








# ExpandFibre Ecosystem R&D&I focus points on the road towards the Vision 2030

Straw and wood as raw materials						
 Textiles	 Biocomposites	 Packaging	 Lignin products	 Hemicellulose products	 Sourcing & fractionation	 Other fibre and wood products
<ul style="list-style-type: none"> <li>• New, sustainable textile fibres for wearable textiles and nonwovens</li> <li>• Staple fibre analytics and performance testing</li> <li>• New staple fibre applications and post-treatment technologies</li> <li>• Recycling and traceability</li> <li>• Business models to speed up global market entries</li> </ul>	<ul style="list-style-type: none"> <li>• Raw material processing and converting</li> <li>• Material properties</li> <li>• Recycling and end-of-life</li> <li>• Biocomposites containing fibres and lignin</li> <li>• All-cellulose composites &amp; natural fibre polymer composites</li> <li>• Additive chemistry</li> </ul>	<ul style="list-style-type: none"> <li>• New pulp-based plastic-replacing packaging solutions</li> <li>• Tools and processes for designing sustainable packaging</li> <li>• Barriers and binders based on natural polymers</li> </ul>	<ul style="list-style-type: none"> <li>• Lignin fractionation for material applications</li> <li>• Lignin as functional ingredient for thermosetting resins as well as for thermoplastics and bio-composites</li> <li>• Lignin dispersants</li> <li>• Novel methods for lignin functionalization</li> </ul>	<ul style="list-style-type: none"> <li>• Hemicellulosic sugar refining and separation</li> <li>• Xylose, pentoses and furfural as industrial ingredients and platform chemicals</li> <li>• Polymeric hemicellulose as industrial ingredients and platform chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable, low emission agricultural residue supply chains and networks</li> <li>• New fractionation technologies for processing of agro-residual and woody raw materials</li> <li>• Process side-stream utilization</li> </ul>	<ul style="list-style-type: none"> <li>• New materials based on pulp fibres and wood for high-volume applications</li> <li>• Novel chemistry for pulp fibre and wood modification</li> <li>• Functional structures including hybrid materials</li> <li>• Advanced 3D and 4D processing methods</li> <li>• Fibre and specialty cellulose products from pulp, including MFC, MCC and chemically modified cellulose</li> </ul>
<b>Cross-cutting topics</b> <ul style="list-style-type: none"> <li>• Replacing plastics and fossil-based materials</li> <li>• Digitalisation &amp; measuring</li> </ul>			<ul style="list-style-type: none"> <li>• Emerging technologies</li> <li>• Sustainability assessment</li> </ul>		<ul style="list-style-type: none"> <li>• Design for circularity</li> <li>• Piloting and test-beds for new applications</li> <li>• Following regulatory environment</li> </ul>	

## Vision for 2030

- Investments in commercial production of new bioproducts (textile fibres, biocomposites, other bioproducts, etc.)
- New bioproducts available to the markets with significantly **lower carbon footprint**
- Sales and/or out-licensing of **new technologies** related to new bioproducts
- **Professionals** trained for new bioproduct businesses
- **Sustainability awareness** increased throughout the value chains