has, parallel with EU countries:

1) Strategies (national and regional concerning structural development based on EU targets and regional development programs. European Regional Development Fund (ERDF) and European Social Fund (ESF) are used to promote the achievement of the objectives set out in the Finnish Reform Programme regional development programmes support investment and infrastructure development (by ERDF funding) to increase and strengthen regional competitiveness, employment and know-how also by funding the growth of SMEs and support structural unemployment reduction and workplace cooperation development (by ESF funding) to support regional employment, development of human resources and competencies respectively. The main challenges when implemented outside objective 1 regions are to lower structural unemployment, to secure access to labor, to promote entrepreneurship and business by preventing marginalization.

Models and strategies developed with ESF funding on a broad basis aim to reduce structural unemployment through labor force service centers, pathways of social rehabilitation, education and on the job training, securing access to labor (e.g. specific targeted training projects, training measures aimed at older and underprivileged workers), developing working life (innovative measures in the workplace) and promoting entrepreneurship (consultation services for start-up companies).

2) national policy targets in issues with national decision autonomy and financing. The type a) strategy implementation apply Lisbon strategy what concerns growth and employment. There are different policy agendas and also arenas in the current regional policy. Principles characterizing current regional administration in Finland can be listed[5]:

a) autonomy by Regional Council (RC) what concerns regional structural programs and their strategy formation. Targets and implementation is coordinated between regions by Ministry of Interior (MI) and SPOs and policy implementation has variety of solutions what concerns power structures

b) regional sovereignty what concerns bottom up processes and initials to proceed region specific structural development through EU financed structural development programs. Creation of competitive advantages and special resources through regional target programs (material/mental).

[5] OECD RURAL POLICY REVIEW – CASE FINLAND 2007 Background report for OECD

Regional programs are formulated on County bases and compiled by State Provincial Offices (SPO) into large implementation programs mainly for public (partly EU financed) arrangements.

c) National coordination and financing on national policy and programs. Top down strategy and implementation is typically applied in domestic programs

Regional Development policy has remained national for the most and parallel with EU Funded structural development programs and projects. Preparation and implementation of national policy targets has top down agenda. Current Regional Development Act proceeds the programs listed below are included into the evaluation covered by Tables

Regional policy is implemented nationally and through programmes that are partly funded by the EU. Finnish regional and structural policy accentuates expertise, innovation, technology transfer and R&D activities. Regional development is directly impacted by national and regional strategies. National objectives are implemented through the regional strategies of different administrative branches and the Government special programmes, i.e. the Regional Centre Programme, the Centre of Expertise Programme, the Regional Rural Development Programme and the Archipelago Programme. There are Innovation system strengthening targets, Regional Centre Programme related to RIS and the Centre of Expertise Programme related to SIS. The Government has submitted to Parliament a revision of the Regional Development Act so that regional programmes can be continued beyond 2006.

Finland's National Reform Programme for 2005-2008 is aimed to implement growth and employment issues towards balanced social and economic structures and sustainable development objectives defined in the Lisbon Strategy[6].

Regional Structural Programs for period 2003-2007 were derived from the strategy of the Government and aimed

a) to strengthen the knowledge base of cities and large communities through **Regional Programs** (comprised of 34 city region programs) promotes the creation of regional social infrastructures through regional bottom up processes to provide economic growth potentials for innovative processes, new entrepreneurship and regional innovation systems.
b) to promote the development of least developed, frequently remote areas through **Regional Structural Programs**
c) to strengthen the existing regional knowledge capacities by **Centre of Expertise Program 1999-2006** identifying current regional knowledge & business clusters and support networking in those clusters with focused inter sectorally coordinated financing.

[6] Ministry of Finance, Ec Dep. 2005. The Lisbon Strategy for Growth and Jobs- The Finnish national Reform Programme 2005- 2008. 3b/2005

The recent challenge, concerning Structural Funds during 2007-2013, is to strengthen the capacity for innovation, entrepreneurship and the relevant knowledge bases. The main challenges related to labor markets are to raise the employment rate, lower structural unemployment and secure access to a competent workforce.

Finland has strong and well-established traditions of tripartite cooperation between the Government and the social partners in the labor market. The cooperation between central and local governments supports commitment concerning the objectives of reforms that support policy planning. Current Institutions & structures promote the creation of regional bottom up processes. There has been public - NGO dialogues in program preparation that tend to increase social capital, social cohesion and confidence, and indirectly support capacity creation in innovation infrastructures.

Finally, the so called Triple Helix model, understood as cooperation of academia, industry and government, is seen as the key idea in regional programming in Finland. The objective of Triple Helix is to develop knowledge society at a regional level by the means of regional learning and innovation through interaction flows between research and education, industry, and regional public sector. New networks within a region require new learning, communication, and service routines on the part of institutions that produce, diffuse and regulate processes of generation and application of useful knowledge. In Triple Helix the relationship between the university, the firm, and the government is supposed to be interactive concerted action embedded in projects, communication, and new kinds of shared values.

7.2. TABLES – Regional Development Policy

Part A - General document information

Name:	**Finnish National Reform Programme 2005- 2008 (A. GJRP) & related Documents in Regional Development Policy: (B. CRP survey & RSP survey & CEP survey)**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament Government ☐ Ministry:_____ ☐ No formal approval ☒ Regional Councils' s highest decision-making body Level: National ☒ Regional ☐ Local The Government establishes the national regional development targets for a fixed period, in practice for its own term of office. The regional strategic program takes into account the national regional development targets. It is an umbrella program coordinating regional development work.
Validity period:	Valid for the Governments term of office 2003-2007.
Revision:	Prepared every four years, if necessary, they can be revised.
Monitoring / Evaluation:	Ministry of the Interior is responsible for coordinating, monitoring and evaluating the preparation and implementation of regional strategic programs jointly with other ministries and Regional Councils.
Related documents:	*** Regional Development Act 602/2002** *** Regional plans** *** A. GJRP** *EU targets (macro)* Ministry of Finance, Ec Dep. 2005. **The Lisbon Strategy for Growth and Jobs- The Finnish national Reform Programme 2005- 2008**. 3b/2005 http://www.vm.fi/vm/en/04_publications_and_documents/ 01_publications/02_economic_surveys/97179/97206_en.pdf ***B. CRP survey covering Regional Programs** (comprised of 34 city region programs) Ritsilä, J. & Laakso, S. & Haukka, J. & Kostiainen, E. & Storhammar, E. & Kuisma, H. 2006. Aluekeskusohjelman tulokset ja vaikutukset - arviointi 2001-2006. Sisäasiainministeriön julkaisu 28/2006. www.intermin.fi/julkaisut *** C. RSP survey Regional Structural Programs** Mykkänen, J. 2007. Integrating regional policy (Eheyttävään aluepolitiikkaan) Feasibility survey on regional development policy publications ministry of interior 23/2007 *** D. CEP survey Centre of Expertise Program 1999-2006 (special Program by Ministry of Interior)** Kanninen, S. & Mikkonen, R.& Kuusisto, J. & Lemola, T. & Halme, K. & Viljamaa, K. 2006. Osaamiskeskusohjelma 1999–2006 loppuarviointi.
Geographical scope:	National **GJRP** Regional; **34 CRPs & RSP** Special **CEP survey**
Budget:	Innovation support: the National Technology Agency Tekes and the Academy of Finland 50 million euros in 2006 and 2007
General description of contents as written in document	

Objective of the document	National Objectives: - The sustainability of public finances - Improving competitiveness and productivity - The functioning of the labour market Objectives by EU Commission - continue to reform tax and benefit systems in order to make work pay; - ensure that wages reflect productivity in order to improve the job prospects of low skilled groups; - step up efforts to enforce competition in network industries and non-tradable services; - increase the efficiency of the public sector; and - tighten controls on public sector spending.
Priorities	**GJRP** identifies 11 priorities *major macro-economic objectives*: * stability and the sustainability of public finances: Key measures: preparing for population ageing, including implementation of the pension, curb public expenditure and to secure welfare services and increase public sector productivity. *micro-economic priorities* *structural changes increasing competitiveness and productivity. Key measures :supporting knowledge and innovations; by promoting entrepreneurship; by creating better functioning markets; by improving communication and transport networks; and by promoting an energy and climate policy that supports sustainable development. *employment policy*, * raise the employment rate and to improve the functioning of the labor market. Key measures: extended labor market careers; to improve the incentives of tax and benefit systems and wage formation; and to improve the balance between labor demand and supply.
Structure	- reduce non-wage labour costs on the low-paid while maintaining sound public finances; - monitor the impact of recent reforms of active labour market policies on structural unemployment and regional disparities, and take special measures to facilitate the activation and integration of disadvantaged young people, disabled people and immigrants; - further reform tax and benefit systems to remove unemployment traps; - follow-up the national strategy for active ageing by improving working conditions, incentives and the provision of training for low-skilled and older workers; - take action to reduce early school leaving and increase training for the low-skilled.
Measure Areas	See priorities
Follow-up / Implementation	
Follow-up measures:	☐ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adapted regulations/laws; name:

	☐ New or adapted informational campaigns/instruments; name: ☐ New or restructured institutions/organisations; name: ☐ Implementation in forest policy: *Ministry of the Environment*: explore and identify the environmental policy issues where it is justified to use tax measures to increase cost effectiveness. *The Academy of Finland* launch a research project under the heading of Sustainable production and products. to develop new environmental technologies, allocating long-term funding to the development of environmental innovations, and helping these innovations break into the marketplace *Finnish National Fund for Research and Development Sitra* launch a major Environmental Programme – *Clean tech Finland* including environmental technology forecasts to support the networking of Finnish environmental technology and knowledge in the international marketplace *a detailed national strategy* to ensure full attention to public procurement decisions to environmental considerations *Tekes technology programmes* for enhanced networks of cooperation between business companies and research units
General comment:	**GJRP** is Central strategy document that coordinates - the national targets - special national programs implemented in the region (Regional Centre Program, Centre of Expertise Program) - programs co-financed by the European Union and - the strategies and development work of different authorities **The Ministry of the Interior** - coordination, monitoring and evaluating the preparation and implementation of regional strategic programs together with other ministries and Regional Councils **Ministries specified by the Government** - establish regional development targets and measures in their administrative sectors **Regional Councils = joint municipal boards** - prepare the regional strategic program and annually regional strategic program implementation plan **Municipalities** - responsible for regional development together with State

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the <u>more generic terms</u> 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document word count: **GJRP** 111 **CRP survey** 105 **CEP survey** 31 **RSP survey** 22	☐ never ☐ sometimes ☒ frequently

<table>
<tr><td rowspan="3"></td><td>Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document
word count:
GJRP Forest 2
CRP survey Forest 5
CEP survey forest related 12
RSP survey Forest 3</td><td>☐ never
☒ sometimes
☐ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the terms that are related to innovation, for example entrepreneurship, diversification, competitiveness
word count:
GJRP entrepreneur 83
CRP survey entrepreneur 6
CEP survey entrepreneur 0
RSP survey entrepreneur 4</td><td>☐ never
☒ sometimes
☐ frequently
Terms used: competitiveness, entrepreneurship, create</td></tr>
<tr><td colspan="2">Further comments on overall innovation orientation of the document: Although innovation or related terms are not mentioned frequently, the document relies on innovative solutions of sustainable development as well as different innovations in several sectors.</td></tr>
<tr><td>Relevance of innovation:
Please mark how much relevance is given to innovation in the document (one answer)</td><td colspan="2">GJRP central
CRP survey central
CEP survey one issue among others
RSP survey one issue among others
Comments: The basic theme is that success in a changing world requires Finland to develop further as a knowledge and innovation society. Ensuring of the innovativeness of sustainable development policy strengthens change management capacity of citizens and the society.</td></tr>
<tr><td>Degree of specification:
Please mark how general or specific innovation is addressed by the document (one answer)
Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry</td><td colspan="2">RSP survey
☒ very general (innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)
☐ rather general (innovation is addressed in overall goals, needs are identified but no specification of measures)
☐ rather specific (innovation is addressed in concrete goals, measures are formulated)
☐ very specific (quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)
Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?)

CRP survey CEP survey
☐ very general (innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)
☒ rather general (innovation is addressed in overall goals, needs are identified but no specification of measures)
☐ rather specific (innovation is addressed in concrete goals, measures are formulated)</td></tr>
</table>

	☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?) **GJRP** ☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☐ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☒ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?) Comments: Innovation is addressed as an underlying rationale, mainly in overall goals. Also needs are identified, but no specified or concrete measures.
Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☐ Systemic innovation policy with S&T policy elements ☒ Predominantly systemic innovation policy Comments:
Goals and objectives: GJRP Investment in R&D in Finland increased 3 per cent of GDP (Lisbon target) as one of the two countries in the late 1990s. Public research funding in Finland has recorded 1.04 per cent of GDP in 2004 and private business sector has accounted for around 70 per cent of total research investment in the country. The Government has committed to further increase investment in education, research, technology and innovation in order to strengthen the country's international competitiveness and to promote intellectual and material well-being	
Issues, problems and related topics: *Increased efficiency through innovations*: closer cooperation and interaction among the various players by reduce overlaps require broad coordination of industry and innovation policy measures between different administrative institutions *developing a strategy processes* towards effective coordination of RIS; SIS & NIS *organisations involved in producing innovation support services* adopt joint service models. *Innovation transfer organisations* (technology centres, incubators, local development companies) step up their cooperation and networking with public research organisations. *Universities and polytechnics* update their joint strategies to clarify their cooperation and division of labour. *The regional centre of expertise programme*: utilization sharpened and the links of this programme with innovation policy further strengthened.	
Innovation areas: organizational & marketing innovations accentuated *commercialization of innovations& management of immaterial assets*. *know-how strengthened* so that technology investments and innovations are converted	

more often into commercial products and successful businesses *needs in business expertise*, to develop and strengthen research in the fields of business administration, economics and management alongside technological know-how.
General comment:

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	National **GJRP** is based on measures to strengthen human capital, know-how and the innovation system. * *development of the innovation and education systems* to strengthen the impacts of the research input and to secure the supply of a competent workforce. * *Measures* to develop working life, promote productivity and well-being in the workplace.
	Diffusion of innovation	- increase in the number of new innovative growth companies set up in Finland, - encourage on a greater number of companies to engage in R&D - promotion for the commercial application of R&D results
	Strengthening the knowledge base	**Regional Centre Programme and the Centre of Expertise Programme** are aimed to strengthen regional expertise and innovation structures.
	Strengthening interaction	*Joint service models* in producer organisations to improve access to public innovation services (funding, training, consultation, internationalisation) and to increase service efficiency, *encourage to invest in R&D in private business companies*: public funding on good terms activating potential new customers to set up R&D projects.
	Demand creation	
	Improving frame conditions	*allocating public funding on a competitive basis:* effective option from an innovation policy point of view with respect to tax incentives. The instruments of public R&D funding for business companies consist of grants and loans (debt loans or equity loans).
	Comments no plans in Finland to introduce tax relieves on business R&D investment.	

Priorities	*company personnel* considered an important sources of business innovations but also customers, subcontractors and in many cases rival companies. The *role of entrepreneurship* pronounced in developing products out of innovations as well as in developing new business models. *work environment promotion* encouraging creativity with associated lifelong learning, entrepreneurship and business formation.
Assessment of overall relevance	support priorities towards the creation of innovative fast-growth companies in Finland through funding services for start-up companies but also to strengthen the business skills of personnel.
Promotion of innovation	*The conversion of innovations into products and new businesses* promoted by improving the functioning of markets and by repairing market defects. encouraged through supports to increasing number of companies to engage in research and development, through upgraded operations in technology & new business model adoption. *strengthen creative contents and methods of education*, foundations for innovation skills and creativity are laid at the early stages. The growth of productivity based on creativity and on the ability of work organisations & use and develop the creativity of their members.
General comment:	Systematic efforts have been invested in developing work organisations and ways of working through subsequent national working life development programmes from 1996 on

Part B - Cross-sectoral coordination

Policy formulation	
Co-ordination with other processes and documents	National **GJRP** with **Regional Centre Programme and the Centre of Expertise Programme** are aimed to strengthen regional expertise and innovation structures. The Government has submitted to Parliament a revision of the Regional Development Act so that regional programmes can be continued beyond 2006. **Structural Fund term 2007-2013** is aimed to strengthen the capacity for innovation, entrepreneurship and the knowledge base of the national economy. The main challenges facing the labour market and the world of work are to raise the employment rate, lower structural unemployment and secure access to a competent workforce
Administrative Co-ordination:	☐ between different sections/departments within the same ministry; specify: ____ ☐ between different ministries, specify: ____ ☒ between ministries and other public organizations / agencies, specify: TEKES, SITRA, Academy of Finland Comments: Shortly explain the role of the main administrative actors

Stakeholder involvement	☒ Forestry: The Central Union of Agricultural Producers and Forest Owners MTK ☒ Forest-based industries: The Confederation of Finnish Industries EK, The Federation of Finnish Enterprises ☒ Agriculture: The Central Union of Agricultural Producers and Forest Owners MTK ☐ Tourism: name most important organisations: ____ ☐ Energy: name most important organisations: ____ ☐ Environment: The Finnish Association for Nature Conservation ☐ Other sector: Comments:
Coordination mechanisms:	☒ Formal (central) coordination body; name: Regional councils ☒ Formal coordination process ☒ Inter-sectoral working groups ☒ Inter-sectoral advisory body ☒ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe ____) ☐ Others: ____
Policy Implementation	
Responsible actors and their roles:	**The Ministry of the Interior** - coordination, monitoring and evaluating the preparation and implementation of regional strategic programs together with other ministries and Regional Councils **Ministries specified by the Government** - establish regional development targets and measures in their Administrative sectors **Regional Councils = joint municipal boards** - prepare the regional strategic program and annually regional strategic program implementation plan **Municipalities** - responsible for regional development together with State
Level of delegation	☐ Decentralized, e.g. ☐ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☒ Local, e.g. by municipalities ☒ Regional, e.g. by regional public actors ☐ Others: _____
General comment	

7.3. Appendix to the tables and Finnish regional policy

7.3.1 Introduction to Finnish regional policy

Finnish regional development policy can be divided in four main phases.[7] First phase, industrialization of the least developed areas, lasted to the mid 1970's. Policy based on macroeconomic planning followed it and this second phase lasted to the late 1980's. Both policies had national targets and policy implementation was arranged correspondingly. Third phase, program based regional development policy, began after it and many issues are still actual. The phase covered adaptation to EU membership in 1995 and needs for harmonization of national and EU policy programs. New regional development policy began in 2003 by a new legislation.

Finland has, parallel with EU countries, a) strategies (national and regional) what concerns structural development based on EU targets and regional development programs, b) national policy targets in issues with national decision autonomy and financing. The type a) strategy implementation apply Lisbon strategy what concerns growth and employment. There are different policy agendas and also arenas in the current regional policy.

Principles characterizing current regional administration in Finland can be listed[8]:

- autonomy by Regional Council (RC) what concerns regional structural programs and their strategy formation. Targets and implementation is coordinated between regions by Ministry of Interior (MI) and SPOs and policy implementation has variety of solutions what concerns power structures.
- regional sovereignty what concerns bottom up processes and initials to proceed region specific structural development through EU financed structural development programs. Creation of competitive advantages and special resources through regional target programs (material/mental). Regional programs are formulated on County bases and compiled by State Provincial Offices (SPO) into large implementation programs mainly for public (partly EU financed) arrangements.
- National coordination and financing on national policy and programs. Top down strategy and implementation is typically applied in domestic progammes

Regional Development policy has remained national for the most and parallel with EU Funded structural development programs and projects. Preparation and implementation of national policy targets has top down agenda. Current Regional Development Act is aimed to proceed the creation of regional social infrastructures that can provide economic growth potentials for innovative processes, new entrepreneurship and regional innovation systems. Finland's National Reform Programme for 2005-2008 is aimed to implement growth and employment issues towards balanced social and economic structures and sustainable development objectives defined in the Lisbon Strategy[9]. Finland has strong and well-established traditions of tripartite cooperation between the Government and the social partners in the labor market. The cooperation between central and local governments support commitment concerning the objectives of reforms that support policy planning. Current Regional Development Act promotes the creation of regional bottom up processes. There has been public - NGO dialogues in program preparation that

[7] Lievonen, J & Lemola, T. 2004. Alueellisen innovaatiopolitiikan haasteita - tutkimustulosten tulkintaa. Sisäasiainministeriö. Julkaisu 16/2004. Helsinki.
[8] OECD RURAL POLICY REVIEW – CASE FINLAND 2007 Background report for OECD
[9] Ministry of Finance, Ec Dep. 2005. The Lisbon Strategy for Growth and Jobs- The Finnish national Reform Programme 2005- 2008. 3b/2005

tend to increase social capital, social cohesion and confidence, and indirectly support capacity creation in innovation infrastructures.

Regional Council (RC), the major regional planning and executive organization, is in charge to create strategic plans for general development in their region. Regional development strategy seeks preconditions and tools for economic growth, the development of economic activity to promote competitiveness and regional know-how development. Regional policy aims to diminish development gaps among internal sub regions but also those between regions. When drawing up a regional strategic programme, the region should take account of the national regional development targets set by the Government and the regional development strategies adopted by different administrative sectors. Each RC draw fixed-term regional strategic program for a fixed period covering region's potential and needs and outstanding projects in terms of regional development. Implementation plan is revised annually. Regional planning comprises a regional plan, regional strategic programme and regional land use plan. The regional plan is drawn up to indicate the desired long-term development in the region (20 to 30 years). The regional strategic programme and regional land use plan, in turn, are used to implement the regional plan. The regional strategic programme is drawn up for a medium term, and it is intended to direct and coordinate regional development work in the years to come. The programme is prepared on the basis of the targets and strategies set in the regional plan. The regional land use plan creates the potential for regional land use and sets guidelines for achieving the desired development in the region in the long run (10 to 20 years). Active improvement of RIS is an essential part of regional policy. There is a specific organization Regional Management Committee (RMC) that as an official authority prepares Structural Fund program implementing. Tripartite structure of RMC provide policy discussion arena for the key stakeholders representatives of Regional Council, municipalities and state authorities representatives of labor union and business respectively. State representatives come from Employment and Economic Development Centre (TE Centers), Environment Centre and State Provincial Offices and Forest Centers[10].

The Regional Development Strategies are designed to act as an umbrella programme to coordinate regional development work what concerns special national programmes implemented by the region, programmes co-financed by the European Union (EU) and the strategies and development work of different authorities Regional strategic plans are coordinated by region executives with relevant State authorities to meet the national targets in the issues concerned but to be coordinated within state level. Ministry of Interior (MI) is responsible for the formulation of national targets for regional development in cooperation with other ministries and the RCs. MI coordinates, monitor and evaluates preparation and implementation what concerns strategic programs and other programs with other ministries and the RC. The Government decides on regional development targets for fixed periods. State authorities adapt regional development targets set into national planning operations. RCs prepare annual regional strategic program implementation plan based on the regional strategic program in cooperation with the State authorities, municipalities. There are policy areas in category b) with mainly national macro targets but with regional specific features what concerns applications in regions.

[10] OECD Territorial Reviews, Finland, Background Report

7.3.2 Regional Development Policy implementation

Bottom up initials and planning

Regional bottom up agenda in program preparation and board participation to strategy formation in policy planning goes back to the adaptation to EU membership in the mid 1990's. The municipalities and the State are in practice responsible for the development (due to taxation system) but authorities preparing regional development are Regional Councils (RC) (mainly responsible for regional development) and the ones carrying implementation are Employment and Economic Development Centres (TE Centres), Regional Environment Centres and the State Provincial Offices and Forest Centres. There is a fundamental difference in policy objective processes between EU based and national policies. The financing for the implementation of EU based policy objectives is mainly from EU structural fund but national objective implementation differs among policies.

Regional policy structures are gradually developing the better adapt into economic policy implementation inside EU governance. Regional governance structure has characteristics of a fragmented agricultural society and job centers built around industry as well as the city hierarchy created by services. In the future, the economy will move from investment-driven growth to more innovation-driven development: Finland's regional structure will become more strongly linked to neighboring regions: the Baltic Sea area, Northwest Russia, Scandinavia, and the North Calotte region.

Regional differences have grown in recent decades, although Finland has aimed for social and regional balance to ensure equal living conditions and services. The challenges related to regional differences are of major concern in policy. There are three major policy dimensions identifiable The population in rural areas has fallen and nearly half of all Finns live in the ten largest urban areas. In addition, population is ageing in regions of negative migration. Development of regional structures has strengthening of city communities and regional knowledge base as the major targets.

Development of regional structures has mainly EU based policy objectives and major financing is attained through EU Structural Funds. Major regional development policy authority is governed by State authorities and municipalities. Regional Councils with municipalities in the region representation govern regional development planning. Government establishes regional development targets and measures concerning administrative sectors and ministries of sectors the Ministry of Trade and Industry, Ministry of Transport and Communications, Ministry of Agriculture and Forestry, Ministry of Justice, Ministry of Education, Ministry of Defence, Ministry of the Interior, Ministry of Social Affairs and Health, Ministry of Labor and the Ministry of the Environment take part into actions. RCs take into account these national targets in a regional strategic program prepared for every four years. The regional strategic programme covers all the programs implemented in the region and it takes stance on how the whole region should be developed giving also view on the role of different programs in the implementation of regional targets.

Strengthening of city communities Creation of policy preparation and implementation infrastructure has been successful during the first Regional Centre Program. Program, implemented in the period 2001-2006, covered 34 city region programs. There have been successful development projects in addition to the resource allocation to other development activities. The identification of regional priorities has considered adequate by the evaluators (Ritsilä et.al. 2006). Development of a network concerning innovation infrastructure (technology parks and connections to other centers of expertise) and schooling has been in the agenda of Regional Centre Program. The concept of innovation

infrastructure has been expanded to cultural and activity infrastructures. Three special challenges concerning innovation infrastructure of small communities are:

- Creation of communication nodes between disciplines of knowledge
- Creation of international networks and partnerships
- Creation of services to commercialize innovation

Strengthening of regional knowledge base has domestic policy objectives. Centre of Expertise program is a program with national objectives and financing. Production and employment are strongly concentrated. It seems likely, that the new logics of growth will favor the Helsinki region and other large urban regions. However, it can also push development in a more balanced direction by favoring regions that are able to specialize in their development and utilize competence networks and regional co-operation. The strong concentration development causes problems in relation to well-being and ecological sustainability in shrinking and growing regions. These problems will threaten competitiveness in the rest of the country.

7.3.3. Inter sectoral approach

Targets of regional development policy and sustainable development policy

The Government decision defines three general targets according to which the measures have been categorized: strengthening regional competitiveness, securing a service structure throughout Finland, and developing a balanced regional structure. These targets take into account the objectives of sustainable development policy defined in the National Strategy for Sustainable Development in Finland. Regional development has inter sectoral agenda by formal statements. The better the cooperation between different administrative sectors, the more effective the measures employed. Inter sectoral cooperation is essential already at the planning stage of projects and measures[11]. Regional Councils draw up an annual implementation schema for sub regions, municipalities and development organizations granting funding. The implementation plan is a joint document between State and local authorities, which provides regional authorities with political support from the region when they negotiate performance targets with the relevant ministries. Special programmes have been drawn up by Government decision to attain these targets. The programmes are the Regional Centre Programme, Rural Policy Programme, Centre of Expertise Programme and the Island Development Programme. European Union (EU) cohesion policy complements and supports national policy.

7.3.4.Sustainable development in regional innovation policy

Current challenges:

- Policy tool identification for regions at their recent stage of knowledge development
- Valid focus for policy targets: employment, growth of enterprises, supply of qualified human resources or something else
- Valid proportions of NIS RIS in development actions
- Valid instruments for systematic business internationalization

[11] Mykkänen, J. 2007. Integrating regional policy (Eheyttävään aluepolitiikkaan)
Feasibility survey on regional development policy publications ministry of interior 23/2007

The sustainable development policy of Finland aims at sustainable communities in a sustainable regional structure. Objective is polycentrism, which means strengthening a strong, cohesive urban network with functional work distribution so that various centres and regions support each other. In order to increase the appeal of Finland, centres of innovation activity and expertise will be created. This will require state and municipal co-operation concerning infrastructure. The Government decision on national regional development targets lays down the guidelines for regional innovation policy. These guidelines are designed to strengthen regional innovation policy, support the use of expertise outside regional centres and see to that the whole country can make use of the increasing amount of funding allocated to technology and expertise.

The National Strategy for Sustainable Development in Finland emphasizes the ensuring of the operational preconditions for agriculture and forestry as means of enhancing rural vitality. Further, supporting entrepreneurship in the areas of bio energy production, the protection and management of nature and cultural landscape, and diverse promotion of domestic tourism are a key focus of development work. In addition, co-operation between municipalities is needed in order to retain and create jobs and a diverse service structure.

Development investments will be directed at development occurring on the basis of the strengths and preconditions of the regions. Especially, investments focusing on improvement of global competitiveness, strengthening of expertise, and improvement of the operational preconditions for enterprises are significant. Innovation policy of small communities is missing in Finland especially what concerns rural communities. Regional Innovation Systems are aimed to strengthen co- operation options but also distribute development signals. Externally supported network or joint interest creation internationalization and rural - urban dialogue promotion have strengthened rural innovation infrastructures and Centre of Expertise Program respectively[12].

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8. Sustainable Development Policy

Sinikka Mynttinen

The sustainable development policy in Finland is based on the National Strategy for Sustainable Development. The guidelines of the sustainable development policy are suggested to be taken into account in the programmes and strategies of various administrative sectors and in those of other actors involved in the Strategy. The strategy is prepared by a broad-based multi-stakeholder Sustainable Development Strategy Group and adopted by the Finnish National Commission on Sustainable Development led by the Prime Minister. The sustainable development strategy covers economic, ecological, social and cultural dimensions of sustainable development. From the Finnish perspective, the most significant development trends and challenges for sustainable development are associated with climate change, adaptation to rapid global economic changes, and demographic changes. The sustainable development indicators has been developed and updated in the national indicator network for the purposes of monitoring. The challenges lie in evoking cooperation between different sectors in implementation of the strategy. Current challenges of the cooperation between different sectors, especially regionally and locally, include better integration of the social, economic, and ecological dimensions of sustainable development, on one hand. On the other hand, as environmental knowledge is growing fast in Finland, know-how between environmental and innovation policies need to be combined more efficiently.

8.1. Introduction to Finnish sustainable development policy

During the 1980s and 1990s the focus of environmental administration in Finland was, especially, on the control of emissions, discharges and environmental impacts of the main industrial clusters, which were material and energy intensive. However, the first national guidelines for sustainable development in Finland were written, already, in 1989 inspired by the report of Bruntland Commission. In the UN (UNGASS), as early as, 1997 Finland reported the strategies of sustainable development made by the Government and several societal actors, separately. Further, Finland was one of the first countries to build up its own program for sustainable development in 1998. The program was written according to the Agenda 21 action program approved in 1992 at the UN Conference on Environment and Development in Rio de Janeiro.

The Finnish National Commission on Sustainable Development (FNCSD), founded in 1993, defined sustainable development as follows: *Sustainable development is continuous, guided process of societal change at the global, regional and local levels, aimed at providing every opportunity to present and future generations to live a good life*. Broadly defined, sustainable development consists of three operational dimensions: an eco-economic, a societal and a cultural dimension.

The process of the new national strategy for sustainable development was initiated by the FNCSD in 2004. To prepare the strategy, a broad-based multi-stakeholder Sustainable Development Strategy Group was established. The targets of the National Strategy for Sustainable Development were guided by the following vision: *"Assuring well-being within the limits of the carrying capacity of nature nationally and globally".* The Strategy Group's proposal for a National Strategy for Sustainable Development was adopted by the FNCSD in June 2006.

In its work the Strategy Group observed the worldwide and European Union strategy processes (the Lisbon Strategy, 2000, concerning sustainable development). During the process of program preparation the Group followed principles, which applied to all dimensions of sustainable development. First, it aimed at taking into account the mutual dependence of the economic, ecological, social and cultural dimensions of sustainable development. Second, it emphasized the long-term nature of policies extending beyond the current generation. The timeline of the National Strategy for Sustainable Development was set to extend until about 2030. Third, the global, national and local consistency between various policy sectors was pursued.

The six main areas for development in order to enhance the sustainability are defined in the Strategy as follows:

- Balance between the use and protection of natural resources
- Sustainable communities in a sustainable regional structure
- Well-being through the lifecycle
- The economy as safeguard for sustainable development
- Finland as a global actor and bearer of responsibility
- Supporting sustainable choices

Consistency of sustainable development strategies at the European level is pursued by several actions, e.g. by peer-assessment, in which the policy process of each country is evaluated in turns.

Inter sectoral approach in the sustainable development policy

Sustainable development policy is, to a great extent, inter sectoral. From the beginning the work of FNCSD has been based on multi sectoral, extensive, co-operation. Innovativeness of sustainable development is suggested to be enhanced by approach referred to as a „Finnish Model", which means high-level political leadership combined with networking co-operation and programmes of the administration, scientific and civil organizations, as well as, economic life.

A broad-based multi-stakeholder Strategy Group with 20 members was established to write out the National Strategy for Sustainable Development in 2005. It was chaired by the Ministry of Finance and it had three secretaries. One of the main principles in preparing the Strategy was to create common policy guidelines to provide the basis for creating and updating the sector-specific and horizontal strategies and action plans compiled in different connections. In addition, the sustainable development indicators has been developed and updated in the national indicator network for the purposes of monitoring. Sectoral

integration ensures the principle of sustainable development to be apparent in many policy instruments, such as legislation, taxation, and environmental impact assessment.

The guidelines of the sustainable development policy are suggested to be taken into account in the programmes and strategies of various administrative sectors and in those of other actors involved in the Strategy. After adopting the new Strategy, FNCSD started a process, in which different actors promote the proposals of the Strategy both in their own activities and in co-operation with others. Idea is to recognize better such black spots, in which the objectives and activities of different administrative actors are inconsistent. The guidelines of the Strategy are also meant to be used to set up the new Government platform. The Finnish Environment Institute (SYKE) is a centre for environmental expertise in Finland, as well as a research institute. SYKE's research focuses on changes in the environment, and seeks ways to control these changes. In regions Finland's environmental administration consists of regional offices of the Finnish Environment Institute.

The emphasis given to the ecological, economic and social dimensions of sustainable development is changing. From the beginning, environmental policies have been characterized by a strong emphasis on the ecological dimensions, and, consequently, to natural sciences and engineering sciences. As far as economic sciences are concerned, the emphasis has been on environmental taxes and charges, on determining the costs for environmental damages, and cost-benefit analyses relating to environmental policy actions. The least developed dimension of sustainable development has so far been the social dimension, which has come out mainly in environmental management, improved customer awareness and environmental education. It is, however, suggested that as problem definition and identification are always results of social processes, environmental problems cannot be defined only on the basis of natural sciences. Finally, as the decisions in one sector may lead to unforeseen harmful consequences in some other sectors, the main problem might be that the three dimensions of sustainable development are treated separately in political decision-making.

Related programmes

The first phase of the Environmental Cluster Research Programme under the administration of The Finnish Ministry of the Environment started in 1997. Its funding organizations are Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry of Trade and Industry, Ministry of Transport and Communications, Agency for Technology and Innovation, Academy of Finland. The program aims at raising the level of environmental know-how, improving the state of the environment and integrating environmental issues more closely into the Finnish system of innovation. The objective of the Environmental Cluster Programme is also to promote co-operation between researchers, the business sector, public authorities and funding organizations in order to integrate environmental issues more closely into the Finnish system of innovation.

The Research Programme for Environmental Policy studies the politics of environmental problems, evaluates regulations and searches for new perspectives. The programme was initiated in 2002 and its second four-year period started in 2006. The information produced by the programme can be used to support the implementation and development of present policies.

8.2. Finnish sustainable development policy and innovations

Originally, environmental protection in Finland has in many ways been connected to the development of technology and innovations. The development and enhancement of technology has both caused environmental problems and made possible to prevent them. Consequently, the advancement of environmental innovations has become an important goal: environmental products and environmentally friendly products. The role of innovation provision is seen crucial for companies, because preventing environmental hazards by developing new technology is usually more profitable than making changes in the already existing processes. In addition, new technology has the potential to create new business opportunities for companies. Further, environmental policy and the implementation of it in forms of permit conditions, standards and regulations has opened new markets for environmental technology and advanced the practical application of new technology. Particularly, the environmental permit system has contributed to the introduction of the best available technology (BAT) promoting also indirectly the rise of innovations. Currently, Finland is one of the leading EU-countries in exports of environmental technology.

Finnish sustainable development policy and innovations

Promotion of innovations is a comprehensive rationale in the Strategy. Innovation is addressed in overall goals but no concrete measures are given. In recent years, research and discussions have suggested that the transition to a sustainable development society requires both new innovative solutions and at the same time changes in procedures and behavior. Consequently, the basic theme in the Strategy is that success in a changing world requires Finland to develop further as a knowledge and innovation society. Successful promotion of innovative sustainable development is seen to require, on one hand, consistent policy of different sectors and, on the other hand, citizens and enterprises to make choices to support it. As the main innovation support measures are mentioned legislative and economic instruments, which encourage innovations, sustainable choices and education policy.

The innovation policy, as dealt with in the Strategy, is systemic with traditional science and technology policy elements. In creating policy guidelines the Strategy Group emphasized both innovativeness of sustainable development policy and importance of providing prerequisites for new innovations through active innovation system. An effective innovation system is suggested to support the

development of dynamic information society with efficient production in terms of the environment.

In Finland the most important development trends and challenges of sustainable development calling for new solutions are associated with climate change, adaptation to rapid global economic changes, and demographic changes. The promotion of innovation covers almost all the dimensions of sustainable development in the Strategy:

1. Balance between the use and protection of natural resources:
- innovative approaches to regional and land use planning to protect living species and environments
- innovations and types of business and employment in the area of biodiversity
- new means of livelihood, e.g. entrepreneurship in territory based services
- eco-competitiveness and eco-innovations of enterprises
- new technology

2. Sustainable regional structure:
- centres of innovation activity and expertise

3. Well-being throughout the lifecycle:
- support for career development and innovativeness

4. The economy:
- technological and social innovations as a source of economical growth
- an effective innovation system
- atmosphere favouring entrepreneurship and growth of enterprises
- the growth of human resources and innovation activities

5. Sustainable choices:
- development of know-how society: operating environments and centres of expertise
- development of skills related to the bottlenecks of the innovation system
- strong investment in research and product development: inventions supporting
- sustainable development into successful products

The main innovation support measures mentioned in the strategy are legislative and economic instruments encouraging innovations, sustainable choices and educational policy. The strategy emphasizes development of a know-how society, strong investments in research and development activities, as well as, development of operating environments and strong centers of expertise. Finally, as a crucial point in pursuing sustainable development the Strategy Group underlined strengthening of human resources by offering citizens and enterprises better prerequisites to make choices to support it.

Sustainable development and innovations in the forest sector

Finland promoted the conservation, management and sustainable use of biodiversity for more than a decade on the basis of the principles, which were defined in the Convention on Biological Diversity (Rio de Janeiro 1992). In 1996 the Ministry of Environment appointed a broad-based multi-sectoral and multi-stakeholder body, National Commission for Biological Diversity. The Commission drafted the first *National Action Plan for Biological Diversity* for 1997-2005 to fulfill Finland's obligations under the Convention of Biological Diversity.

An evaluation of the impacts of the Action Plan was conducted during 2004-2005. On the basis of the evaluation, the new *National Strategy and Action Plan for the Conservation and Sustainable Use of Biodiversity in Finland* was drawn up for 2006-2016. The objectives of the revised Action Plan are:

- To halt the decline in biodiversity in Finland by 2010
- To establish favorable development trends in the state of the Finnish natural environment over the period 2010-2016
- To prepare by 2016 for global environmental changes that may threaten the natural environment in Finland, particularly with regard to climate change
- To strengthen Finland's influence in the preservation of biodiversity globally through international co-operation

All the targets above are included into the National Strategy for Sustainable Development, too. According to the Action Plan the protection of forest biodiversity will have a key role in achieving these targets.

Together with the National Strategy for Sustainable Development the sustainable forest policy of Finland has followed the principles of the UN Conference on Environment and Development in Rio de Janeiro in 1992. The scheme, in which the Finnish sustainable forest policy is formed and steered, consists of three levels (figure 5).

At the European level the national forest policy actions in Finland have taken into account the final acts of the ministerial conferences including criteria and indicator work. At the national level the sustainable forest policy is connected to the work of Finnish National Commission for Sustainable Development (FNCSD). Since 1993 the sustainable forest policy has been realized through several political actions, the most important being Finland's National Forest Program 2010. The programme also addresses the sustainable NWFP-use of forests. The Finnish criteria and indicators for sustainable forestry, which are developed and renewed by a work group appointed by the Ministry of Agriculture and Forestry, provide a basis for sustainable forest policy. The renewed set will be ready in summer 2007.

In addition, at the national level, forest certification development has worked as a voluntary market-driven process since 1996. Originally, forest certification development was formally a part of the national sustainable development strategy. It was mentioned also in the Government platform. Nowadays, the connection is more informal but, however, tight through the work of the Finnish

criteria and indicators for sustainable forestry, as well as, the development of forest biodiversity. In other words, the standards of forest certification have been developed through the criteria and indicators. In addition, the development of standards for forest certification has been worked out in a broad-based group of stakeholders.

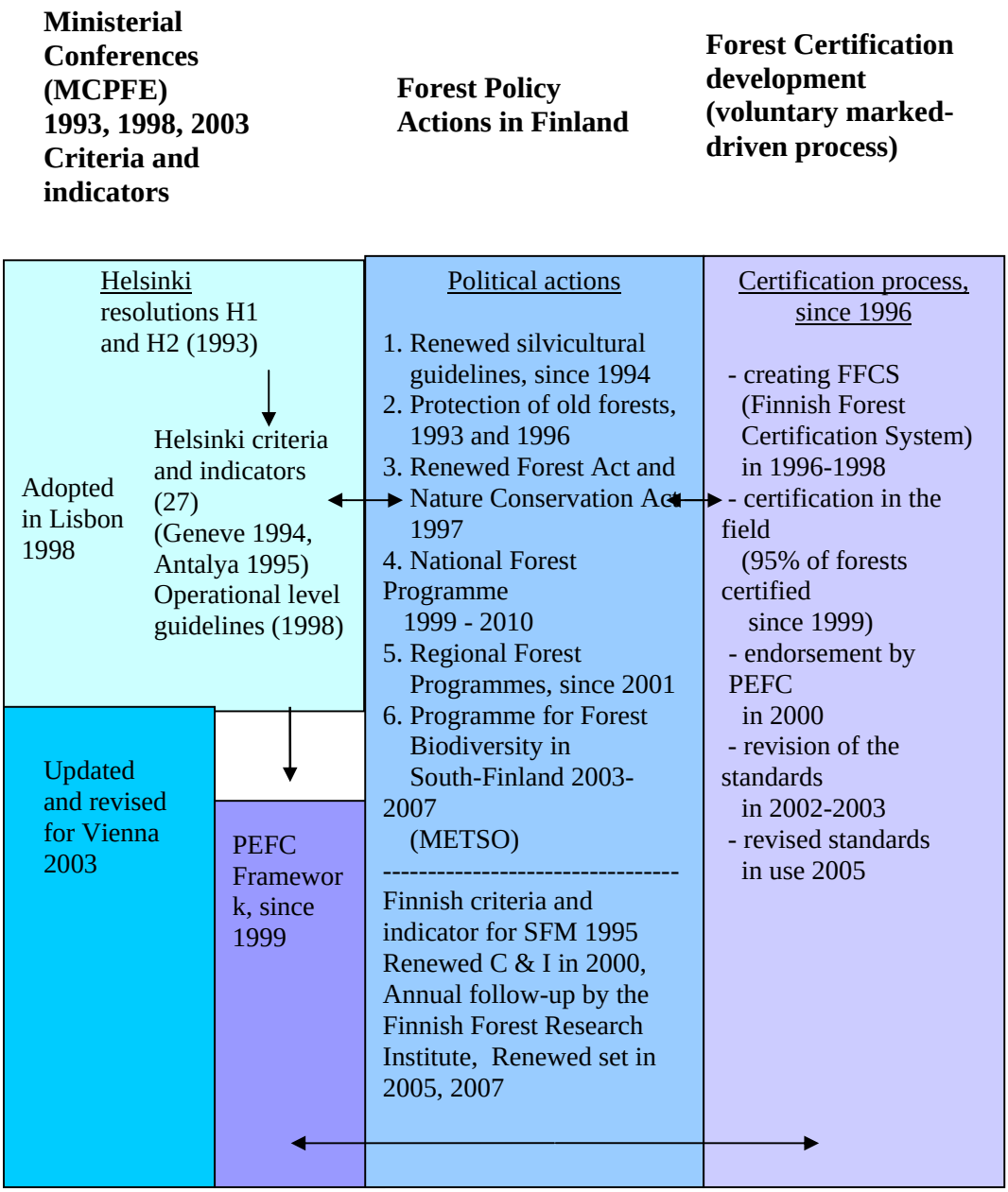

Figure 5. Process of sustainable forest policy in Finland. (Jari Parviainen)

a) Innovative METSO – Forest Biodiversity Programme for Southern Finland 2003-2007

In its Decision in Principle on the METSO-program, the Finnish Government recommended that actors in the forest sector should take forest biodiversity better into account in their forest-related activities. METSO-program is an action program to supplement Finland's National Forest Program 2010 in protecting biodiversity in forests in southern Finland. It aims at promoting conservation of forest biodiversity by combining protection with the commercial use of forests. Some of the actions are partially or completely new, and they will be evaluated through pilot projects and feasibility studies and assessment of their outcome. The proposed actions are based on improved protection for habitats and structural features which are crucial for forested landscapes and threatened species. The METSO-programme contains altogether 17 sub-programmes. METSO is supported by two large research programmes, called MOSSE - Biodiversity and Monitoring Programme (2003 - 2006), and PUTTE - Deficiently known and threatened forest species in Finland (2003 - 2007).

The METSO-program was prepared by a working group led by the Ministry of the Environment and it involved government sectors and a wide range of stakeholders. The Ministry of the Environment and the Ministry of Agriculture and Forestry (MAF) are responsible for the coordination of the Program. Private, commercial forests are in the operating range of the MAF. Total budget of the METSO-program is about 60 million euros.

b) Voluntary conservation through natural values trading as an innovation

Voluntary conservation through natural values trading executed within METSO-program can be seen as an innovative procedure arising from the needs of protecting biodiversity of forests in Southern Finland. As such, it is a completely new form of action, which is based on a new organizational model: public-private coordination.

Trading in natural values is a procedure, whereby a landowner or his authorized representative enters into an agreement to maintain or improve specified natural values of his forest and in return receives a regular payment from the "buyer" of these natural values, for example, the State of a forest conservation foundation. The agreement may define specific areas within which the owner is required to maintain a rare species or specific elements essential to biodiversity. Agreement will be made based on the needs of sellers and buyers, and they may be in force for a limited period or until further notice. When the agreement ends, the area concerned can be used as the landowner sees fit.

A pilot projects have been implemented in the area of Satakunta during the years 2003-2007. The total need for budget allocations of the pilot projects was assessed to be 2 million euros. The permanent system will be developed on the basis of the final assessment of the pilot projects by the end of 2007.

c) Innovative processes in forest certification development

There can be seen several innovative elements in forest certification development. Actually, the whole process has been completely new within the forest sector. Unlike in many other countries, in Finland over 70 percents of the wood purchased by the Finnish forest industry comes from forests owned by private persons and families. Thus, the objective of forest certification development in Finland was to develop and implement a certification system, which is feasible and adapted to national conditions and drafted by a broad range of stakeholders interested in the management and use of forests. There were in all 29 stakeholders, who represented economical, social and ecological interests taking part in the process.

PEFC (Program for the Endorsement of Forest Certification) is a global umbrella organization for the assessment of and mutual recognition of national forest certification schemes. The FFCS (Finnish Forest Certification System) certification demonstrates reliably, how the Finnish certified forests are managed and used. The Finnish Forest Certification System also conforms to the international requirements for forest certification and it can be linked to international forest certification systems. In Finland, altogether, 95 % of the forests were certified since 1999.

The process of forest certification development has generated new products like PEFC-logo and the certificate itself. The development of PEFC-logo has included several new procedures: defining the use of the logo, the follow-up of its use, specifying companies to use the logo, as well as, the marketing channels. In all, 330 000 forest owners have been entitled to the forest certificate.

Organizationally, new modes have been developed. The Finnish Forest Certification Council (FFCC) was established to do the development work. It administers and develops the FFCS System and coordinates the regional implementation of the System at the national level. In addition, FFCC acts as the national governing body of the PEFC Council in Finland and issues PEFC logo usage rights and controls their use.

In addition, new processes have been created like formulation of standards, audition, accreditation and chain of custody. A chain of custody control system demonstrates that a product includes wood fiber originating from a certified forest. In this way FFCS provides an opportunity to use product labels informing about forest certification. The standard formulation has been done by a separate work group and not e.g. accreditation or certification body. Further, a new mode of operation has emerged: impartial enterprises of forest certification, which carry out the audition in the target area of certification. Finally, consulting firms carry out auditing of the standards. Thus, the foremost object of forest certification development has been to create a system, which is open, transparent and reliable. As a whole, the FFCS represents, nowadays, an innovation of institutional type.

8.3. Conclusions

In Finland environmental know-how and environmental protection increased rapidly during the 1980s and 1990s. The Finnish Ministry of the Environment was established in 1983. Environmental policy measures like permitting and regulations together with voluntary actions by business and industry reduced emissions and discharges. Within forest sector sustainability of allowable cut reserves was of major concern. The growing environmental knowledge and awareness led to broaden the scope of sustainable development policy.

Since 1998 Finland has had a national program for sustainable development. The National Strategy for Sustainable Development sets strategic targets for sustainable development policy in Finland. The preparing task is considered a bottom-up process, as several stakeholders from different levels of society participate in it. According to the Strategy, the responsibility for the guidelines and implementation of sustainable development belongs to Finnish Government. Thus, the promotion of sustainable development in Finland is, basically, a top-down process, where the principles of the strategy are delegated to be taken into account within the framework of sustainable development. A systematic model will be developed to enable assessment of the Strategy's impacts at the national, regional and local level.

The strategy, itself, is cross-sectoral in nature as various societal actors take part in the definition and implementation of sustainable development. The stakeholder groups have a strong ownership in the processes of sustainable development and the coordination from the national to the local level is well established in Finland. However, the challenges lie in evoking cooperation between different sectors in implementation of the strategy. Current challenges of the cooperation between different sectors, especially regionally and locally, include better integration of the social, economic, and ecological dimensions of sustainable development, on one hand. On the other hand, as environmental knowledge is growing fast in Finland, know-how between environmental and innovation policies need to be combined more efficiently.

The sustainable development policy appears to be integrated to forest policy as the Strategy addresses several issues related to it: ensuring biodiversity, use of renewable natural resources and bio energy, nature protection, new means of livelihood in rural areas. These aspects are discussed also in the contexts of rural and regional policy. In addition, sustainable development policy is targeting at promotion of eco-competitiveness and eco-innovations of enterprises not only by regulations and permit conditions but also by more close involvement in Finnish innovation system.

The central tools to support innovations promoting sustainable development are creation of intellectual and social capital, as well as, legislative and economic instruments encouraging innovations and sustainable choices. Permit conditions,

regulations and environmental subsidies for companies are in use to enhance new environmental technology and business that observes sustainable development. Further, demand for innovations is created through educational policy and increasing citizens' awareness of issues and alternatives concerning sustainable development.

8.4. TABLES – Sustainable Development Policy

The document of Finland's National Strategy for Sustainable Development was chosen, as it is the latest available programme on sustainable development in Finland.

Part A - General document information

Name:	**Finland's National Strategy for Sustainable Development**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☐ Government ☐ Ministry:_____ ☒ Others: The Finnish National Commission on Sustainable Development ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: Adoption date: 13.6.2006
Validity period:	Valid until further notice.
Revision:	This document is a revision of the former The Finnish Government's Programme for Sustainable Development, approved 1998.
Monitoring / Evaluation:	The strategy will be assessed every two years on the basis of its impacts at the national, regional, and local level. It is to be linked to the EU's assessment process. The results will be reported to the Government. The success of sustainable development policy will be monitored by methods that include national indicator work. The sustainable development indicators will be developed and updated in the national indicator network between the different administrative sectors. The indicators cover strategic themes and goals of sustainable development. An overall evaluation of sustainable development in Finland was carried out in 2003.
Related documents:	Kestävän kehityksen kansallinen kokonaisarvio. Suomen ympäristö 623. Ympäristöministeriö.2003. FE645 Evaluation of sustainable development in Finland. Summery. Ministry of Environment. 2003.
Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	No budget given in the Strategy.
General description of contents as written in document	
Objective of the document	Objective is to combine the sustainable use, care and protection of natural assets assuring well-being of citizens and integrity of society in order to produce multi-skilled and sustainable Finland that can utilise its strengths. The document sets strategic targets for sustainable development policy.

Priorities	2. The mutual dependence of the economic, ecological, social and cultural dimensions of sustainable development. 5. Extending beyond the current generation and the long-term nature of policies. 3. Global, national and local consistency between various Policy sectors. 4. A strong scientific foundation and an approach based on the assessment of risks and probabilities. 5. Strengthening of human resources by offering better prerequisites for sustainable choices and equal opportunities for individuals to attain self-fulfilment and influence society.
Structure	**Six principle areas** for development in order to enhance the sustainability: 1. Balance between the use and protection of natural resources 2. Sustainable communities in a sustainable regional structure 3. Well-being through the lifecycle 4. The economy as a safeguard for sustainable development 5. Finland as a global actor and bearer of responsibility 6. Supporting sustainable choices

Measure Areas	Measure areas for the six principle areas of the document: 1. Limiting greenhouse gas emissions Increasing energy efficiency and the use of renewable energy Adapting to the adverse effects of climate change Ensuring biodiversity Promoting sustainable production patterns Changing consumption habits Improving the state of the Baltic Sea The cultural significance of natural resources 2. A polycentric and networked regional structure Functionally diverse and structurally sound communities and a good living environment Ensuring a vital rural region and its services Ensuring the availability of services The transport system and information society services as a basic precondition for a functional society and interaction 3. Balance between individual and societal responsibility Quality of working life Cohesion between different generations Preventing social exclusion and poverty Promoting healthy lifestyles and functional capacity and preventing health threats The national identity and multicultural Finland Promoting civil activity 4. The economy as a safeguard for sustainable development 5. Finland's operational principles in international co-operation Development of neighbouring regions Influencing EU policy Finland as a global bearer of responsibility 6. Education to promote sustainable development Research and development, know-how and innovations Economic policy instruments
Follow-up / Implementation	
Follow-up measures:	☐ No follow-up activities so far ☒ New or adapted funding programme(s) /budget line; name: - "The Environmental Cluster Research Programme", The program aims at raising the level of environmental know-how, improving the state of the environment and integrating environmental issues more closely into the Finnish system of innovation. - "The Research Programme for Environmental Policy" studies the politics of environmental problems, evaluates regulations and searches for new perspectives. - "Climate Change Adaptation Research Programme" ISTO - " Finland's National Programme to Promote Sustainable Consumption and Production" KULTU presents a long-term vision of an eco-efficient society and proposals for measures of improve well-being while reducing the burden of the environment

	☐ New or adapted regulations/laws; name: ☐ New or adapted informational campaigns/instruments; name: ☐ New or restructured institutions/organisations; name: ☒ Implementation in forest policy: The Strategy is implemented by the ministries and other public administration organizations. A systematic model will be developed to enable assessment of the Strategy's impacts at the national, regional and local level.
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Overall Innovation Orientation

Overall innovation orientation (use word search function).	Please mark the frequency of occurrence of the more generic terms 'innovation' or synonyms ('new products', 'new services', 'new processes', new marketing methods' , 'new business models') in the document	☐ never ☒ sometimes ☐ frequently **71 innovation / innovation related words**
	Please mark the frequency of occurrence of the forest sector 'innovation frontier' – innovation areas identified in Chapter 3 - in the document	☒ never ☐ sometimes ☐ frequently
	Please mark the frequency of occurrence of the terms that are related to innovation, for example entrepreneurship, diversification, competitiveness	☐ never ☒ sometimes ☐ frequently Terms used: competitiveness, entrepreneurship, create
	Further comments on overall innovation orientation of the document: Although innovation or related terms are not mentioned frequently, the document relies on innovative solutions of sustainable development as well as different innovations in several sectors.	
Relevance of innovation: Please mark how much relevance is given to innovation in the document (one answer)	☐ No relevance at all ☐ Marginal issue ☐ One issue among others ☒ Important issue ☐ Central issue Comments:	
Degree of specification: Please mark how general or specific innovation is addressed by the document (one answer) Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry	☐ very general *(innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)* ☒ rather general *(innovation is addressed in overall goals, needs are identified but no specification of measures)* ☐ rather specific *(innovation is addressed in concrete goals, measures are formulated)* ☐ very specific *(quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)* Comments: Please specify further in which context innovation is addressed (Is innovation a goal, underlying rationale, a strategy or means to reach other goals, unrelated, etc.?)	

Understanding of innovation policy Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1	☐ Predominately traditional science and technology policy ☐ Traditional S&T policy with systemic elements ☒ Systemic innovation policy with S&T policy elements ☐ Predominantly systemic innovation policy Comments: **Systemic innovation policy** is the underlying policy: The innovativeness of sustainable development policy encompasses networking co-operation and programs of the administration, scientific and civil organisations, and economic life. An effective innovation system is needed to support the development of dynamic information society. The scope of innovation policy covers all the dimensions of sustainable development at the local, regional and national level. **Traditional S&T policy** approach is emphasized especially in context of energy and water conservation, renewable energy, eco-efficient material solutions, and economic development, as a whole.

Goals and objectives:

- It is seen important to ensure the innovativeness of sustainable development policy by means of networking co-operation and programmes of the administrative, scientific community and civil organizations, and economic life.
- The principles of sustainable development must be integrated into research.
- Skills related to bottlenecks in the innovation system, including risk financing, business competitiveness, commercialisation and internationalisation, will be developed.
- Purposeful investments in the production of social innovations is also needed in addition to technological innovations, so that societal and social development do not diverge from economic and technological development.
- Investments in promising research fields like bio and environment science, the welfare cluster and knowledge intensive services, are enhanced.

Issues, problems and related topics:

In Finland the most important development trends and challenges of sustainable development are associated with climate change, adaptation to rapid global economic changes, and demographic changes.

1. **Climate change** is related to the increased demand for bio-energy and challenges to ensuring biodiversity and its sustainable use: METSO-program and bio-energy value chain.

2. **Adaptation to rapid global economic changes** calls for both technological and social innovations, strong investments in research and development activities, a good education system and social security.

3. **Demographic changes** set demand for increasing the vitality of rural areas. As a starting point, entrepreneurship and a diverse business structure are supported by ensuring the operational preconditions for agriculture and forestry. In particular, the areas of bio-energy production, the protection and management of nature and cultural landscape, and diverse promotion of domestic tourism are of great importance to rural development.

Innovation areas:

Balance between the use and protection of natural resources:

- development and implementation of innovative approaches to regional and land use planning to protect living species and environments
- development of bioenergy production
- development of innovations and types of business and employment in the area of biodiversity
- economic incentives to encourage the development of new means of livelihood, e.g. entrepreneurship in territory based services

- promotion of eco-competitiveness and eco-innovations of enterprises - new technology **Sustainable regional structure:** - centres of innovation activity and expertise **Well-being throughout the lifecycle:** - support for career development and innovativeness **The economy:** - pursue of both technological and social innovations as a source of economical growth - an effective innovation system - sufficient incentives for the growth of human resources and innovation activities **Sustainable choices:** - developing of know-how society - skills related to the bottlenecks of the innovation system will be developed - strong investment in research and product development
General comment:

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	**Diverse researcher training and research and innovation activities will create the preconditions for sustainable development.** **Strong investment in research and development activities to promote innovativeness in following areas:** - Enhance of technological and social innovations - Investments in promising research fields: - bio- and environmental science, the welfare cluster and knowledge-intensive services - Measures that allow industry to renew and produce innovations and business that observe the principles of sustainable development
	Diffusion of innovation	The central means for diffusion of innovations are cross-sectoral co-operation, education and communication, and commercialisation of innovations. - A process in which various bodies, in co-operation and separately, promote the proposals of the Strategy - Efforts to increase citizens' awareness of the importance of biodiversity and methods of protecting it - Commercialisation of both technological and social innovations through top-level know-how in technology and business.

	Strengthening the knowledge base	**Development of operating environments and strong centers of expertise:** - Development of skills related to bottlenecks in the innovation system - Promotion of diverse researcher training and research and innovation - Strengthening of skills that develop, spread, and utilise technological and social innovations - Teaching of learning skills and skills creating new knowledge and innovations
	Strengthening interaction	**Broad participation in preparation and implementation** - Finland's sustainable development policy is based on institutional learning and broad participation with the Prime Minister-led activities from the start 1993. - Various societal actors take part in the definition and implementation of sustainable development. **Sectoral integration in implementation** - The inclusion of sustainable development in the Strategies and programs of various administrative sectors and those of other actors. - Sectoral programs have been important tools in The promotion and implementation of policy measures that observe principles of sustainable development. - As a result of sectoral integration, the principle of Sustainable development is apparent in many policy instruments, such as legislation, taxation, and environmental impact assessment. **Multilevel interaction in implementation** - Strategies and programs for sustainable development have also been drafted and actions evaluated in municipalities, organisations and enterprises.

	Demand creation	**Policy instruments** - Policy instruments (taxation, new market-oriented measures) will be used to promote sustainable production methods, consumer habits and lifestyles. **Economic instruments** - New tools, such as economic instruments, are needed to encourage more sustainable choices and spontaneous activity, e g. : - to reduce the use of non-renewable natural resources and environmental hazards - promote recycling and energy efficiency of products, their consumption and energy use - an energy subsidy granted for investments and studies to support such investments **Educational policy** - The importance of sustainable development will be strengthened in education policy: - information and teaching concerning the formation of values, attitudes and sustainable choices. **Information and participation** - Efforts will be made to increase citizens' awareness of the importance of biodiversity and methods of protecting it. - Citizens' awareness will be increased of: - greenhouse gas emissions and readiness for preventing them - alternatives that allow for environmentally friendly choices. - Consumers will be given sufficient information to support sustainable purchasing choices. - New means of participation and influence will be developed.
	Improving frame conditions	**Development of a know-how society:** - Operating environments and strong centres of expertise. - Industrial policy: - to promote an atmosphere that favours a service society and entrepreneurship - to create a favourable environment for entrepreneurship - to promote the growth of enterprises. **Development of new means of livelihood in rural areas:** - Economic incentives will be introduced to encourage the development of new means of livelihood, such as nature tourism and enterprises that refine products of nature as well as nature and landscape management enterprises.
	Comments	

Priorities	Economic growth, which focuses on moving from increased use of natural resources to know-how and quality, means opportunity to raise eco-efficiency, eco-competitiveness and eco-innovations of enterprises. - Technological and social innovations in terms of sustainable development - Increasing of energy efficiency and the use of renewable energy
Assessment of overall relevance	Innovation support measures in the strategy are of moderate relevance. Although innovations are seen to be related to several areas of sustainable development, it is only one among numerous other support measures mentioned in the document.
Promotion of innovation	The general relevance of innovation for enhancing of sustainable development is acknowledged in the document. However, innovation is not furthered by the document through allocation of resources, as such.
General comment:	

Part B - Cross-sectoral coordination

Policy formulation	
Co-ordination with other processes and documents	Kyoto Protocol (1997) The European Union's Lisbon Strategy (1998) EU Strategy for Sustainable Development (2001) Nordic Strategy for Sustainable Development (2001) UN's World Summit on Sustainable Development (2002) Finland's Programme for the Protection of the Baltic Sea (2002) Strategy for the Sustainable Use of Renewable Natural Resources (2002) Finland's National Strategy for Adaptation to Climate Change (2003-2004) Finland's National Program to Promote Sustainable Consumption and Production (2005) Finland's Energy and Climate Strategy (2005) A National Strategy and Action Plan for the Protection and Sustainable Use of Biodiversity (2006-2016) The National Strategy of Education and Training for Sustainable Development and Implementation Plan (2006-2014) Sami Program for Sustainable Development (2006)
Administrative Co-ordination:	☐ between different sections/departments within the same ministry; specify: ____ ☐ between different ministries, specify: ____ ☒ between ministries and other public organizations / agencies, specify: **9 Ministries:** Finance Environment Social Affairs and Health Trade and Industry Transport and Communications Agriculture and Forestry Education Labour Foreign Affairs + public organizations (see stakeholders) Comments:
Stakeholder involvement	☒ Forestry: The Central Union of Agricultural Producers and Forest Owners MTK ☒ Forest-based industries: The Confederation of Finnish Industries EK, The Federation of Finnish Enterprises ☒ Agriculture: The Central Union of Agricultural Producers and Forest Owners MTK ☐ Tourism: name most important organisations: ____ ☐ Energy: name most important organisations: ____ ☒ Environment: The Finnish Association for Nature Conservation ☒ Other sectors: **Trade Unions**: The Central Organization of Finnish Trade Unions SAK, The Confederation of Unions for Academic Professionals in Finland AKAVA **Commerce:** The Federation of Finnish Commerce

	Local and Regional representatives: The Association of Finnish Local and Regional Authorities, The Regional Council of Lapland **Youth:** Finnish Youth Co-operation – Allianssi **Development Cooperation**: The Service Centre for Development Co-operation (KEPA) Comments:
Coordination mechanisms:	☒ Formal (central) coordination body: **Sustainable Development Strategy Group** ☐ Formal coordination process ☒ Inter-sectoral working groups ☒ Inter-sectoral advisory body ☒ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe ____) ☐ Others: ____
Policy Implementation	
Responsible actors and their roles:	- **Prime Minister of Finland** - leads the activities of the Finnish National Commission of Sustainable Development - **The Finnish National Commission on Sustainable Development** - launched the process of aiming at the new national strategy of sustainable development - supported the work of various actors - approved the Strategy - **Sustainable Development Strategy Group** - prepared the Strategy **- The Finnish National Indicator Network for sustainable development** - produced follow-up indicators - **Finnish Government** - responsible for the guidelines and implementation of sustainable development
Level of delegation	☐ Decentralized, e.g. ☐ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☐ Local, e.g. by municipalities ☐ Regional, e.g. by regional public actors ☒ Others: Top-down process, where the principles of the Strategy are delegated to be taken into account within the framework of sustainable development.
General comment	

9. Renewable Energy Policy

Raija Volk & Ritva Toivonen

9.1. Energy policy, renewable and bio energy policy and their inter-linkages to forest policy and innovation policy

The energy policy in Finland (as outlined in the National Climate and Energy Strategy report from 2001/2003, to be updated still in late 2007) has three major aims: 1) to combat climate change and fulfil the requirements agreed in the Kyoto protocol, and 2) to preserve and improve the diversity of the energy systems, especially guarantee the security of the energy supply and 3) secure the availability of energy in the way that industry remains competitive. A special aim is to enhance energy saving and efficiency of energy use, and to enhance the utilization of renewable energy sources. The updating procedure will take into accordance the latest climate-related targets by the EU, e.g. the common EU-wide targets set for the utilization of bio fuels in transportation (5.75 % of all commercial transport fuels by 2010 and 10% by 2020, and the overall aim of lowering the greenhouse gas emissions by 20 %, and increasing the share of renewable sources to 20 % of the total energy consumption by 2020). There is also a specific aim for Finland regarding the proportion of renewable electricity.

According to the Finnish energy and climate strategy, the share of the indigenous energy sources will increase and the share of renewable energy sources will increase markedly. On the whole the share of bio energy is aimed to increase 25 % by 2015 and 40 % by 2025. The share of the bio energy and other renewable energy sources is already larger in Finland than in the European Union average due to the large utilization of wood (industrial residues and black liqueur) in energy production. Currently, 20 % of the total energy consumption is based on wood, and about 5 % is based on hydro power. Another 5 % is based on domestic peat resources. Thus, 30 % of the energy consumption is domestic and 70 % is based on imported fuels and electricity. The aim of 25 % increase in the share of renewable energy is in practice 6-7 % increase in the total proportion of renewable sources in Finland's energy consumption, i.e., in 2015 the aim is to have 31 % of the total energy consumption based on renewable sources, mainly bio-energy. The aim is ambitious since the total energy consumption is likely to grow during the next 10-20 years. In addition, a new nuclear power plant is estimated to start operation on 2011, which increases the supply of non-renewable energy.

However, the aim is possible to be reached for example through much intensified utilization of forest residues in energy production. It has been estimated that if about 7-8 million cubic meters more of forest residues and small diameter wood is collected from the forests annually (extra to the current level of 3.5 million cubic meters) and additionally about 20-25 % of the agricultural lands are taken to energy production, then it would be possible to reach the target outlined in the Finnish energy and climate strategy (see e.g. Toivonen et al. 2007 in PTT Outlook 1/2007). However, it is likely that these changes will not realize if driven only by

market forces but special policy interventions are needed (KTM annual report 2006). Based on existing peat resources, it would be possible to strongly increase the use of peat in energy production in Finland, but at the moment peat is not included in the list of renewable energy sources. In the fall 2007, Finland is also preparing itself for possibly tougher emission reduction obligation than the EU average, and this means that the share of bio energy may be increased even more than outlined above.

Climate and energy policy, forest policy and rural development

In Finland, most of the renewable energy is based on bio energy (20 % out of the total of 25 % of the total energy consumption). Bio energy is practically based only on wood biomass. The major source of wood based bio energy is pulp and paper industry, the next largest source are the by-products of sawmills and other woodworking industry and only a minor part is based on fuel wood that forest owners collect mainly from their own forests. In total, one may estimate that about 35 million cubic meters are used in energy production in Finland every year, and of this quantity about 4-6 million cubic meters are fuel wood harvested from the forests and about 30 million cubic meters are industrial by-products. The forest policy in Finland supports strongly intensified collection of forest residues and small-diameter wood from forests, which is in accordance with the aims of climate and energy policy and is beneficial for rural areas through offering job possibilities. In addition, when increased energy wood demand is channelled to forest residues and small-diameter wood, then the competition of industrial roundwood is not necessarily intensified harming the competitiveness of forest industry. It seems clear that wood-based biomass will remain the main source of bio energy also in the future, and therefore the policy incentives enhancing the growth of wood-based biomass supply and processing as energy are directed especially to the forest sector.

Specific subsidies have been developed to support energy wood supply from young stands (small-diameter wood) because without subsidies the harvesting costs would exceed the revenues available from the wood in energy production. In addition, the state has supported the foundation of specific energy advisors in regional forest centres for a five-year initial period. However, the impact of this type of subsidies has been relatively modest in enhancing wood-based biomass supply. So far, the policies have concentrated in supporting market growth and demand through 1) supporting research and knowledge building (see innovation policy chapter) and 2) through supporting investments in building energy production capacity that may utilize renewable energy sources. There has been available various subsidies for building new combustion and CPH plants utilizing wood chips and other wood-based biomass, but also for those investing in hydro and wind power.

The enhancement measures and incentives for biomass harvesting and renewable energy processing capacity building activities have been channelled through regional development programmes managed by the regional labour and business centres and provincial governance bodies (Employment and Economic

Development Centres and the Councils of Regions). Thus each region has tailored the kind of programmes that they have considered supporting best the rural and regional economies and employment.

Connections to the Innovation policy

Innovation policy is the major aim in Finland that is trusted to lead to the targeted changes in the Climate and Energy strategy. In other words, research and technology development have been areas where public money has been allocated to accelerate the growth of renewable energy sector.

Tekes (the Finnish Funding Agency for Technology and Innovation) is the main governmental organisation promoting and financing research, technological development and innovation activities in energy sector. The development funding is organized through research programmes.

Several TEKES research programmes have been targeted during the last over ten years to developing more efficient technology to wood-based biomass harvesting, storage and transportation, as well as to developing processing (including the production of liquid and solid bio-fuels) and combustion technologies. For example, The BIOENERGY research programme 1993-1998 resulted in new harvest methods and machinery already in commercial usage. Boilers were developed such that can better use bio fuels in district heating. The main aim of the BIOENERGY programme, however, was to develop new technology solutions for bio fuels. A new oil product, pyrolysis oil, was developed, which expands the use of bio fuels in large properties. The overall funding totalled € 40 million. There have been also several programmes that have targeted especially to develop technology to utilize wood in energy production. Previously the main targets in the research and development seem to have been in developing technologies suitable in large-scale centralized processing enjoying the scale benefits. However, currently there is also on-going a new programme DENSY (2003-2007), that targets in developing also technologies suitable in distributed/uncentralized production systems. The total budget is estimated to exceed € 50 million. This program also covers issues that deal with business concepts and integrating ICT with energy systems, and not merely energy technology. However, the main target group for this development programme is industry providing products and systems to global markets and not regional, domestic or small size businesses or raw-material production and related businesses. Another programme, CLIMBUS – Mitigation of the Climate Change – is on going between the years 2004-2008. This programme provides funds for technology research that especially targets to develop such technologies that help to reduce greenhouse gas emissions: The “ ClimBus” programme is an investment to develop technology and business concepts and products and services that are internationally top-class in cost-effectiveness to reduce greenhouse gas emissions. The total budget is estimated to exceed € 70 million.

The Academy of Finland is also staring a new programme that concentrates in producing high-quality research dealing with climate change. The programme will start in 2008.

9.2. TABLES – Renewable Energy Policy

Ritva Toivonen & Raija Volk

As the analysed document the Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol was chosen.

Part A - General document information

Name:	**Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol**
Adoption: Please mark by whom and at which level the document is adopted	☐ Parliament ☒ Government ☐ Ministry:_____ ☐ Others:_____ ☐ No formal approval Level: ☒ National ☐ Regional ☐ Local Adoption date: November 2005
Validity period:	2008-2012
Revision:	Is (regular) revision/ update of the document planned? Has it already taken place, when? The documents are revised or updated but no systematic period for this is set. A major new policy programme is to be drafted in the beginning of the programme period 2008, That will outline Finland's climate and energy strategy (and policy) for tens of years ahead. A new ministerial working group is to be founded for developing the new policy. The fundamental policy document of Finland's current climate and energy policy was the National Climate Strategy 2001 so that now the second revision will be started.
Monitoring / Evaluation:	Is the implementation of the document formally monitored? Has an evaluation taken place? Is an evaluation foreseen? The documents are policy papers and not programmes for specific implementation. Evaluation is done but in the connection of political processes or by updating the strategy.
Related documents:	Please list further specifications or amendments of the document and documents that are closely related, i.e. have a direct reference to the document. This might include working programmes, annexes, etc. These documents should be analysed together with the main document. The government programme 2007-2010: The government does not lift energy issued specifically in the newly approved programme for years 2007-2010 but, however, states that climate change is among the most significant challenges of today. This is opposed against, among other things, by increasing very considerably the use of renewable energy sources, which presumes support for renewable energy in various parts of the value chain. Another aim is to increase energy self-sufficiency, which also assumes increasing production of renewable energy. The largest potential is in forest-based bio energy and this presumes increasing efficiency in wood production. CHP production is particularly preferred. Bio energy utilization should be increased both in households and in industrial scale units.

Geographical scope:	☒ National ☐ Regional; name: ☐ Local, name:
Budget:	No specific budget.
General description of contents as written in document	
Objective of the document	Amount of budget in € (indicate whether per year or for whole document period); indicate the source for the budget, i.e. state, EU, regions, co-financed, etc. The climate and energy strategy from 2005 outlines the measures for how Finland will realize the goals set up in the Kyoto Protocol during 2008-2012.
Priorities	Name the thematic priority areas of the document. The strategy underlines investments in renewable energy and commitments to attend the EU emission trade, and utilization of the methods allowed in the protocol.
Structure	Shortly sketch the basic structure of the document, i.e. different thematic parts, basic elements (e.g. action areas, indicators, etc.) Premises of the strategy: Outlook of greenhouse gas emission Implementation of the emission commitment / outlines concerning the allocation plan of emission allowances Energy policy outlines and objectives (securing energy procurements, developing the market, energy savings, efficiency of production, promoting the use of renewable energy, renewable energy sources and bio fuels) The objectives related to the use of energy Use of energy and climate policy steering tools (technology, taxes, subsidies, feed tariffs, green certificates, training and communication, EU emissions trading)
Measure Areas	Name measure areas as described by the documents and general types of measures the document introduces. Energy related issues are brought up as associated with taxation (increase energy efficiency through fuel-specific taxation, taking off taxation from liquid bio fuels produced and used within farms (not commercially traded), taxation will be increased for household electricity and coal usage. Spatially decentralized bio energy production will be supported as part of rural development, a network of bio energy advisors will be created to countryside. Investment subsidies and feed tariffs will be analyzed as means to support the development of large biogas plants. In the connection of transportation sector, the aim is to enhance usage of bio fuels in public transport.
Follow-up / Implementation	
Follow-up measures:	☐ No follow-up activities so far ☐ New or adapted funding programme(s) /budget line; name: ☐ New or adapted regulations/laws; name: ☐ New or adapted informational campaigns/instruments; name: ☐ New or restructured institutions/organisations; name: ☐ Implementation in forest policy: The programme is followed up on a continuous basis also in association different policy sectors like tax policy, energy policy, innovation policy, forest policy.
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Overall Innovation Orientation

<table>
<tr><td rowspan="4">Overall innovation orientation
(use word search function).</td><td>Please mark the frequency of occurrence of the <u>more generic terms</u> ‘innovation’ or synonyms (‘new products’, ‘new services’, ‘new processes’, new marketing methods’ , ‘new business models’) in the document</td><td>☐ never
☒ sometimes
☐ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the forest sector ‘innovation frontier’ – innovation areas identified in Chapter 3 - in the document</td><td>☒ never
☐ sometimes
☐ frequently</td></tr>
<tr><td>Please mark the frequency of occurrence of the <u>terms</u> that are related to innovation, for example entrepreneurship, diversification, competitiveness</td><td>☐ never
☒ sometimes
☐ frequently
Terms used: Energy efficient production , innovative models of operation, competitiveness</td></tr>
<tr><td colspan="2">Further comments on overall innovation orientation of the document:</td></tr>
<tr><td>Relevance of innovation:
Please mark how much relevance is given to innovation in the document (one answer)</td><td colspan="2">☐ No relevance at all
☐ Marginal issue
☒ One issue among others
☐ Important issue
☐ Central issue
Comments:
Policy papers renewable energy are strategic papers and therefore detailed policy measures are lacking.</td></tr>
<tr><td>Degree of specification:
Please mark how general or specific innovation is addressed by the document (one answer)
Please use comments section to describe if the degree of specification varies for different parts of the document, esp. when concerning forestry</td><td colspan="2">☐ very general (innovation is named in general parts, e.g. preamble, but no related goals, measures, identified needs or similar are addressed by the document)
☒ rather general (innovation is addressed in overall goals, needs are identified but no specification of measures)
☐ rather specific (innovation is addressed in concrete goals, measures are formulated)
☐ very specific (quantified goals related to innovation are formulated, concrete measures introduced, a fixed budget and timetable exist)
Comments:
Innovation is underlying rationale</td></tr>
<tr><td>Understanding of innovation policy
Please assess what overall understanding of innovation policy is reflected in the document. See chapter 2.2.1</td><td colspan="2">☒ Predominately traditional science and technology policy
☐ Traditional S&T policy with systemic elements
☐ Systemic innovation policy with S&T policy elements
☐ Predominantly systemic innovation policy
Comments:
Policy measures are concentrated on regulation, tax policy, and financial support to the development of new more effective technology in production and use of renewable energy. Innovation are seen as end of development process of new production technologies.</td></tr>
<tr><td colspan="3">Goals and objectives: Please specify further what objectives and goals (quantitative and qualitative) are formulated in relation to innovation?
More effective technology of energy production.</td></tr>
<tr><td colspan="3">Issues, problems and related topics: Please describe shortly what main issues and problems are formulated in relation to innovation? Does the programme address other issues that are related to innovation, e.g. competitiveness of the sector, diversification etc.? Please describe shortly</td></tr>
</table>

Measures to improve the competitiveness of renewable energy sources are stressed at general level. Creation of intellectual capacity through enhancing renewable energy and reducing energy production related emissions calls for developing new technologies, biomass production and processing methods and the overall value chain. Process innovations are underlined in the text, a market related innovative mechanism (emission trade) sometimes, the orientation underlined technology and particularly process innovations in a rather traditional way.
Innovation areas: Please name the most important innovation areas named by the document and compare with the results gathered in table 3.1. Product and process innovations (Energy technology development).
General comment: List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Innovation Support Measures

Innovation support measures *Consult classification in chapter 2.2.2*	**Research and Development**	Need for research is stated and investment subsidies are considered necessary, but no specific support measures for enterprises are listed.
	Diffusion of innovation	Investment grants to developing of energy efficient technology.
	Strengthening the knowledge base	Founding bio-energy advisor network.
	Strengthening interaction	Energy savings agreements, training and communication
	Demand creation	Demand creation and change towards renewable energy sources and bio energy through tax policy, feed tariffs and green certificates. Spatially decentralized bio energy production will be supported as part of rural development.
	Improving frame conditions	Not mentioned
	Comments	
Priorities		Developing of new more efficient and energy saving technology. The outline of the energy and climate policy is a rather short strategic paper stressing the targets of the policy.
Assessment of overall relevance		Innovation support is an underlying assumption (for example energy efficient and environmentally friendly technologies are stressed) and but other policy areas are stressed more.

Promotion of innovation	Innovations are not discussed in deeply. Integration of the energy decisions and energy sector to other sectors and related policy is a fundamental principle.
General comment:	List research needs you identified, they might be taken up in phase II of COST E51 Name further reference sources used

Part B - Cross-sectoral coordination mechanisms

Policy formulation	
Co-ordination with other processes and documents	Please list other processes or documents with which the considered document is formally co-ordinated Environmental policy Construction policy Tax policy Traffic and transportation policy EU's climate policy
Administrative Co-ordination:	☐ between different sections/departments within the same ministry; specify: ☒ between different ministries, specify: Ministry of trade and industry, Ministry of agriculture and forestry, Ministry of environment ☐ between ministries and other public organizations / agencies, specify: Comments: Shortly explain the role of the main administrative actors Ministry of trade and industry is responsible both for energy policy and innovation policy, but policies concerning forest based materials are planned and implemented partly in ministry of agriculture and forestry
Stakeholder involvement	☒ Forestry: name most important organisations: Central Union of Agricultural Producers and Forest Owners (MTK) ☒ Forest-based industries: name most important organisations: Confederation of the Finnish Industries EK ☒ Agriculture: name most important organisations: The Central Union of Agricultural Producers and Forest Owners (MTK) ☐ Tourism: name most important organisations: ☐ Energy: name most important organisations: ☒ Environment: name most important organisations: Environmental Institute, voluntary environmental organizations ☐ Other sector: : name most important organisations: ☐ Other sector: : name most important organisations: Comments: Shortly describe the type of stakeholder involvement Different stakeholders are heard in the planning phase of energy policy. The Plan for Renewable Energy Policy Programme could also be commented freely in internet by all citizens.
Coordination mechanisms:	☒ Formal (central) coordination body; name: Ministry of trade and industry ☐ Formal coordination process ☐ Inter-sectoral working groups ☐ Inter-sectoral advisory body ☐ Formal mandatory consultation process ☐ Formal voluntary consultation process ☐ Informal consultations (please describe)

	☐ Others:
Policy Implementation	
Responsible actors and their roles:	Shortly explain the role of the main actors in the implementation of the document The responsible organisation is Ministry of trade and industry and in individual measures the relevant ministries, in addition regional development centres , and the key expert and funding organisations which are Tekes (the Finnish Funding Agency for Technology and Innovation), the Academy of Finland and Sitra - the Finnish Innovation Fund.
Level of delegation	☐ Decentral, e.g. ☒ Central, e.g. ministry, public agency ☐ Outsourced to private actors ☐ Local, e.g. by municipalities ☒ Regional, e.g. by regional public actors (partly) ☐ Others: _____
General comment	**List research needs you identified, they might be taken up in phase II of COST E51** **Name further reference sources used**

10. Conclusions and Research Needs

10.1. Structures & balance between NIS &SIS &RIS

Innovation policy in Finland has put attention to create interplay between the policy stakeholders connected to National, Sectoral and Regional Innovation Systems. The latter has become possible as a part of the gradual development of NIS, SIS and RIS respectively.

NIS and strengthening knowledge base: Creation of National Science Council 1963 and specific public institutions providing state funded risk capital SITRA (National Investment Fund) 1967 and KERA (Development Region Investment Fund) 1971identifies as start of systematic NIS creation. New Funding arrangements provided systematic risk financing also for the creation of technical inventions and product as well as process development. Product and process development financing was based on linear innovation process assumption. Consequently intra firm process financing was a typical subsidy arrangement. SITRA proceeded sectoral surveys concerning competitiveness of export industries during the 1970's. The latter surveys constitute the early basis also for the establishment of Sectoral Innovation System[13].

SIS in forest related value chains: Government of Finland proceeded cluster identification approach further to develop innovation policy in the mid 1990's. This transfer can be considered an origin for the promotion of Sectoral Innovation System. National Technology Agency (TEKES), established in 1983, started systematic evaluations concerning the technology and innovation status among the key clusters and the early identification activities concerning forest based value chains can be traced into the cluster relevant technology programs by TEKES (Chapters 3 and 4). The creation of TEKEL (Finnish Science Park Association - a nationwide cooperation network of science parks and technology centres) in 1988 proceeded he coordination among the joint interest activities among science parks, and mediation towards public institutions. Systematic technology evaluations ordered by TEKES from scientific institutions accentuated product and process innovations and covered both policy oriented and firm specific actions (eg. wood product technologies). Technology program related to wood frame construction by TEKES followed these programs in the mid 1990's. TEKES has gradually enlarged their approaches concerning innovation development and supported Centre of Expertise Program activities (Chapter 7).

RIS and inter sectoral innovation policy: Innovation policy in Finland has involved sectoral and regional dimensions from 1994 on. Reseach activities have been implemented, parallel with public support, also through regional development and rural policy programs during EU membership from 1995 on. The latter has

[13] Schienstock, G & Hämäläinen, T. 2001. Transformation of the Finnish innovation system: A network approach. SITRA reports series no 7. . Helsinki

become feasible through bottom up agenda and policy integration what concerns the creation of regional innovation capabilities (Chapter 7). Innovation policy implementation a) promotes existing regional specific strengths for new business networks and entrepreneurship and b) supports the creation of new knowledge bases through schooling, R&D and technology resource creation in regions in Regional Innovation System.

Innovation capability creation: The current innovation policy in Finland involve a) the strengthening of capabilities towards new business design and organisational solutions and b) the traditional aspects of innovation policy focusing on new product and process technologies. Finland has also created vital policy activities related to rural entrepreneurship and related services. Centres of Expertise programs[14] supporting the creation of innovative milieus, and enterprise network promotion for regional cluster formation) CoE was applied for wood product SMEs and bio energy entrepreneurship respectively. Direct public incentives (firm specific) towards the innovation activities in forest based enterprises and entrepreneurship (timber as well as non timber) have been implemented mainly through regional technology centres (TE centres). Rural and regional development policy programs have allocated supportive resources for regional mental and physical capacity creation. These activities have indirectly provided support for the implementation of FNFP 2010 but direct inter sectoral of value chain specific activities have not been clearly visible. Forest policy agenda in policy preparation has had top down features with strong internal target formulation what concerns innovations and new entrepreneurship in forest related activities. Inter sectoral participation has gradually been involved into policy agenda from mid 1990's. The preparation of RFPs and FNFP has permanently had the challenge adapt with other policies relevant for regional development. Majority of regional development program activities apply EU subsidiary principles. Strategy priorities and structural program implementation are prepared by Regional Councils. Forest policy has national and regional targets and has permanent challenges to apply bottom up initial approach.

10.2. Innovation dimension in policy areas

a) Forest policy: Preparation and implementation processes for FNFP 2010 from the late 1990's on have provided sector specific solutions concerning promotion of innovation activities and creation of innovation infrastructures. FNFP that has been the major tool for national forest program and no major changes has been visible when preparing the program revision FNFP 2015. Issues related to economic sustainability have been well represented in RFPs 2010 and FNFP 2010 but parallel policy issues what concerns ecological and social dimensions are have not been well visible. RFPs and FNFP 2010 support rural policy mainly through targets of increased incomes from commercial timber trade. Wood harvest and forest transportation are fully mechanized and provide limited

[14] Second Centres of Expertise program 1999-2006 had expensive targets towards parelle development of NIS, SIS and RIS respectively see. Lähteenmäki-Smith, K. et al. 2003. Huippuosaamisesta alueille kilpailukyky? Osaamiskeskusten väliarviointi 1999–2002

opportunities for new rural employment. Growing number of NIPFOs use their wood trade incomes outside the areas of their forests and this development is assumed to sped up in the future. Regional Forestry Centres, implementing forest policy on regional level, act separately outside the TE Centres what concerns new entrepreneurship. This separation can be considered impeding from the viewpoint of innovations related to value chain approach. Innovation promotion initial in the form of forest sector innovation forum in Finland, was among the major outcomes from the preparation of FNFP 2010**.** Future Forum on Forest of Finland (FFFF) arena that was realized, aimed to evaluate relationships between foresight scenarios and innovations.- FFFF has emphasized multidisciplinary and multi - sectoral approach as a fundamental principle in searching innovative ideas for the evolving forest-based livelihoods. The policy process in 2006 towards revised FNFP 2015 was started by implementing a futures work on forest sector where FFFF activities constituted an integrated part. Forest sector connections to the new centre of expertise program (see Ch 6 Regional Development Policy) are diversified and mainly indirectly related to forestry. The connections to expertise programs Forest Industry Future, Bio Energy Production and Processes and Living Cluster respectively concern mainly the downflow activities in the wood based vertical value chains.

b) Forest based industries policy: Finland has been active what concerns national Forest-based Sector Technology Platform parallel with EU based Forest-based Sector Technology Platform. Finnish forest sector stakeholders search intensively for new products and business concepts and a new institution, Forest Cluster Ltd a joint enterprise of private companies and public sector organizations, has been established to support business development in new products and processes.

There is a recent international network structure Wood Wisdom Net (Networking and Integration of National Programmes in the Area of Wood Material Science) connecting 18 national research agencies that support the research on wood material sciences. The work is co-ordinated by Tekes. Finland has implemented through integrated business, industry and employment policy activities what concerns medium sized enterprises and rural policy when rural micro enterprises are concerned. There are three separate areas related to value chains: 1) wood products, 2) wood based energy and c) non wood products & tourism.

c) Innovation Policy: The current innovation system in Finland is basically twenty years old. Now the more wide innovation concept thinking is adopted emphasizing issues like services, business concepts, renewal of working life (frameworks / conditions) [työelämän uudistaminen] and developing public services. In the new government programme (2007) there are stated several renewals for the system, like reorganisation of the key ministeries and establishment of the “Innovation University” as an example. The Finnish innovation policy thinking is slightly changing from technology orientation to the direction of collaborative innovation thinking.

The Finnish innovation policy structure has horizontal approach overlapping with sectoral and other horizontal policies. There is not one extensive national

Innovation policy document (yet) instead the innovation policy is included into several different policy documents and programmes. Nevertheless, the basis of the innovation policy has been outlined in the reports produced by The Science and Technology Policy Council of Finland. The role of these national level documents is to outline the key areas and actions and development lines needed to enhance the innovation policy in national level. It has been also indications that the Government will start it's work by preparing the Finnish Innovation Strategy as one document as well.

The development plan for 2007-2011 produced by the Science and Technology Policy council highlights the co-ordination of the resources, centralising the activities (structural) in order to create the critical mass of expertise and focusing on the top quality expertise based on the demand driven approach. In addition the development plan states that the resources should be focused better on the strategically selected sectors. One of the most significant new forms of co-operation between the public and private sector in this is the Strategic Centres of Excellence scheme. The Council has also identified five subject areas in which concrete measures should be taken. One of these areas focus directly on Forest sector and at least two other have links to it. The areas are: 1) energy and the environment (e.g., environmentally friendly energy production), 2) metal products and mechanical engineering (e.g., moving machinery and vehicles as well as manufacturing and automation technology), 3) the forest cluster (e.g., comprehensive exploitation of materials such as wood and its derivatives as well as intelligent products), 4) health and well-being (e.g., well-being of the elderly and development of individualised medical care and diagnostics), and 5) the information and communication industry and services (e.g., services and products of the future information society). In parallel to the centres, it is important to reinforce such important and promising fields as biotechnology, new materials, nanotechnology, software engineering, and knowledge-intensive services. (Science, Technology and Innovation 2006)

The Finnish business sector appears to be very research-intensive in international comparison. Enterprises' proportion of total R&D expenditure is 70 per cent. However, a special challenge for Finland is also the fact that R&D expenditure inputs differ between industries and even clusters. Forest industry is among the low R&D input industry sectors. The accessibility, efficiency, and impact of public innovation services (funding, education, guidance, and internationalisation) must be improved considerably. In innovation policy, main emphasize is in strengthening the knowledge base and interaction and improving the framework conditions, instead of traditional research and development and innovation diffusion. Demand creation as an innovation support measure is almost unidentified.

d) Rural Development Policy: Finnish rural policy is essentially intersectoral, and its aim is to strengthen the rural point of view in all public systems, decisions and arrangements that impact rural areas and rural residents. Current rural development targets are taken into consideration in regional strategies and imply actions connected to many sector policies. Policy towards rural development has

cross cutting features with relevant sector policies (forestry, wood product industries…). This general 'rural proofing' role of the policy can be called the Broad Rural Policy. With the Narrow Rural Policy we refer in Finland to those policy measures and programmes which are specifically targeted to rural areas (such as the EU Rural Development Programme). The overall significance of the Broad Policy is greater than that of the Narrow Policy, but the Narrow Policy is easier to recognize as rural development policy. Narrow Rural Policy is a part of Regional Development Policy, whereas the Broad Rural Policy comprises of elements which go beyond the reign of Regional Development Policy. Rural policy is a part of development policy, but regional development policy is only a part of the entity of rural policy. Rural policy has also strong relations to sector policies (forestry and forest based industries policies respectively) (interconnections see discussion in OECD Policy review 2007). Innovation does not have an explicit dominant role in current national rural policy programmes, but it is implicitly included in many fields of rural policy mainly through EAKR and ESR financed programs. The role of the forest dimension is surprisingly modest in the Finnish Rural Policy, considering the large forest cover of rural areas. Mainstream forest policy, in particular chemical wood processing dominated by big multinational companies and their raw material sourcing from Finnish forests has been left to general economic policy and forest sector policy. However, there have been fairly large programmes and projects on mechanical wood processing financed and organized by Finnish Rural Development Policy. It can also be concluded that these activities have had a clear innovative character, mainly to do with organizational innovations.

The Rural Policy Committee oversees rural policy in Finland. This committee assists the government with the planning and implementation of the Rural Policy Programme. The programme directs what is called "Broad Rural Policy" by providing specific policy recommendations to the different entities. The Committee also coordinates and serves as a network for the different actors involved in the implementation of specific programmes oriented for rural development, or "Narrow Rural Policy". Regional and local actors play an important role in this regard, particularly Regional Councils and TE Centres at regional level, Local Action Groups (LAGs) at the subregional level and village associations, and Municipalities at the local level. Since joining the EU in 1995 Finland has wisely adopted, complemented and combined EU programmes with national funding to increase its efficacy and extend their coverage. Innovation does not have an independent strong role in Finnish rural policy programmes, but the innovation aspect is inherent in the way how different activities in rural areas are approached. "The "triple helix" interaction model of government, industry and universities, on which the Finnish innovation system is based," remains technology oriented and less attentive to management methods in small firms or traditional sectors having a strong role in most regional economies. Forest sector does not have a decisive role in Finnish rural policy: the main aspect that has been elaborated is mechanical wood processing. Policy activities supporting are Forest sector connections to the new centre of expertise program (see Ch 6 Regional Development Policy) are diversified. There are connections to expertise

programs Forest Industry Future, Bio Energy Production and Processes and Living Cluster respectively.

e) Regional Development Policy: Policy agenda applies regional autonomy what concerns strategy formation, policy targets and tools of implementation. Creation of new supportive policy tools providing the growth of innovative milieus, regional clusters, industrial districts and learning districts are in the current policy agenda. Targets supporting National Innovation System development are implemented through TEKES technology programs whereas those supporting Regional Innovation System development, creation of business milieus and knowledge potentials are implemented through Regional Development Programs. Finnish Regional Development Policy has city areas as the major objective of the activities[15]. Recent Regional Development program aims to a) strengthen knowledge potential, b) services of welfare, c) development of business and d) development of living conditions and infrastructures[16]. However, the Centre of Expertise program, national specialty in Finnish innovation policy, has had significant impacts on research and development, which in turn has affected the operating environment and the resources available to businesses. The 'added value' of the programs implemented from 1994 on thus appears to be particularly positive in view of increases in the levels of knowledge and technology. Moreover, readiness to utilize national research and development resources, as well as EU Structural Fund resources has improved but EU's R&D Framework Programme still remains under utilized. The programme is seen as having an impact on the profitability of businesses, but this 'added value' is clearly considered modest in comparison with other aspects of the examination. From the business point of view the Centres of Expertise had a significant effect on research and development, which in turn affected the operating environment and the resources available to businesses. CoE programs appear to be particularly positive in view of increases in the levels of knowledge and technology, utilization of national research and development resources, as well as EU Structural Fund resources. CoE contribution to the region concerned varies between districts but frequently increases a region's profile and attractiveness to business.

e) Sustainable Development Policy: The current high activities in Forest Based Sector and Renewable Energy policies can be considered inter sectoral activities towards the implementation Sustainable Development Policy. Regional Development Policy and Rural Development Policy impacts have been important to the creation of the value chains of non wood forest products and services. Innovation Policy targets, covering currently also low tech industries, involve also marketing and organisational restructuring in addition to technical innovations into products and production processes.

[15] Ritsilä, J. & Laakso, S. & Haukka, J. & Kostiainen, E. & Storhammar, E. & Kuisma, H. 2006. Aluekeskusohjelman tulokset ja vaikutukset - arviointi 2001-2006

[16] Ritsilä ibid

The National Strategy for Sustainable Development sets strategic targets for sustainable development policy in Finland. According to it, the responsibility for the guidelines and implementation of sustainable development belongs to Finnish Government. Thus, the promotion of sustainable development in Finland is, basically, a top-down process, where the principles of the strategy are delegated to be taken into account within the framework of sustainable development. The strategy does not discuss the forest sector, as such, but addresses several issues related to it: renewable natural resources and bio energy, nature protection, new means of livelihood in rural areas, promotion of eco-competitiveness and eco-innovations of enterprises.

The strategy, itself, is cross-sectoral in nature as various societal actors take part in the definition and implementation of sustainable development. However, the challenges lie in evoking cooperation between different sectors in implementation of the strategy. This cooperation includes integration of the social, economic, and ecological dimensions of sustainable development, on one hand. On the other hand, as environmental knowledge is growing fast in Finland, know-how between environmental and innovation policies need to be combined efficiently.

f) Renewable Energy Policy: Finland has put much public interest and support towards new innovations and development of business infrastructures supporting innovative activities.

10.3. Inter sectoral planning/program formulation

Rural and regional development programs in policy formation. Rural and regional development policies have overlapping fields of policy interests what concerns sectoral issues but regionally separate fields of activities. The main focus of the policies differ: regional policy consider social communities with municipalities in counties as units whereas rural policy concern single firms and sector districts (industrial or knowledge) when entrepreneurship and business networks are concerned. Subsidiary principle characterize rural development policy arena and bottom-up agenda has gradually been involved. The financing tools of European Union Structural Development Funds provide financing especially for regional development policy.

Finland belongs clearly to the centrally led political systems in EU-context. There are historical roots tracing back to Swedish colony era. In addition to the centralised public administration, Finland also continues the Nordic tradition of strong autonomous municipalities. According to the Finnish Constitution, municipal administration is based on self-government by the local citizens. Municipalities have thus the primary authority in their area, the State has authority only in matters that have been described in law. Finland is thus a unitary state where democratic institutions function at two levels: national and local. The role of the regional level in the Finnish public sector has been primarily intermediate, in-between these two main levels.

After joining the EU, national central government has been, to some extent, decentralised due to the implementation requirements of the EU programmes. Central administration has delegated some power and responsibility to its regional line organisations – mainly the task of delivering EU development / Structural Funds programme money. In addition, 20 regions (NUTS3 level) led by regional councils where established to represent the will of the people living in regions. The regional councils are by law (Regional Development Act 2002) the regional development authorities in their area, and their mandate is derived indirectly from the representative bodies at those municipalities, which comprise the region.

Regional Councils are responsible for designing an overall development strategy (including innovation policy), the so-called Regional Development Programme, which should combine and direct all other development programmes in the region. The concrete impact of the Development Programme varies from Region to Region.

Finnish political system and public administration is currently in a transformation phase, where the regional level has been strengthened, but consists of two main actors who derive their authority from different sources, and the rules for co-decision-making are still under progress. Generally speaking, the regional line organisations of different ministries have the resources, whereas the regional councils who represent the regions have the authority to decide upon the allocation of these resources. Thus, for the first as to the relationship of the central state and the regions, it is a matter of the state delegating its tasks, not a matter of the regions gaining independent autonomy. For the second, as long as the political mandate of the regions is not direct but based on the elections taking place at the municipal level, the regions are not likely to have a powerful position in the Finnish political system.

10.4. Research needs and research questions

- Forest sector (cluster) representation in innovation policy measures? Are there differences between wood and non-wood value changes?
- Do the policies/policy structures impede the development of forest based sector i.e what kind of development has happened despite of policies?
- What are the innovation services, how are they organised in different countries, and what are the factors affecting to their efficiency?
- What is collaboration between innovation actors and how can it be enhanced?
- Use of innovation strategies at different levels (firm, local, regional, national)
- How and from where the forest related growing and internationalizing SMEs do search for and find the new knowledge for their innovations?
- Growth in delegation impacts to innovation systems and distribution in resources
- Potential contributions from forest sector for rural development policy.

- Inter country comparisons among the participating countries over important issues concerning forest sector contribution potentials to rural development?
- Dimensions and processes facilitated by public policy concerning forest sector contribution to rural development?