





ID: WOOD

Clustering knowledge, Innovation and Design in the SEE Wood Sector

n.5 Thematic Dossier Transnational Support Action

WP5: Transnational knowledge clustering www.idwood.eu

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foreword

With a surplus of quality forest resources and a strong tradition in woodworking, the SEE area has yet to take advantage of the significant potentials in the wood sector. The development dynamics of the sector have not been homogeneous, and the area is characterized by a dual spatial pattern - some of the territories have managed to develop their potential to excellence levels, whilst others are still struggling to fine tune the right support approach to the sector. Considerable disparities in terms of innovation and technological capacity hamper trade and investment flows.

The main objective of the **ID:WOOD Project** is to foster the innovation and competitiveness of SMEs in the wood manufacturing sector in the SEE area by networking and sharing technical and organizational know how in order to enable local support organizations (wood clusters, wood technology centres and RDAs) to address the organizational and technical deficits in the production sector. Pooling the experiences and know how of territories which have reached levels of excellence in the wood sector, and promoting cooperation between support organizations and local knowledge poles (universities and design centres) should accelerate the catching up process in terms of innovation capacity and human resources development.

A transnational network of wood sector support centres/experts which has been set up within the framework of the ID:WOOD Project is bestowing a synergic approach in order to promote the sharing, integration and transfer of the necessary know how. This approach should not promote simply cooperation, but also the complementarities and synergies between the territories in order to prevent any unnecessary overlapping of initiatives and investments in support structures which do not appear to be very rational in times of increasing budget constraints.

The present **Thematic Dossier** is part of a series of 5 technical dossiers produced by the wood sector experts involved in the ID:WOOD Project: 3 dossiers are each dedicated to one of the sub-sections of the wood sector (Sawmill, Construction Material, Furniture), 1 is dedicated to organizational aspects of the sector (Clustering), and 1 is dedicated to the transnational technical assistance provided to partners and SMEs by international experts. The aim of the dossiers is to provide partners, stakeholders and SMEs with an insight into some of the relevant technical aspects for the sector, and to strengthen the knowledge flow between the different reference centres, the stakeholders and the SMEs.

Paolo Panjek

INFORMEST WP5 Coordinator



SAWMILL

QUESTION 1

Partner

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Expert answering the question

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Name of the company (SME)	Hidden for Privacy
Sector of specialization (Furniture, sawmills, constructions)	Sawmills - high quality beech sawn goods, steamed and dried, semi-finished, capacity 3800-4000m3.
Product	Classic, high quality beech sawn goods, dried and steamed, semi-finished elements for glued beech boards
Export %	70 %
Main foreign markets	Germany, Austria, Serbia,
Number of employees	25



This is a rather small sawmill, processing high quality dried and steamed beech wood. The company has financial limitations, and also, in part, space limitations, but would however like to upgrade their production to a higher level of finalization – what would be our possible options, any suggestions? There are several beech sawmill processing capacities in the Bihac region (5-10), and all of them have invested in glued beech boards and solid furniture produced from these boards (dining and club tables, bed frames). They all believe that the German market is big enough to absorb all of this production.

So, the question is, what would be the best future options for a rather small beech sawmilling capacity, besides glued boards and furniture, bearing in mind financial, space and staff limitations? Due to the prevailing situation in this part of BiH, it will become be more and more difficult to obtain greater quantities of raw material, so is the only option is to find a profitable line in either decreasing the sawmilling quantities or increasing finalization? What are the best solutions and recommendations?

ANSWER

Sawmilling is known to be a labour-intensive production process, so all phases of the production have to be well optimized, even if we are only talking about small scale production. In softwood sawmilling, where the production is not so dedicated or individual, this may be achieved slightly more easily than in hardwood processing where each log has to be treated individually. If we are focused on a high production rate, we lose out on quality in the case of hardwood primary processing.

It is known that the prices of raw materials are rising, and that there is a lack of raw material of a specific quality on the European market. It is to be expected that, in the coming years, there will be a high demand for raw material by large new sawmills in Western Russia, the Middle East, and even China. This will therefore have an influence on the price and supply of raw materials, even in the Bosnia region.

On the other hand, Europe is also faced with changes in the product market. The demand for sawn wood is shrinking and, for the larger European sawn wood producers, the Asian market is gaining in importance. Experts believe that demand for construction materials in Europe will remain weak for years, so European sawmilling companies are focusing more and more on overseas markets.

In such situations, small hardwood producers should be focused on the quality of their products and on their production efficiency. Increasing production quantity in this situation cannot be recommended in as far as we are not dealing with products with a high added value. A higher finalization of the products is one of the options to increase the added value, but this must be followed by good marketing. If there are several sawmill companies with similar products which are focused on the same target market, they must be cooperative and not competitive. In foreign markets, they should use a joint brand name (or at least be together).

Another option is trying to increase the production yield by carefully reviewing of each phase of the sawmilling process starting with adequate input controls, the sorting of the logs (considering log characteristics, technology and products demands), the sawing pattern (live sawing, round sawing...) and the residuals in sawmill production (they should be sorted by moisture content, size, bark content... and used properly).

Investment in new technology is high, and since sawmilling is in general a traditional industry, we cannot expect that companies would invest in the newest technologies in the current situation. They can still however initiate some innovations in their processes, particularly in the field of log and board manipulation, in order to avoid hard manual work. Some other options are listed in the Thematic Dossier Sawmill where the case study "Improving the quality/efficiency of the sawmill process. Cost-effectiveness and resource efficiency in the wood processing business" is reported.

Another option is searching for new products which are not mass-produced. Beech wood is a raw material which can be used for construction. It cannot be expected that hardwood could replace softwood, but beech can be used as a composite material or combined with construction materials. This could be a market niche for some smaller producers.

In most cases, cooperation with development institutions/universities/technology centres speeds up this process. This is not necessarily connected with high financial costs or inputs. It is the same for innovative ideas which can be tested or derived via students thesis or through industrial projects.



Partner data

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Sector of specialization (Furniture, Sawmill, Construction material)	Sawmill, wood processing, furniture, building with wood.
Main Product	Research, training, testing
Export %	-
Main Export market	-
N° employees	46
Contact person	Dominika Gornik Bučar
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Information on the accessibility and availability of raw material is extremely important for planning any investment or the modernization of sawmills. It is important that the conditions of the supply are relatively constant and are valid for a certain period of time. How is this arranged in advanced sawmills (regions), how reliable is the information obtained, and in what period of time is it acquired?

What are the successful ways of achieving long-term annual agreements between forest owners and sawmills (best practice in Austria and Croatia) which can allow sawmills to ensure a reliable supply of timber/raw material?

Is the methodology different when the raw material is obtained from the state rather than from private forests?

ANSWER

Small Forests

It is necessary for forest management associations to have sound structures.

Best Practice Waldverband Steiermark – Best Practice Styria Forest Management Association.

The role of forest management associations: awareness-raising campaigns to step up the use of timber; providing support to farmers in organising timber harvesting; joint timber sales.

Big Forests /State Forests

Building up a favourable setting for good communication between the forest sector and the sawmill/pulp sector.

Further points:

The provision of necessary information to all participants in the chain – the raw material flow and the information flow have to correspond closely; the supplier should receive the necessary information immediately upon the supply of timber (measuring and calculations).

The use of standardized exchange formats to simplify "digitalisation" Best Practice FHP – data exchange format (http://forstholzpapier.at/index.php?option=com_content&view=article&id=26<emid=30).

- To negotiate frame agreements with annual quantities – especially with big forest owners à quantities fixed in advance, prices adjusted quarterly.

- Communication: regular meetings between the forest and sawmill sectors to discuss the current market situation so that each partner in the market is familiar with the situation.



CONSTRUCTION MATERIAL

QUESTION 3

Partner data

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Name of Firm (SME)	Hidden for Privacy
Sector of specialization (Furniture, Sawmill, Construction material)	Construction material (pallets)
Main Product	Paper (shipped on wood pallets)
Export %	100%
Main Export market	Western Europe
N° employees	N/A



Complaints about mould growth on wood pallets, resulting in the rejection of the palletized product, have increased steadily. Well-intentioned actions aimed at efficient logistics and cost-effective practices can have unexpected consequences (mould) that may deter pallet manufacturers from using wood. Hardwood accounts for around 70 percent of the raw materials used in pallet manufacturing. By necessity, hardwood pallets are fabricated from unseasoned wood, when the material is most workable. The average moisture content of unseasoned heartwood for domestic hardwoods exceeds 50 percent, and the moisture content of unseasoned poplar is well beyond 100 percent. Mould spores are everywhere in the environment and can germinate in as little as 24 to 48 hours if exposed to proper moisture, temperature and a food source. Since wood is the food source and the suitable temperature range for mould growth is fairly broad, moisture is the controlling factor for preventing mould growth. And yet, using unseasoned wood is also beyond the control of the pallet manufacturer.

Specific question regarding the problem:

1. What is the recommended way to prevent mould, especially in pallets made of poplar and beech? What chemicals can be used (allowable and efficient) in Europe in situations where this is the only solution (no time for air-drying, kiln-drying too expensive)?

2. What EN standards are used for the testing of wood pallets?

ANSWER

Question 1:

Mould can be prevented only when the wood is in a dry condition (with a moisture content less than 20%).

For export or import outside Europe (e.g. Australia, China, USA, etc.), the pallet should have received heavy phytosanitary treatment (fumigation, high temperature treatment, microwave).

Question 2:

EN ISO 8611-1:2012 Pallets for materials handling - Flat pallets - Part 1: Test methods.

EN ISO 8611-2:2012 Pallets for materials handling - Flat pallets - Part 2: Performance requirements and selection of tests.

ISO 8611-3:2011 Pallets for materials handling - Flat pallets, Maximum working loads.



Partner data

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Name of Firm (SME)	Hidden for Privacy		
Sector of specialization (Furniture, Sawmill, Construction material)	Construction material		
Main Product	Plywood		
Export %			
Main Export market	Italy, Croatia, Bosnia and Herzegovina, Montenegro		
N° employees	70		



The application of thermally modified veneer in the production of plywood has been investigated in recent years. The properties of untreated veneers differ from the properties of thermally modified veneers. Considering this fact, different regimes can be used in the production of plywood from thermally modified veneers. In addition to pressure and pressing times, glue plays a major role in the strength of the plywood.

Specific question regarding the problem:

What is the best glue to use in the production of plywood from thermally modified veneers? In general, what is the best glue for thermally treated wood?

ANSWER

There is no doubt that the surface of wood which has been thermally treated changes (the higher the T, the higher the degree of change), and the wettability changes as well. However, there is no reason not to use, as a start, the commonly used adhesives (UF, MUF, Vinyl), and after the relevant testing, to modify the process conditions (T, time, pressure, etc.).



Partner data

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Sector of specialization (Furniture, Sawmill, Construction material)	Construction material - production of doors (HDF, MDF, Craftmaster)
Main Product	Doors (HDF, MDF, Craftmaster)
Export %	
Main Export market	Local, Croatia
N° employees	8

According to the EU regulation 305, SMEs active in the wood and furniture industry which are interested in exporting to the EU need to obtain a CE mark for each product. This rule applies only to products in the construction material category. The process of obtaining a CE mark is long and expensive, and involves issuing multiple reports, confirmation documents and certificates, and full time engagement with the certification body.

Specific question regarding the problem:

A small startup company like TDK already faces demands from EU countries for the export of doors for indoor spaces. Obtaining a CE mark is quite an investment for such a small developing firm, so the management structure is seeking practical advice on this particular issue.

-Validity of the CE mark? If a certain type of door (with a detailed specification of materials, parts and dimensions) is tested and approved for CE marking, how many changes and in what percentage (range) are allowed to be made to the product whilst retaining the CE mark for this product (doors for indoor purposes).

ANSWER

Internal doors are not yet obliged to be CE marked.

Outside door and windows have to be marked and detailed instructions of the testing range and families of doors can be found c/o notified labs, like for example Euroinspekt in Croatia.



FURNITURE

QUESTION 6

Partner data

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Expert answering the question

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Name of Firm (SME)	Zenica Economic Development Agency - ZEDA		
Name of Firm (SME)	Laboratory for testing furniture and wood - LIND		
Sector of specialization			
(Furniture, Sawmill, Construction material)	Testing of furniture		
Main Product	-		
Export %	-		
Contact person	Senad Pasalic and Amir Kubat		
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N° employees	9		



EN 14749:2005: Domestic and kitchen storage units and worktops - Safety requirements and test methods (EN 14749:2005, IDT).

6.2.2 Determination of centre of gravity

The centre of gravity of a component or unit shall be taken as the geometric centre of that unit, except in the case of extension elements, where the geometric centre of the usable volume shall be used.

The height of the centre of gravity above the floor shall be measured for cupboards or their

components when installed according to the manufacturer's instructions. Adjustable feet shall be set at their middle position.

Height adjustable components shall be placed in their highest position.

All wall or top hanging units or components thereof are considered to have their centre of gravity more than 900 mm above the floor.

Specific question regarding the problem:

Question No. 1:

Why do we determine the centre of gravity?

For example: we have a kitchen element (storage unit) with one extension element and horizontal storage areas (see photo).

Question No. 2:

How do we determine the centre of gravity of a complex element (see photo) when we know that it can be loaded differently (separately with a different mass)?

Question No. 3:

Do we need to express measurement uncertainty for this determination?



ANSWER

Question No. 1:

To check whether the test is applicable or not.

Question No. 2:

Measure the centre of gravity of the two components separately (drawer and shelf), and determine whether or not the tests are applicable for each component.

Question No. 3:

The standard is not clear on this point (different terms from the ones required by accreditation bodies), but you can still use the tolerance specified in clause 4.3 (+ - 1 mm).



Partner data

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Expert answering the question

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Name of Firm (SME)	Hidden for Privacy
Sector of specialization	Furniture – producer of raw materials (adhesives) to be used in the production of furniture elements
Main Product	adhesives
Export %	N/A
Main Export market	N/A
N° employees	46

Edge banding tapes applied to particleboard edges may exhibit inappropriate adhesion. Adhesion is dependent on the material of the edge banding tape (melamine, PVC, ABS) as well as the type (composition, formulation) of the hot melt adhesive. The problem was that some of the adhesives that were in the process of development did not reach the same level of acceptable adhesion on the edges of particleboards in comparison with some products made by other producers.

Specific question regarding the problem:

The adhesion of the edge banding tape must also be affected by the surface free energy (SFE) of the cured hot melt adhesive, and the compatibility of the adhesive's SFE and its components with those of the substrate. How do you determine the SFE and its components of the cured hot melt adhesive, and what does it tell us about the determined values when compared with some competitors' products which are on the market?

ANSWER

Surface free energy (SFE) and its components may be calculated by various approaches, like for instance the Zisman one, the Neumann approach, the Acid-base approach, etc. It was decided to use the latter one in our calculations. The Acid-based method is based on the determination of the contact angles of various test probe liquids on solid surfaces. The contact angles of the polar and non-polar angles serve as input data for the calculation of the SFE in accordance with the Acid-base (Lifshitz–van der Waals) model.

SFE (γ) is composed of dispersive (LW) and polar (AB) parts, and the polar part is further expressed with the electron-acceptor and (γ^+) electron donor component (γ^-):

$$\gamma = \gamma^{\text{LW}} + \gamma^{\text{AB}}$$
; $\gamma^{\text{AB}} = 2\sqrt{\gamma^+ \gamma^-}$

In order to be able to calculate the above mentioned γ , γ^{LW} , γ^{AB} and γ^+ and γ^- , we measured the contact angles of distilled water (in the Table: Sticni kot tekocine), formamide and diiodomethane on the cured product which was developed by the company, and on some other products on the market.

In the Table below, which shows the measured contact angles, "podlaga" means the substrate, "Lepilo 1" to "ABS" are labels of various formulations under development, "voda" is water, and "formamid" and "dijodometan" are formamide and diiodomethane respectively.

Dedlago	Stični kot tekočine (°)			
Podlaga	Voda	Formamid	Dijodometan	
LEPILO 1	95,4	82,8	56,3	
LEPILO 2	98,1	83,5	59,0	
LEPILO 3	85,6	67,5	26,9	
LEPILO 4	109,7	87,3	54,5	
LEPILO 4a	104,3	92,3	55,4	
LEPILO 5	100,0	87,6	51,5	
MEL. T.	94,0	86,2	65,4*	
DEKOR	87,1	76,5	55,4*	
PVC	101,1	68,4	12,4	
ABS	109,5	90,6	20,3	



	Prosta površinska energija (mJ m ⁻²)				
Podlaga	7 ^{LW}	7 ^{AB}	7 ⁺	7	7
LEPILO 1	30,7	3,9	0,7	5,1	34,6
LEPILO 2	29,2	2,6	0,5	3,5	31,7
LEPILO 3	45,4	4,4	0,8	5,9	49,8
LEPILO 4	31,7	0,8	0,8	0,2	32,5
LEPILO 4a	31,2	5,7	2,4	3,3	36,9
LEPILO 5	33,4	5,8	2,0	4,1	39,2
MEL. T.	25,5	4,3	0,6	7,9	29,8
DEKOR	31,2	3,5	0,3	8,9	34,7
PVC	49,6	0,0	0,5	0,0	49,6
ABS	47,7	4,7	6,3	0,9	52,4

The calculated values of the SFE and its components are shown in the following table:

The main differences between the formulations in the process of development (LEPILO 1 – LEPILO 5) and the products on the market (ME.T. – ABS) were in the (γ^+) and (γ^-) values (in the case of LEPILO 4a and LEPILO 5) which were the most problematic formulations. It is hard to draw detailed conclusions from the data in the table on SFE, but it is certainly clear that some additives should be added (or their quantities changed) in order to influence the pH of the system.

This conclusion was supported by the results of extensive measurements of the adhesion strengths of various adhesive formulations according to the standard EN ISO 4624:2004, and at various temperatures in accordance with the IOS TM 0002/6.



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	Zenica Economic Development Agency - ZEDA
Name of Firm (SME)	Laboratory for testing furniture and wood - LIND
Sector of specialization	
(Furniture, Sawmill, Construction material)	Testing of furniture
Main Product	-
Export %	-
Main Export market	-
N° employees	9
Contact person	Amir Kubat
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Detailed description of the problem:

EN 12520:2010: Furniture - Strength, durability and safety - Requirements for domestic seating.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1022:2005, Domestic furniture – Seating - Determination of stability

EN 1728:2000, Domestic furniture – Seating - Test methods for the determination of strength and durability.

The standard **EN 1728:2012** has been prepared by Technical Committee CEN/TC 207 "Furniture", and supersedes EN 1728:2000.

EN 1728:2012: Furniture - Seating - Test methods for the determination of strength and durability

and Annex

EN 1728:2012/AC:2013: Furniture - Seating - Test methods for the determination of strength and durability.

Specific question regarding the problem:

EN 1728:2012

Question No. 1:

Must all of the test equipment and apparatus (5.1–5.13) for the chair testing be calibrated and have calibration certificates?

6.5 Seat Front Edge Static Load

Apply the specified force using the seat loading pad (5.4) at a point on the seat centre line 100 mm inwards from the front edge of the structure.

For multiple seating units, the seat front edge static load test shall be carried out simultaneously on the same seats as used for the seat and back static load test (6.4). During the test, load the seat(s) that are not being tested with the specified seat load for parts not undergoing test, applied at the seat loading position.

If the seating tends to overturn, reduce the force(s) to a magnitude that just prevents overturning.

Record the actual force(s) used.

Question No. 2:

The value of "the specified force" is not listed/given. What is it?

Also, what does this mean exactly from the point of view of writing reports and ascertaining whether the requirements of the standard are met or not? Please explain...

6.6 Vertical load on back rests

Apply the specified seat load to the seat loading point and maintain for the duration of the test.

Apply the specified downwards static force to the top of the back rest, on the centre line of the back. Apply the force through the seat loading pad (5.4). If it is not possible to use the seat loading pad, apply the force with the smaller seat loading pad (5.5).

For multiple seating units, the downwards static force shall be applied simultaneously on the same positions as used for the seat and back static load test (6.4). During the test, load the seat(s) that are not being tested with the specified seat load for parts not undergoing test, applied at the seat loading position.



If the seating tends to overturn, reduce the downwards static force(s) on the back rest to a magnitude that just prevents overturning.

Record the actual force(s) used.

Question No. 3:

The value of the vertical downward force is not listed/given. What is it?

ANSWER

Question No. 1:

Yes. All the apparatus must have (if accreditation according to EN ISO 17025 is required for this standard) calibration carried out. This does not mean that you may get calibration certificates from a third party. The essential point is that you have to demonstrate the chain traceability of the primary standard materials or samples.

The dimensions should not be a problem (but may not be easy to check, e.g. seat loading template), and the same applies to force.

More difficult is the matter of rubber hardness. Still, nowadays it is not so easy to find material where the hardness is defined in IRHD.

Questions No. 2 and No. 3:

EN 1728: 2012 is a test method standard only. It does not list any sort of loads/force or cycles. These are listed in the requirement standards (e.g. EN 12520, note a misalignment on the ref. standard! EN 16139), where what to look at after the test sequence is also laid down.

In the test reports (according to the various clauses of EN 1728), the load/cycles used should be reported (quoting the requirement standard) and also a pass/fail assessment according to the criteria present in the same standard.



CLUSTERING

QUESTION 9

Partner data

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Expert answering the question

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Name of Firm (SME)	Wood Industry Cluster
Sector of specialization (Furniture, Sawmill, Construction material)	Furniture, Sawmill, Construction
Main Product	Cluster organisation
Export %	-
Main Export market	-
Contact person	Bernard Likar
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N° employees	2



Specific question regarding the problem:

What is the basis of the laws/decrees/regulations etc. for forming the timber network in Styria? You have already mentioned the signing of the "agreement of the Styrian Timber Manifesto" ["Holzbaucharta Steiermark"] in 2005. Is there another basis or law in Styria or Austria apart from the Holzbaucharte? Is there a national/regional action plan, special sectoral program, or strategy?

ANSWER

Styria aims to become a province which sets a European example through its intelligent transition to a knowledge-based production and service society. To do this, it is essential that the theme of innovation remains a central focus in economic strategy to reach the state of "standardized innovation". Only through innovation can competitiveness continue and growth be enabled. "Growth through innovation" is thus the guiding principle of the new Economic Strategy for Styria 2020. At the core of this strategy is the concept of "smart regional specialization".

The strategy of the Wood Cluster Styria is based on the previously mentioned **Economic Strategy for Styria 2020** developed by Land Steiermark, Department 14 – Economic Affairs and Innovation.

The Wood Cluster Styria Strategy, in short:

Holzcluster Steiermark sees its role as facilitating **networking** between business, science and politics, promoting **internationalization efforts** primarily in South-Eastern Europe, and providing **services** for companies in the forestry sector and wood industry. It intends to further develop its fields of competence as an **implementer of ideas** and a **driver of innovation**.

Business fields of the Wood Cluster Styria

Business location development: Increase in R&D ratio, further development of technologies and the securement of the long-term future of the industry with a highly qualified workforce.

Innovation: Monitoring and support for innovation processes in a corporate landscape with a high proportion of SMEs.

Cross-border projects: Initiation and involvement in projects with an international focus, enhancement of corporate competitiveness in export markets.

Sectoral solutions: Development and implementation of innovative business solutions.

Additional important strategies for the wood sector:

- Holzbaucharta (enclosed)
- Strategy "Nachhaltig Bauen und Sanieren in der Steiermark", Sustainable Building and Retrofit in Styria (enclosed)

Part of the sectoral program is in Idwood WP3 Guideline for Wood Industry in Styria.



Partner data

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Country and Region	Romania, Centru Region	

Expert answering the question

Referent partner	POLO TECNOLOGICO PORDENONE	
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Name of Firm (SME)	Hidden for Privacy
Sector of specialization (Furniture, Sawmill, Construction material)	FURNITURE
Main Product	FURNITURE FROM HARD WOOD
Export %	
Main Export market	France, Germany, Italy
N° employees	Between 10-49 employees

The problem submitted by this company concerns the difficult access to European markets because of intermediate companies.

The prices of Romanian furniture could be more accessible to individual customers across Europe if the furniture companies could establish sales offices in the big cities of Europe, and could offer the furniture at affordable prices.

Specific question regarding the problem:

Do you have any examples of policies or instruments in your country that could be used as examples of good practice for the companies that are trying to access new markets?

Could you provide us with some ideas regarding how a small company (or a group of small companies) could enter, for example, the Italian furniture market without intermediate companies? What are the approximate costs of establishing a showroom or a sales representation office in a big city in Italy or Austria?

ANSWER

Generally, access to European markets is managed by distribution channels and depends on the type of product, price range, and the conditions of delivery. Normally, companies have a strategy of selling products through **3 phases:** 1) conditions of sales, 2) sales channels, 3) post-sales (claims). There is no defined policy, **supply and demand drives the market**. Regarding the specific request, sales are normally managed through **agents or distributors**. The agent promotes sales on behalf of the producer in a specific territory, and perceives the percentage of sales, while the distributor is usually already in possession of a showroom and promotes, within the exhibition space, the producer to the final consumer through **e-commerce and web platforms**. It's a promising value chain, able to reach potential customers directly without any intermediates. In this case, the sales strategy could be strongly focused on the customer satisfaction policy.

As for the direct management of the sales in a foreign country, meaning the opening of a showroom, the conditions vary from country to country and in accordance with specific legislation.

For Italy, please visit the website of ITALTRADE Italian Trade Agency www.italtrade.com



LEAD PARTNER Slovenian Forestry Institute, Slovenia

PROJECT PARTNERS

- ► INFORMEST, Italy
- ► Wood Industry Cluster, Slovenia
- ► Technological Pole of Pordenone, Italy
- ▶ Wood Cluster Styria, Austria
- ▶ Regional Development Agency Centru, Romania
- ► Agency for Sustainable Development
- and Eurointegration ECOREGIONS, Bulgaria
- ► Zala County Foundation for Enterprise
- Promotion, Hungary Local Development Agency PINS, Croatia
- ► Development Association NERDA,
- Bosnia and Herzegovina ▶ University of Belgrade, Faculty of Forestry, Serbia

ASSOCIATED PARTNERS

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Ministry of Agriculture and the Environment of the Republic of Slovenia, Slovenia

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