Cleantech – a Driver for Future Wood Products Industries?

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Changes in paradigm

- Already 6 years of
  - recession in Finland and our main markets (Europe, Asia, Middle East, North Africa, …)
  - declining markets and over capacity of certain paper grades (e.g., demand of writing and printing papers decreased 35% in Europe from 2005 to 2014
  - low volume in house construction
- Novel wood based value chains are expected to boost the renewal of the forest sector (being still mostly in the introduction phase of their life cycles):
  - Biodiesel, cross-laminated timber, dissolving pulp, hemicellulose based products, lignin based products, modified wood, nano scale products, side products and derivatives from pulp production, wood-nonwood composites, …
  - Service models for sustainable development solutions in various businesses.
The Big Picture

- The biggest challenge of the humankind is saving the planet from ourselves – limited resources are shared by constantly growing number of consumers
- In practice, materialistic motivations to obtain short term profits are still most often the driving forces for technology development etc.
- A megatrend of sustainability is expected to result in societal changes that scale up to the level of global changes caused by the development of information society in the past 20 years

No miracles are needed, just to change the world…

Great (and growing) business potential for cleantech solutions (not the kind seen in car industries recently…)
Solutions for the environmental concerns via the concept of cleantech (CT)

According to www.cleantechfinland.com: CT refers to technologies, services, solutions, process innovations or products that help reducing the environmental load caused by human activity, to save energy and natural resources, and to improve the living environment.

- CT is among the strongest growth businesses in Finland. Combined turnover of the CT sector grows by 10-15% per annum
- The Finnish CT business currently employs 50,000 people. 40,000 new jobs are expected to be created by 2020
- 40% of public R&D funding in Finland is allocated to the CT sector
How are wood products industries located in relation to the concepts of bioeconomy and cleantech?

Wood products industries are processes that are based on:
• Sustainable forestry (*which is very much based on sawlog production*)
• High-tech raw material procurement chains
• Energy efficient conversion processes…

and aim at carbon storing products for building and living.

A key part of the bioeconomy, and has no contradictions against the concept of cleantech
What is the level of collaboration between wood sector and CT sector at the moment?

Nobody has even really tried!!!
Project *Cleantech as a Driver for Future Woodtech Industries*

**KEY INFORMATION of the project**

- **Aim:** Map the possibilities and restrictions for collaboration between wood sector and CT
- **Funding:** Vocational Training Foundation of Woodworking Men + Finnish Forest Research Institute / Natural Resources Institute Finland
- **Schedule:** 2014–2015
- **Methods**
  - Semi-structured in-depth interviews of 10 professionals, mainly representing expertise outside forest sector
  - A webropol survey to 228 respondents, who represented mainly forest sector expertise
Where are the cleantech or bioeconomy brands expected to sell?

The best selling market areas for both CT and bioeconomy brands are thought to be the EU, North America, and China.

Company representatives have less faith on China and North America as CT markets than the public respondents.
Are there markets for solutions serving the needs of sustainability?

Case China: China wants to clean the highly polluted country. Therefore, they have set a vision of being nr 1 cleantech nation in the world by 2020.

⇒ **Cleantech investments of**
   
   > 500 000 000 000 €

- China seeks partners for cleaning the country
- China likes wood (*cf. recent political decision to support timber construction, a very strong signal*)
- China has money
Timber construction, as well as many other fields of wood sector, has great CT potential

What does construction activities mean in global scale?
- Half of the exploitation of natural resources
- 40% of waste production
- Within construction sector, building construction consumes 2/3 of the material and energy use
- Building construction is the most important customer of wood products both in terms of volumes and values
  - E.g., in Finland >70% of wood products end up in buildings

Timber construction already now represents state-of-the-art technologies: industrial production processes, energy efficiency, indoor air quality, recycling, IT,…
What could be reached via woodtech-cleantech collaboration?

For us (researchers):
• Strong and attractive RDI consortia with wide cross-sectoral funding opportunities
• New thinking and multi-discipline expertise development to strengthen the competences
• International collaboration both with RDI organisations and industries

For the industrial partners
• New markets and business concepts
• Funding for investments, internationalisation, and networking
• Growth and internationalisation
Summary

• Megatrend of sustainability forces us to create new economic activities
• Wood is the only renewable material available for industrial construction processes
• The economic growth expectations derived from the bioeconomy discourse, are very much dependent on the viability, growth and profitability of the wood product value chains
• Wood sector is encouraged to collaboration with CT. It is a new approach, but it may create major business innovations and open huge new market possibilities, also for the RDI people
• Interesting export markets for combined WT/CT products (esp. China) are volumetrically so large that production networks or alike organisational innovations are needed
  => International collaboration is wanted!
Further actions

Luke is preparing further work to create collaboration between the bioeconomy and cleantech sectors in the Baltic Sea Region:

We have started preparing a project *Promotion of wood products industries within bioeconomy in the Baltic Sea Region (PROWOOD)*

The project is supported by the Nordic Council of Ministers, EU Strategy for the Baltic Sea Region Seed Money Facility

Interested partners are kindly invited to contact:

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Welcome to the Symposium: *Wood Products Industries in Future Bio-Economy Business*, Lahti, FI, April 7-8, 2016

**Symposium highlights**

- the importance of wood products and woodworking industries in the European bio-economy
- new opportunities for business, markets, products, services and wood design
- wood products industries in the EU policy and research programmes
- networking at the European level between decision makers of wood products industries, society, policy and research funding

The first day consists of presentations given by leading European bio-economy and wood products industries experts, followed by an interactive panel discussion. In the second day, the participants are invited to discuss, plan, and network to produce ideas for further collaborative actions.


**Welcome to the Symposium!**

**Main organizer:**
Natural Resources Institute Finland (Luke),
Wood Materials and Products in the Development of Bio-Economy Research, Development and Innovation Programme
Thank you!

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