



Forestry and Forest Based Entrepreneurship & Innovations in Rural Development Context– Finland*

* based on

- a) Preliminary material for Country Report in COST E 51: Integrating Innovation and Development Policies for the Forest Sector
- b) Matilainen, A. & Kajanus, M. & Niskanen, A. & Mynttinen, S. & Ollonqvist, P. & Vihinen, H. 2007. Innovations in Forest –based Value Chain Firms - The Finnish Approach for the discussion. in Rametsteiner, E. (ed) Proceedings of the 1st COST Action E51 Joint MC and WG Meeting 12-14 October 2006, Grosspetersdorf, Austria. <http://www.boku.ac.at/coste51/>

Promotion on Forestry and Forest Based Entrepreneurship & Innovations in Rural Policy Regimes

Financial incentives for rural SMEs

Regional policy regime:

Firm specific solutions & top down systems

direct investment subsidies (subsidized loans, cost share, systems in taxation..)

subsidies for schooling, marketing assistance

Rural policy regime:

Development of local business infrastructure

creation of local milieu

use of tacit knowledge

Innovations: origin and mode of processes, categories, implications in rural policy

Comparative case evaluation: wood product industry programs in two policy regimes



Support on Forestry and Forest Sector Entrepreneurship – Coordinated Policy & Implementation

*Key policies strengthening cross sectoral policy integration/co-ordination for the support of developing innovations in vertical production chains**

Strategic programs

Sustainable development policy
Innovation policy

Implementation programs – business infrastructure creation

Rural development policy
Regional development policy

Forest Sector Related Programs

Finland's National Forest Program 2010 (& update FNFP 2015)
Forest Based Sector Programs (Roadmap 2010, Finland's Wood Product Industries 2020)
Bio Energy Programs

* Preliminary material for Country Report in COST E 51

Promotion on Wood Product SMEs in Rural Policy Regimes

Regional Policy Phase: Individual Policies of Ministries up to the early 1990's

National top down industrialization policy aimed for equalizing regional differences

Strengthening existing industry: activities and employment

Innovation policy supporting new production technologies and products

CASE: WoodFinland I (PuuSuomi I) – action program 1992-1995



Promotion on Wood Product SMEs in Rural Policy Regimes

Rural Policy Phase: Inter sectorally coordinated rural policy during EU membership

Creation of *intersectoral co- operation policy* infrastructure (co operation in regional and rural policy)

Co- ordinated policy implementation by Ministries of Labour, Commerce and Trade and Agriculture and Forestry) through TE Centres (Employment and Economic Development Centres)

support and consultancy for enterprises, technological development promotion in companies, assistance and consultancy related to export and business internationalization. Active public support for local and regional innovation networking

Innovation policy supporting organisational and marketing innovations in addition to the prior agenda based on production and product technologies

CASE: WoodFinland II (PuuSuomi II) – action program 1998-2005



Innovation Process – R & D inputs*

Low tech value chains: wood products, mechanical wood, energy...
Innovations: incremental, marketing, organisational...
Innovation process: R&D network: firm, (partners) & KIBS services case tailored

High tech value chains: pharmaceutical, medical, new uses of wood...
Innovations: radical, process, product...
Innovation process: intra firm (R&D dep.)& university research partnering continuous

*) The classification as low-tech and medium low-tech refers to the classification used by OECD (1994), which is based on the relative share of R&D expenditures of turnover: R&D High-tech industries > 5% Medium high-tech 5% – 3% Medium low-tech 3% – 0.9% Low-tech industries < 0.9%.



Innovation Process – Origin

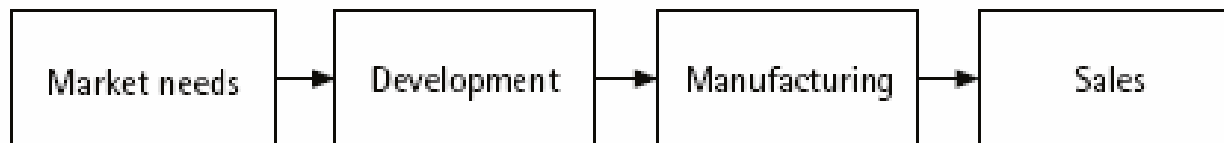
Search for novel technology solution: opportunity for technical superiority "science/technology push"

Search/identification on market opportunity: "demand pull"

Science push



Market pull



Schienstock & Hämäläinen 2001, Kairi 2005

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Business Strategy and Innovation Categories*

Search for Competitive Advantages through innovations

product innovation: the introduction of a new product or a new quality of a product, i.e. not known on the Customer Interface

process innovation: the introduction of a new production or procedural method in the industry sector proceeding productivity, input quality & uniqueness

marketing/business innovation: opening up of a new market or of a new resource source with products or services with superior product design, quality...

organisational innovation : Implementation of a reorganisation on the managerial arena

* Schumpeter 1935, Oslo Manual (3rd Edition) (OECD 2005)

Local Milieu and Non-Local Value Networks behind Innovation Processes

urban and rural interaction in the innovation processes)*

- *the residual model*: rural area firms dependent partners without contributions to innovations generated in urban areas and distributed to rural areas.
- *divided/dual model*, urban and rural areas specialise their functions that are not compatible.
 - Mk I consensus
 - MkII conflict in the line with centre-periphery theories
- *continuity model*, urban rural relationships as continuation changing according to distance. Starting point not the areas but the activities and their frequency
- *mixed activities model*. urban and rural are mixed both regionally and functionally without clear border in between

*) Storhammar & Virkkala 2003

Innovation Management in Value Chain Context *

Capabilities

Configurational capabilities: ability to manage knowledge formation and innovation abilities

Tacit knowledge: proximity (both cultural and physical) important when tacit knowledge is crucial for competitiveness.

Networks

Inter-functional project teams: within the core competence of each company on a sequential basis. Team includes all functions (purchasers, sales representatives, product designers, production managers and personnel at the shop floor)

Customized, non-standardised solutions: benefit from physical proximity between the companies, is not essential

Infrastructure

Institutional infrastructure and public goods: important for competitiveness of SMEs that frequently benefit from the supplements to their informal, tacit knowledge base in the form of R&D-competences and more systematic basic research and development.

*PILOT, Bender 2006

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From regional policy agenda towards rural policy *

Regional Development Policy regime up to the early 1990's **

Phase I economic approach behind the regional projects

formulated and financed through Ministries and aimed to proceed the economies of most problematic areas and create special development areas,

substituted with

Phase II the geography of well-being and development approach

retaining the vitality of villages and the retention of services but also technical innovations

Policy formulation and implementation:

Formulation of Regional Development Targets: The Ministry of the Interior (MI) in cooperation with other ministries and the Regional Councils.

Regional Strategic Programmes: Ministry of Interior coordinates, monitors and evaluates the preparation and implementation in cooperation with other ministries and the Regional Councils.

*) OECD Rural policy review- Case Finland 2007 ***) Vartiainen 1998



From regional policy agenda towards rural policy *

Regional Development Policy regime up to the early 1990's **

Institutional development:

1991 programme-based regional development covering six programmes:

- development region,
- structural change region
- centres of expertise,
- rural area,
- island development
- border region

1993 the Regional Development Act promoting independent and territorially balanced development in regions.

1994 Regional Councils as the key policy formation and implementing stakeholders

*) OECD Rural policy review- Case Finland 2007 **) Vartiainen 1998



Rural Policy Structure

Rural and regional policy have parallel fields of policy.

Regional policy municipality level

Rural policy: village level

Broad and Narrow Rural Policy

Broad policy: influence on all actions,

Narrow policy: specific actions and development instruments

Functional policy: requires applying the resources of both narrow and broad policy

Rural policy progress:

1991 First Rural Policy Programme, MI (responsible for regional development) & MAF (responsible for agricultural and forestry policy). the competitiveness of rural areas as a location for business activities.

1996. Second Rural Policy Programme for 1996–2000

2000. Third Rural Policy Programme for 2001–2004

2004. Fourth Rural Policy Programme for 2005–2008 including *Regional Part of RPP, Regional Centre Networks, Centre of Expertise Program*

Intersectoral Regional Public Subsidy and Expertise Service Supply for SMEs TE Centres (Employment and Economic Development Centres)

Fifteen established in 1997

- by combining State authorities (labour, enterprise consultancy, agriculture and forestry) at the regional level
- to support and consult enterprises, promote technological development in companies and help them with exports and internationalization
- to implement and organize regional labour policy
- to promote farming and fisheries and develop the vitality of rural areas and agriculture as an occupation

three departments: enterprise, farming and fisheries, and labour.

include also *technology units*, which intermediate services provided by TEKES (the National Technology Agency of Finland)

provide *expertise related to EU funding*



Forestry Centres – independent from TE Centre activities

thirteen reorganized in 1996

- plays a key role in promoting regional development projects and in building co-operation between forest organizations
- emphasis is put on projects encouraging: young forest management, modes of forest energy usage and small-scale wood processing,
- provide advice to business & services related to forest management plan

* OECD Rural Policy review- Case Finland 2007

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Policy Objectives: Forest Based Rural Development*

Growing *number of regional and local firms and employees* in the vertical value chains of wood product industries

Increase in the *supply of the forest investments services* through entrepreneurial solutions to meet the growing demand from urban and aged NIPFOs

Support on the establishment of rural micro enterprises

Development support on the *embedded infrastructure* that supply services for new rural micro enterprises and entrepreneurship

* Ministry of Agriculture and Forestry: targets on rural entrepreneurship in Finland for 2005-2008



WoodFinland I (PuuSuomi I) – action program 1992-1995 *

Program preparation: by three separate working groups: a) entrepreneurship, b) community and regional development c) schooling

Program initiation: Rural Development Policy Council (First Rural Policy Programme)

- Open access development program
- Promotion of new rural entrepreneurship and development of rural SMEs in Wood Product Industries

Program targets and implementation

- a) creation of pilot (reference) projects based on locomotive firms
 - round table activities among business managers
 - evaluation of business concept and logistics in the reference value chain (PUUPRO) created
- b) extensive commitment by relevant interested firms in regional context
 - arrangement of regional seminars to advance business network formation

* Vanhanen & Halonen 1995.



WoodFinland I (PuuSuomi I) – action program 1992-1995*

Parallell technology programs (TEKES)

- Wood Construction Technology (Puurakentamisen teknologiaohjelma 1995),
- Mechanical Technology of Wood (Puun mekaaninen teknologia, PMT, 1992-1996)
- Wood Plate Technology (Puulevyteknologia, PLT) 1992-1996).

applying linear innovation process approach

firm projects (applied) and projects by universities and research institutes (scientific) separated

Rural Development Project (Maaseutupolitiikan kehittämistyö 1988-91)

first tools of national policy: **

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

*Vanhanen & Halonen 1995. ** Vihinen, H. 2007. COST E 51 Country report

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WoodFinland I (PuuSuomi I) – action program 1992-1995*

Program activities:

a) locomotive firm network - Glue lam wood plate production

Merging of three development firms in Northern Finland to provide subcontracting to international wholesalers. Leader firm as customer interface actor

b) wood (softwood log) delivery co operative of NIPFOs

Joint interest company by 23 NIPFOs - to process local softwood logs and sell them.

Value chain expansion by created drying capacity for external sawnwood.

<http://personal.inet.fi/koti/sirkkala/Sarjankyla.html>

Conclusions:

Wood industries:

Knowledge creation & networking based on narrow cost leadership targets: linear innovation model

Competitive advantages (cost leadership and positive economies of scale) hard to maintain in international subcontracting

Wood delivery and co operatives:

Network creation based on arrangements in harvests and wood resource supply (forest management and harvest technology solutions). Competitive advantages (cost leadership) hard to maintain in the long run



WoodFinland II (PuuSuomi II) – action program 1998-2005 *

Program approach: Public Private Partnership

International dimension: Integrated into Wood Europe Campaign

Program Objectives

- Progress in Wood Product Industries
- Expanded use of wood products: Wood become a market leader in
 - Construction system solutions
 - Customer product in high quality living

Outcome targets

- 1) Network creation between SMEs on regional basis and connections to locomotive firms operating in international marketsk
- 2) Creation of new wood components and modules especially for construction
- 3) Technological and business management knowledge creation among in SMEs

* PuuSuomi 2005:Final report

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WoodFinland II (PuuSuomi II) – action program 1998-2005*

Intellectual resources

18 regional developers (full time), 35 county contact person, 30 project managers (wood projects)

Parallel technology programs (TEKES)

Wood Construction Technology Program 1995-1998.

Added value wood product technology program 1998–2003

Wood Industry Sector Policy Program 2004- 2010

Wood Construction Promotion Program 2004 - 2010

13 technology programs in Construction (TEKES)

Rural Development Programs

Third Rural Policy Programme for 2001–2004 ,

Fourth Rural Policy Programme for 2005–2008 with Regional Part of RPP, Regional Centre Networks, Centre of Expertise Program

WoodFinland II (PuuSuomi II) – action program 1998-2005*

Thematic implementation:

1. *Knowledge creation for regional network developer specialists (1998-1999)*

Creating program resources: Advisor activities of developer specialists

2. *Implementing wood industry development (2000-2003)*

Resource focus: on projects with high development potential

3. *Creating European business network (2003-2005)*

Coordinated network creation with large locomotive firms

Project outcome: 11 partnership networks for SMEs

- 4 managed and coordinated by locomotive company with international business activities
- 7 regional networks of SMEs for national market activities



WoodFinland II (PuuSuomi II) – action program 1998-2005*

Conclusions:

Wood industries:

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Wood delivery and co operatives:



The Centre of Expertise Programme 1999–2005

- 22 centres of expertise with 45 fields of expertise in the country
- 500 million euros available in total
- have generated 12 000 high-skill jobs and over 1 000 new businesses.
- is one of the four special programmes based on the Regional Development Act
- pools local, regional and national R&D and selected other knowledge resources to support the utilization of regional strengths and specializations
- concentrates on using the expertise in selected, internationally competitive fields towards business activities creating competitive advantages
- to utilize high-level expertise.

Major contributions:

encourage for the regions to direct limited resources towards exploiting regional strengths and opportunities.

clarification and consensus on regional specialization among the regional policy stakeholders.

Centre of Expertise for Wood Products - national network



Centre of Expertise for Wood Products

national network of universities & research institutes

Areas of Expertise:

Modern Wooden Town - *Wood Studio Oulu*

Large-Scale Wood Engineering - *Tampere University of Technology*

Living with Wood and Design - *University of Art and Design / School of Design Helsinki*

Diversification of Wood Utilization - *Finnish Forest Research Institute*

Development of Technology - *Lappeenranta University of Technology / Technology Center*

New Business Concepts - *University of Vaasa / Levón Institute*

Developer Forum - *Helsinki University of Technology / Department of Forest Products Technology*

▶ <http://www.puusuomi.com>

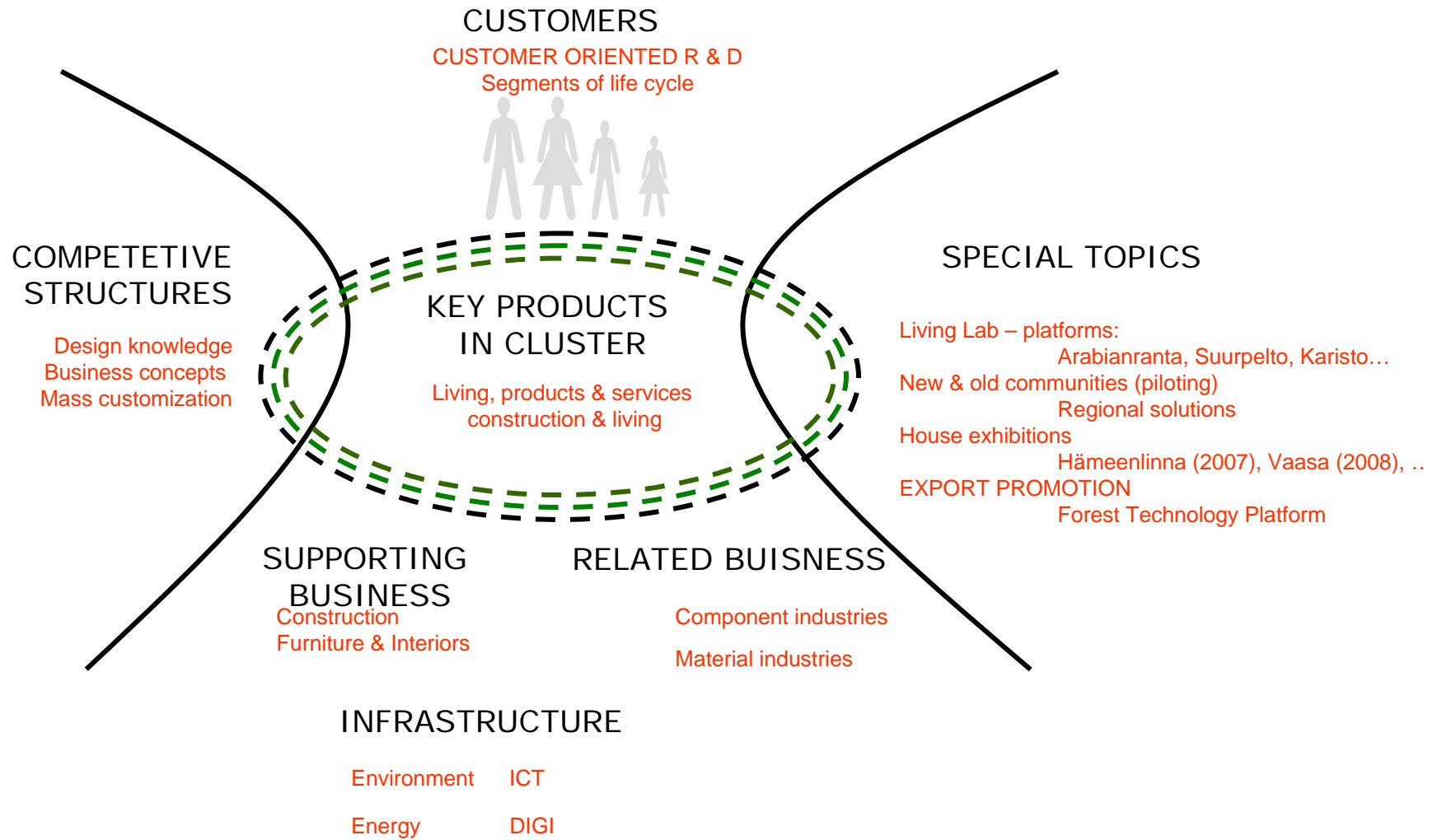
Provided tailor made R&D network formation for innovation processes for Wood Products & related projects

Focus: SMEs & business networks

Coverage: the needs of the entire business chain

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Source: Leena Paavilainen METLA



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Sources: <http://www.kiinteistoliitto.fi/attachements/2005-02-03T13-23-2567.pdf>, <http://www.Culminatium.fi>

Conclusions – Business Infrastructure

Structure Wood Product Markets & Competitive Advantages

BtoC Global markets- competition & CAs of players

Producers of standardized products - CAs: economies of scale in intra firm vertical/horizontal value chains

Wholesalers/retailers of standardized products - CAs: cost leadership applying global subcontracting

BtoC Custom segment oriented markets - competition & CAs of players

Producers of customized products - CAs: vertical & horizontal production networks & international marketing partnerships, brand images

Wholesalers/retailers of customized products - CAs: branding retail/segmented retail & quality/branded production partnering

BtoB Markets of standardized modules/components - competition & CAs of players

Production, Research & Development & Design integrated - CAs: mass customization, JIT & assembling competence

Production, Research & Development & Design separate - CAs: cost leadership, JIT & assembling competence

Conclusions – Cross Sectoral Policy Integration

Extensive adoption of cross sectoral policy agenda

Sustainable Development: adopted as cross cutting issue from Rio resolutions 1992 on
Forest Certification, Kioto Protocol...

Innovation: preparation and implementation coordinated (National Technology Agency (TEKES))

up to mid 1990's: technology orientation & intra firm process support to firms with internal R&D resources, priority in radical innovations and linear processes

under EU membership: adopted promotion of marketing/ organizational innovations (both intra firm and business networks), support promotes incremental innovations & low tech business

Regional Development & Rural Development policy: strong policy coordination, bottom up preparation

Regional Development Act 1992 & preparation and management by Regional Councils (multi - sectoral participation)

Regional Centres (especially TE Centres) provide coordinated implementation

Forest Sector Related Programs

cross- sectoral preparation, supervision and update in Finland's National Forest Program

2010

Conclusions – Innovation Support

innovation support in vertical wood product value chains

Forest Industry:

Roadmap 2010 from 2003 for Finnish wood product industries parallel European process (CEI Bois)

Finnish wood product industries technology Platform parallel with European Forest-Based Sector Technology Platform and its Strategic Research Agenda (SRA)

National:

entrepreneurship and business development in wood product industries and wood construction (Government program initial)

- 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

National Technology Agency (TEKES)

promotion of marketing/ organizational innovations

intra firm incremental innovations and organizational innovation by business networks

Thank You

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Material references

<http://www.joensuu.fi/coste30>

<http://www.efi-innoforce.org/>

<http://www.boku.ac.at/coste51/>