



TIM/SEM.1/2003/R.5
10 February 2003
Original: ENGLISH

Seminar on
STRATEGIES FOR THE SOUND USE OF WOOD

Poiana Brasov, Romania
24-27 March 2003

The Competitive Climate for Wood Products and Paper Packaging; the factors causing Substitution with emphasis on Environmental Promotion.

Session I

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ABSTRACT

Wood and paper were early materials. When few other materials were obtainable, wood was used for a multitude of purposes. Following the advent of new technology and cheap energy materials like reinforced concrete, plastics, steel and aluminium often replaced wood. Lately however the environmental cost for pollution, the use of finite energy resources and the so-called Green House effect has entered the agenda, as has the whole concept of a sustainable society.

Wood is a truly sustainable material, provided forestry operations are carried out in a responsible way, not only regarding forestry volume and reforestation, but also regarding wild life, flora and fauna and socio-political aspects on forestry. Obviously the environmental strength of wood and paper products is based on responsible forestry. This presentation is made under the assumption that such a responsible forestry operation will be maintained.

The competitive climate for wood products and paper packaging is a complex of many variables and influencing factors. On one hand wood is often highly regarded from environmental, emotional and practical reasons. People like wood. On the other hand specifiers and ordinary people may choose something else. To know why is critical in order to remedy the situation.

The decision process is also complex. Wishes of a producer or a specifier may differ from the end users, based on different preferences and/or perceived practicality or economy.

It is not unusual that someone else than the end user makes the critical decision about materials, occasionally based on erroneous or incomplete information or the decision maker is simply not convinced that wood is the best choice. Steel studs for partition walls may serve as an example. They are not cheaper than wooden studs and not better for the end user, but may be better for the

builder. Powerful R&D, lobby and promotional efforts by other materials have a strong influence too.

Wood is thus part of a complex market space. Many different trends and movements occur, some-times overlapping, sometimes in different or even opposite directions. Examples: Building codes, fashions, environmental trends, DIY and new trade patterns and the current trend towards a sustainable development, where wood has almost all the advantages. The combined effect of all these trends or movements is reflected in the actual use of different materials, i.e. what is actually bought and used at a given price/ quality ratio.

If the world population and the economic growth should increase with 100 % in 25 years, i. e. in developing countries, it appears unlikely that the world's forest resource, although satisfactory now, can grow at the same pace or even be maintained. Then large numbers of people in such a population growth would either risk living in poor circumstances, or put a lot of strain on available energy resources and on the environment, since most of the competing materials originate from finite resources, pollute and use more energy.

So is there such a thing as a desirable or optimal substitution, seen from a resource point of view or based on function and fulfilment of needs? The answer to what is *a sound use of wood* can be: *A sustainable society based on sound environmental principles. Wood meets all requirements and should be used more to reach these goals.*

Key words: sustainability, environment, competitive climate, and substitution

INTRODUCTION AND MODELS

In many complex processes one of the difficulties is to find out what is actually happening in what appears to be happening. What are the drivers and the non-visible undercurrents? Once we know that it is much easier to understand and explain what is taking place. For that purpose a model can be useful.

A model, a map for instance, is by definition a simplification of the reality but can help us understand and is no doubt quite useful. Alvin Toffler used an interesting wave model for complex trends in his book "The third wave". Different trends may vary in strength and direction. Each trend is here represented by a wave system. When two wave systems meet the top of one system may meet the bottom in the other and the result is no change then. If two tops meet the effect is doubled. The wave systems are superimposed and the resulting trend is the total sum of the different waves.

Substitution may be described with such a model. One obvious *first wave* was the one that occurred when a wide spread use of wood was replaced by so called more modern materials. The early driver here was *perceived practicality* at a favourable cost benefit ratio. This wave was further enhanced by new technology and knowledge about such new materials. At the same time less development activities of wooden products took place.

This led to a *second wave* that we might call *opinion or technology fashion*. Decision makers believed that other more “modern” materials should take over from wood. This strengthened their position and weakened wood products even further.

In the *third wave* that we can see now *sustainability and environmental issues* enters the picture. They can be used in a *defensive* way like the issue of certification or *offensive* as when we call for a sustainable use of materials.

These largely objective variables later tend to lead to more subjective opinions, waves, making people think: “Wood is environmentally sound and I support that!” Suddenly wood may find itself in Vogue. At the same time we can see that the perceived rationality of other materials than wood, to a large extent was based on cheap energy, the use of finite resources and on the fact that polluters did not have to pay the costs of the pollution they created or took part in. If they were to bring these factors into the picture or pay the costs for cleaning the environment, additional health care etc the cost/benefit ratio would look less favourable for such materials.

In a well functioning democracy, new findings for instance by researchers, NGOs or others eventually results in a new picture of things, a new paradigm, as was the case after the Rio and the Kyoto meetings. The new paradigm spreads in wider circles until it becomes politically useful. Politicians will grab the opportunity to meet current trends or collect voters on these grounds. Besides speaking about it one way of showing their interest is to change rules and regulations to steer closer to what they find is politically correct.

So rules and regulations are gradually changed. And through many channels an opinion wave is created in wider circles and the cost/benefit ratio eventually changes in favour of sustainable materials like wood.

When checking such a model with what actually happens in different parts of the world we can clearly see big differences. Some of the general trends are similar but the magnitude is different, so much fact that the usage picture does not look the same at all. Compare for instance North America with Europe or individual countries in Europa with each other. Intense wood using areas may use 10 times more wood per capita than low wood using ones. Some of these differences may be explained by different climates and domestic raw material supply, but it looks like traditional cultural- and building habits plays an important role as well.

Naturally in the wake of such habits one will find lots a very tangible factors like: Lack of skilled labour, rules and regulations that are not applicable for wood, products not available, engineers not possessing necessary knowledge for specifying wood products, distribution not supplying the right goods/products etc.

Naturally such factors will seriously hamper the use of wood.

THE COMPETITIVE CLIMATE AT A GRASS ROOT LEVEL

Not all of us will wake up in the morning with a strong urge for logs, planks or 2”x4”. We would rather have a breakfast and then we do not want flour and water, we rather like to have some coffee, bread and butter, that is rather a meal then merely the ingredients.

Applied to wood: We may want new windows, a floor or even a new house (B) but not primarily the planks, the raw material (A). Unlike most competing materials wood is often offered more or less as a raw material. That is many time an obstacle since one may not know/be able or want to transfer the raw material into a finished product.

Once the industry knows how to move from A to B, from raw material to product, a substantial part of the problem is solved.

At the other end of the scenery we find our competitors. They provide well-defined products most of which are available in the distribution chain with well-specified properties known to specifiers.

Also the competitors try harder to extend the products to systems and services.

With uPVC windows for instance there is often an instalment service linked to the physical window and instructions, although some say that what the producers claim as “maintenance free” really means there is no way to maintain these windows.

Still the difference in approach is striking. If a house owner in the UK wants his windows replaced he can just say yes to one of many telephone salesmen, go away for the week end and new glossy uPVC windows cut to size will be installed in his house, when he gets back on Monday morning.

If however he prefers wood, he will have to find out which species to choose, search for a manufacturer, a carpenter and often a painter. In other words his life will be rather more complicated.

The assumption that products are a better option for end users is supported by the fact that when finished wood products are available they may be very successful too.

Wooden floors for instance, where a whole range of products is available, are very successful at the moment. Wooden furniture is another example. IKEA is a successful worldwide provider of products with efficient marketing and distribution methods.

On the other hand finished products of other materials than wood normally have a shorter product cycle, whereas wood can last very long in many areas of uses.

A very specialised product is by definition less generic and thus more vulnerable to changes.

Wooden planks and brick stones are close to being raw materials. Both can be used to build many types of houses. A wall sized concrete block on the other hand is meant for a certain type of building or building system and cannot normally be used for other, different buildings.

The overall conclusion however is that wood is losing ground, since it does not always come as products. And therein lie both an obstacle and a great potential, if the wood based industries get their act together.

And - wood is a highly versatile material with a fairly long product cycle.

THE RESULTING TRENDS IN SUBSTITUTION

Current substitution trends and underlying mechanisms are described with numerous examples in the report:

“The competitive Climate for Wood Products and Paper Packaging – the Factors Causing Substitution with Emphasis on Environmental Promotions. by John Burrows and Berit Sannes (ed.) 1998. A study performed by the Subgroup Substitution Project of the joint FAO/ECE Team of Public Relation Specialists in the Forest and Forest Industry sector. Oslo 202 pages exclusive appendixes.

Most of the findings in the study are still valid and therefore they will not be repeated here.

Some changes in the situation may have occurred though.

The environmental movement and the calls for a sustainable society have moved from the pioneering stage to more of a normal everyday issue.

Many persons that used to represent NGO: s are now actually representing GO: s and some former demonstrators act from governmental positions, and both the issues and the persons themselves are better enlightened and matured. But the environmental conviction stays.

The common knowledge is also better. A slogan like “Save a tree –use PVC” is less credible today.

Much of the excitement within the industry about the environment issue was based on a fear/benefit expectation.

Fear, for being positioned as non-environmental friendly. The benefit expectation was of course that the industry hoped that an environmental friendly product should mean a significant boost of sales. It seems now that very little of that happened overnight. The penalty was mild and the benefits moderate.

Still the potential loss of being environmentally wrong was, in the minds of most company reps, potentially very dangerous.

We can take the certification issue as an example. To provide products from certified forests was seen as very important in many parts of the world, despite the fact that hardly anyone noticed a strong consumer interest for buying these products, let alone paying a premium for the certification. Initially there were some advantages in the retailing link of the distribution chain. But now when almost all suppliers provide certified wood that comparative advantage evaporated.

The final result seems to be credibility of some suppliers and also improved forestry methods, sometimes marginally and sometimes better than so. But destructive deforestation, taking place in some corners of the globe, was only marginally affected and still remains.

Certification for many had the character of removing a threat, or guilt from choosing wood. However it also *provides a solid base for a sound an increased use of wood.* And it makes it easier to position wood as a truly sustainable material.

But if we adapt the concept of a sustainable use of materials that concept should of course by definition cover the whole life span of a material/ product and then certification is only one of several important aspects.

For packaging material, perhaps more subtle to consumer opinions than solid wood, the new environmental attitude already brought some changes. Fewer producers now put smaller electronic gadgets in polystyrene packaging. Cardboard is the preferred choice.

But to capture increased shares of the market in other areas many other actions are needed.

When looking at this we need to establish *the state of the art*, which no doubt differs a lot for instance between North America and Europe.

North America has a high per capita usage of wood and price competition is fierce. But wood can also be seen as a material with such a strong position in the market that the major problem is to maintain or defend that situation.

The attackers as it seems are mainly the steel industry that normally relies on shipbuilding and the automobile industry and a few other heavy uses of steel. When those markets are quite or saturated, the steel industry will have to look at the housing and construction markets.

Their most important tools are product development and promotion/marketing of products and system solutions.

There is little doubt they have put timber-framed building under pressure here.

In Europe on the other hand wood can be seen as the aggressor, trying to capture market share from the more traditional materials like brick and block, reinforced concrete, glass and steel, uPVC etc. Competitors inspired the tools used for that purpose.

That work has already produced some fruition and wood is gaining market shares in housing flooring etc. Many believe we are in for a renaissance of wood. We can see revitalized interest among the general public and an increasing interest among politicians and authorities.

On the other hand trade and industry may be more traditionally oriented. Some industries used to live behind protective national curtains, created by local or national rules and regulations. Some industries were not able to carry out product development, since the national markets were too limited for the product series needed to reach profitability.

Many believe that when the European Union gradually will start to function as was the intention, as a free market, we will go in the same direction as the US. Results should then be more products made of wood, such as engineered wood, and a higher market share.

THE GLOBAL PERSPECTIVE

Also the fact that EU is self-supporting in wood, actually one of the most important surplus areas, and that wood can replace materials that need a lot of imported energy such as oil, will support a generally positive attitude to use more wood.

That should clearly fall within the boundaries of "sound use of wood".

It is very interesting though to see if areas with a forest shortage will have a similar attitude. In China for instance they are very concerned about having too little forest and they have since long tried to cut down the use of wood as a way to save their existing forests. It is evident then that the Chinese authorities do not regard more use of domestic wood as "sound use of wood".

With a booming construction sector this will by necessity lead to the use of materials that are more resource consuming and polluting than wood implying negative effects on the environment and on non-sustainable resources.

South America, Africa and South East Asia have a great potential for growing more wood through improvements in forestry operations and thus also increase the use of wood. On the other hand here is where most people are in doubt if the present forestry can be termed as responsible

and then if such a scenario should be called *a sound use of wood*. A continued destruction of tropical rainforests is, of course, a global threat.

In the very long perspective (or perhaps not quite so long), one can imagine a development that originally took place in smaller regions. Wood was brought from the forests to where it was needed and used, or later from one part of a country to another, or now, from one part of a continent to other parts of that continent.

On a global level one could in principle do the same, provided transport costs were reasonable and there was enough wood available. And to some extent we can see this development taking place already. Canadian and US wood has been sold to Europe for long. Now European wood is sold not only to the Middle East but also to the foreign East and US in large quantities.

By the same assumptions, that wood is available, responsible forestry is maintained and the costs, all aspects included are reasonable; one could conclude that intercontinental production and usage could very well be *a sound use of wood*.

But naturally there is no simple answer. The answer will be given when all the cost implications and all the pros and cons are counted.

CONCLUSION

Wood is part of an interesting complex of factors and influences. The combined effect of many interacting factors results in the actual use of wood in different regions. Sustainable development and environmental issues are important foundations, but not the only ones to be considered for an increased *sound use of wood*.

Some statements that could be useful to keep in mind:

- Wood did not pollute the water or the air, others did.
- Wood did not deplete existing finite resources like oil and ore, others did.
- Wood absorbs carbon dioxide, other materials do not.
- Wood produces oxygen, other materials do not
- Wood can be produced forever helped by the sun, other materials can not
- Wood can at the end of the life cycle be used as fuel, other materials can normally not

The sound use of wood based on sustainable and from all respects responsible forestry operations is extremely favourable. In fact wood is such an outstanding material that it is difficult even to imagine such a material had Mother Nature not invented it already.

A sound use of wood should be the consumption we arrive at, the consequence of, a sustainable society based on sound environmental principle. Wood meets all requirements and should be used more to reach these goals especially where wood is a natural abundant resource and perhaps also in other areas if the true cost picture turns out to be favourable.

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LE MATÉRIAU BOIS ET SES DÉRIVES

Module de formation No 1 Version 4, novembre 2001 CNDB, France

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