

The Wood Cluster, serving Luxembourg's wood sector

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Wood Cluster

The start of 2017 saw the birth of the new Wood Cluster, managed by Luxinnovation and dedicated to Luxembourg's wood sector. What role can a traditional sector based on a natural and ancient product play in a society in full evolution? Discover the answer on the following pages – originally printed on a product that resulted from the wood sector.

Wood, a sustainable natural resource "made in Luxembourg"

Luxembourg's forests cover more than one third of the territory and produce a sustainable product *par excellence*: wood.

Every year, the total forest produces some 760,000 m³ of wood, of which on average some 500,000 m³ is exploited by man. The Luxembourg forest as a whole is managed in a sustainable manner, meaning that no more wood is taken than is replaced. From an economic point of view, one can compare the harvesting of timber to the interest that is generated by capital, which in this case is represented by the forest itself. In this sustainable system, the capital stays constant and even goes up a little in value.

In Luxembourg, two systems of certification – FSC and PEFC – further guarantee the sustainability and the multifunctional management of forests (regarding economic, ecological and social criteria). These labels play an important role in the control and credibility surrounding the production of this natural resource.

Within our forests, there are many types of wood with very different structures and visual and technical characteristics. One can distinguish between hardwoods (beech, oak, hornbeam, wild cherry, etc.) and softwoods (spruce, Douglas fir, pine, etc.). In Luxembourg, conifers demonstrate a total annual increase of 430,000 m³ against 330,000 m³ for hardwoods.

Depending on the different forest species, the same kind of trees can result in wood of various qualities. These differences of quality obviously affect their use and their journey through the wood industry. It is thus possible to differentiate between:

- Building timber: high quality wood, which is mostly used in construction or woodwork (carpentry). Selling prices are the highest and currently accounts for about 25% of the sales in Luxembourg, but the current trend is pointing downwards.
- Industry wood is of lower quality. It is relatively quickly shredded and then retransformed at large wood processing plants such as Kronospan or Burgo Ardennes either in the form of panels, for example, or as pulp. 50% of timber is sold as industrial wood and this level has remained fairly stable over the last years.
- Energy wood is often very little transformed and is directly burned. It represents in total about 25% of sales with an upward trend.

The wood sector in Luxembourg: diversified, complex and creator of green jobs

Once the tree is cut, the wood circulates along an entire chain of players within the wood sector. We can differentiate several industries within this sector:

- Timber harvesting

- Sawmills
- Wood panel industry
- Paper industry
- Wood energy
- Wood furniture
- Wood construction

Today, all these types of players are present in Luxembourg and the Greater Region. Although it is difficult to put an exact figure on the number of jobs that depend directly or indirectly on the industry, it is estimated that there are about 1,500 wood sector companies employing about 11,000 people in the Grand Duchy. Their activities generate a wide range of green employment or “green jobs”. This diversity of know-how needs to be protected and developed further.

It goes without saying that each transformation of the wood creates added value. The economic weight of the wood industry is therefore far from being negligible and deserves special attention.

The wood construction industry: an indispensable engine in the wood sector

The wood construction industry currently plays an important role in the sector. Indeed, more than half the employment and the companies within the wood sector work with construction. There are architects, engineers' offices, and carpentry and construction companies.

Wood is increasingly used in construction as it is durable and can be combined with many other materials such as glass, concrete or steel. In recent years, wood construction techniques have evolved considerably and many more are technically possible today.

However, some barriers to the use of wood still exist: restrictions imposed by urban planning and safety regulations (fire), unsuitable specifications, the lack of qualified personnel or technical skills, etc.

A timber industry in difficulty

Although diversified, the wood industry in the Grand Duchy and the Greater Region today experiences both structural and cyclical difficulties. During the cluster's set-up phase in 2016, an analysis uncovered some of the current challenges and obstacles (details from this study can be downloaded at www.emwelt.lu).

For example, there is an imbalance between supply and demand on the local market. Some processing operations, most notably sawmills, have been disappearing, and exports of wood (including beech) to China are growing. The sector is also experiencing an increasing lack of skilled labour.

A sustainable material and a sector at the heart of society's challenges

Based on the use of a material that is both sustainable and renewable, the wood industry now finds itself at the very heart of the challenges to our society.

Circular economy

As a renewable material with many possibilities for transformation and use, wood plays an important role in the circular economy. The notions of "recycle" and "upcycle" in relation to the development of new wood processing technologies make total sense here.

Today, the wood value chain has many possible related work flows that can improve the longevity of the material through various forms of successive uses. This wood utilisation journey fits perfectly into the logic of the circular economy. For example, it is quite possible to imagine that a timber beam used to construct part of the framework of a roof is then redesigned after this first incarnation into a panel or into paper that is later used in a boiler as fuel. In this sense there are many possible configurations and the value added is greatly multiplied at each step. The main challenge is to create flows within the value chain that allows for this transfer of material purpose. In this sense, the notion of "regionality" is important because the development of short distances between different material forms and usages can better contribute to the smooth functioning of the circular economy.

Fighting climate change and implementation of COP21

Wood plays an important role in the challenges related to the fight against climate change on several levels:

- First, forests are carbon sinks. This means that they absorb more carbon than they release as carbon dioxide. European forests are currently a net carbon sink as they take in more carbon than they emit. In climate negotiations, this temporary reduction of carbon dioxide in the atmosphere is also known as negative emissions;
- Some uses of wood (construction) make it possible to fix the amount of CO₂ long-term. To explain, a hugely beneficial aspect of wood construction is that each cubic metre of wood used contains about one tonne of carbon dioxide that has been extracted out of the atmosphere by the tree. The longer the building is in use, the longer the carbon stays out of the atmosphere, because it is "fixed";
- The production of wood materials requires much less energy ("grey energy" or energy produced from fossil fuel) than that of many other materials;
- The use of energy wood reduces the usage of fossil fuels (substitution effect).

Rifkin report

The wood sector is based on the pillars of energy, construction and industry along with the circular economy and the smart economy. A "smart" economy is to a large extent based on the exploitation of information and communication technologies, but it also optimises the use of its resources and manages them in a responsible way.

Luxembourg has to carefully conserve its scarce natural resources. Therefore it is particularly important to manage those that we have at our disposal, in particular the human resource and its know-how. In today's global political context, it is vitally important to federate all of the various players in the wood sector more closely, to create more value locally and to prepare the sector to meet the challenges in the short, medium and long term.

Support for the responsible use of this natural and sustainable wood resource and the valorisation of the know-how in Luxembourg and the Greater Region in order to develop the local economy and to conserve and even create jobs is paramount. In order to meet these expectations, it was therefore decided with the sector players to create a cluster-type structure in Luxembourg.

What is a cluster?

One of the key characteristics of a cluster is the concentration of innovative players. In the business world this refers to a conglomeration of companies, research centres and other organisations which are linked by a common field of activity, which in this case of course refers to wood. It is precisely this physical and content-related proximity that creates trust; an essential condition for the successful utilisation of the existing potential of the collective.

In the cluster, ideas are born, refined and implemented jointly. The result is not only new partnerships and a faster exchange of knowledge, but also a competitive situation that creates a climate of positive stimulation and progress. The Wood Cluster is open to all of the players involved in the production or processing of wood whose mission contributes to the green growth of Luxembourg. It is administered by a board which encompasses representatives from all the various fields within and surrounding the wood industry (public players, private companies, training centres, research, etc.). The main objective of this board will be to implement the framework for action and the priorities and strategies to be adopted in relation to specific questions. The establishment of the board is in its final phase.

The wood sector is quite large. In order to remain focused on some key issues, working groups will be created in order to refine and prepare – as well as possible – the activities and direction developed by the cluster. Synergies with other clusters will of course be sought within Luxinnovation in an effort to optimise and coordinate approaches as much as possible. For example, links with the Ecoinnovation Cluster or Materials & Manufacturing Cluster are obvious. But joint projects in the field of new technologies or logistics (perhaps less obvious) are also quite imaginable.

The day-to-day management of Luxembourg's Wood Cluster has been entrusted to Philippe Genot, Wood Cluster Manager at Luxinnovation. Along with his team, the Cluster Manager will implement, in conjunction with the concerned players, the programme of action which will animate the network and ensure communication.

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