

Material world

Climate change urges the need to look further than only energy options. The use of building materials is a long neglected issue but will be the breaking point in the future

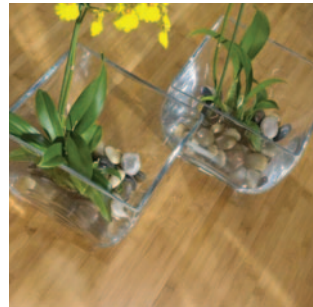
Climate change and the COP21 conference of Paris 2015 will have a large impact on society. It is clear that we cannot continue down the fossil road as we have done in the last century. This awareness is expressed in the contract that was signed by most of the countries in the world. One of the consequences is that the industrial sector has to look for better options than fossil-based materials and products. The change will be in economic thinking – from linear towards circular.

Impacting the building sector

The building sector is responsible for large amounts of waste and resource and transport use; up to 40% of these things worldwide are related to the building sector. All topics strongly relate to climate change due to mining, land reclamation, and emissions from transport and industry. By changing the existing ways of producing building materials we can take large steps to improve the environmental impacts of the building sector and reduce the effect on the climate.

Bio-based

If we are to reduce the environmental impact of the building sector, we have to make more use of what the world can provide in short and sustainable chains. Bio-based materials can play an important role in this change: they can be produced locally, don't need much processing and are able to regrow the same amount of materials in the lifetime of products. Importantly, bio-based materials can be considered CO₂ neutral – which is important when considering climate change. Moving from a linear way of using the resources to a circular system, where CO₂ and other



climate change agents will be almost neutral, will dramatically alter the environmental effect of the building sector.

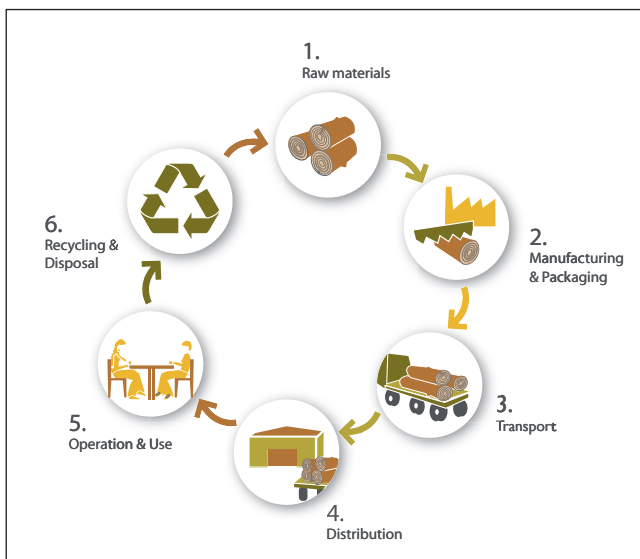
Not making the same mistakes

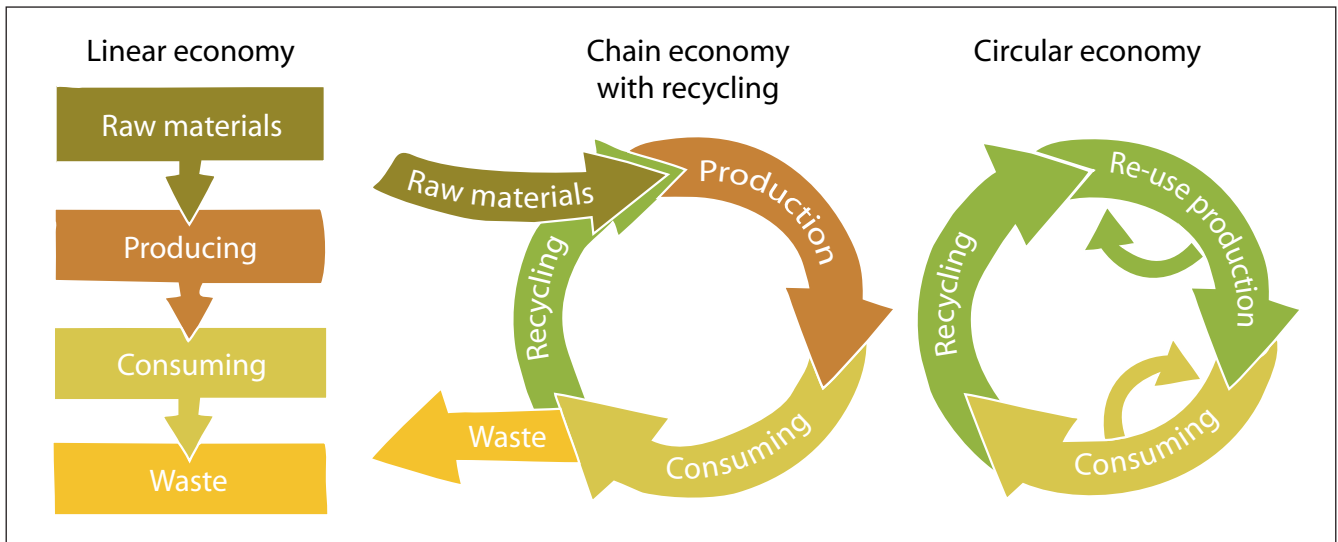
To be more certain that we are not making mistakes in replacing one way of living with another we have to take the whole lifecycle of products into consideration and be very transparent in the way we produce things. Lifecycle assessment (LCA) methods are developed to calculate the environmental aspects of materials and products in a transparent way. Apart from the fact that it is of course very difficult to capture the effects of production in one figure, making an LCA is the best way to be transparent.

Therefore, Agrodome is working in the field of LCAs to improve the production of the building industry. Agrodome is also involved in projects to improve the methodologies like product environmental footprint (PEF) and developments to improve the LCA systems with effects that are important for society, health, social circumstances and regional economic development, etc.

Transparency and LCA methodology: PEF

In order to be transparent there is a need to communicate results from LCA studies that are useful for the world's citizens. The European Commission has started with the product environmental footprint project. The aim of the PEF is to translate the complicated world of the LCA – with all its scientifically calculated environmental impacts – into an understandable system for the users of the products. At the moment the PEF is tested in pilot





projects and the first results are becoming available. It is clear that this project is not so easy; it demands a transparent attitude from producers and has to be solid enough to avoid greenwashing in the communication. In fact, the PEF is a test of whether the world is able to see the urgency of changing what we used to do. The final results will be presented in 2017.

Role of SMEs

Agrodome has made a report for the Dutch government and the building sector to find solutions for (bio-based) SMEs to enter the regular LCA schemes, in particular the Dutch National Environmental Database (NMD).¹

An important conclusion is that SMEs are most of the time unaware of the urgent need to make an LCA study. They don't see the added value of an LCA study in relation to the investment. Although there are already some tools that make it easier to do an LCA study, like the CAPEM method, Ecochain, etc., it still takes a lot of time to collect all the necessary data. To reduce the costs, we recommended working together so you can make a branch average and divide the costs between the partners. Another solution to make it economical, and more interesting, is the cross-border recognition of the LCA studies in the form of international environmental product declarations, like Ecoplatform is working on. And the PEF will be a good step forward to overcome this hurdle. Another aspect that could help is when the benefits of bio-based materials, like CO₂ sequestration, local production, landscape protection, health, social circumstances, etc., will be more rewarded in the LCA results.

Transparency

As mentioned above, transparency is the key in having large support for the new circular economy. Being transparent is always a hurdle for companies and especially for innovative SMEs. It is a paradox that should be solved in order to make the needed transformation from traditional, linear, fossil-based systems to a bio-based circular system. Apart from the companies' knowledge protection, a company should be transparent in the way things are produced and what kind of materials are used. Otherwise, society cannot be sure that the solutions, new products, etc. are not harming the environment even more than the old products they are replacing. This requires a shift of mindset and new solutions in

protecting intellectual property. Agrodome is working on this aspect in co-operation with stakeholders in the building industry, including the government, to create a transparent and level playing field.

Conclusion

Working together with all the stakeholders is key to all the solutions. We have to overcome the traditional borders and create a new way of thinking; co-creating is a good way to cope with the challenges that the change of the climate brings. Agrodome is working with different stakeholders on this by creating coalitions of companies, institutes and governments that are willing to change, and by providing tools, like a better LCA method fitting the demands of this time and of the future. We need these tools to make it possible to translate thoughts into practical actions fitting the reality.

Contact

Readers of this article that feel the same urgency to change the building industry and want to work this out in a practical way are welcome to make contact with Agrodome. Agrodome likes to be involved in projects related to improving the environmental impact of building materials, products and building concepts.

¹ Burgh, van der, G.F. & Verspeek, E.F.L.M Promoting the uptake of biobased construction products in NMD as part of the actions from the Green Deal Biobased Building, 2016, Wageningen



Fred van der Burgh
Sissy Verspeek

Stichting Agrodome
Member of the CAPEM group

+31 317 427570

fred@agrodome.nl
sissy@agrodome.nl
www.agrodome.nl
www.capem.eu

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