



Innovation in the wood construction sector

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Technical Working Group Innovation and Research

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Types of wood innovations



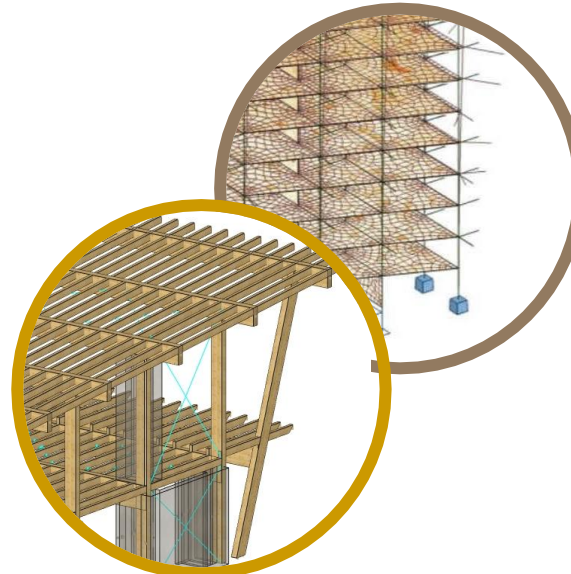
MATERIALS

- Tree species
- Wood characteristics
- Wood modification
- Supply / quality



PRODUCTS

- Engineered Wood Products
- Processing technology
- Hybrid products
- Connectors / Kits



SYSTEMS

- Offsite prefabrication
- Architectural design
- Modular / serial
- Resource efficiency
- Circularity



BUILDINGS

- Multistorey buildings
- Building functions
- Building performance
- Life cycle analysis



Innovations in wood

Challenges for surviving the 'valley of death'

Main challenges

1. Technical factors

- Feasibility
- Performance
- Industrialization

2. Economic factors

- Company size
- R&D capacity
- Cost competitiveness

3. Knowledge factors

- Education, skills, personnel
- IP, patents, exploitation
- Digital tech, data, AI

5. Finances

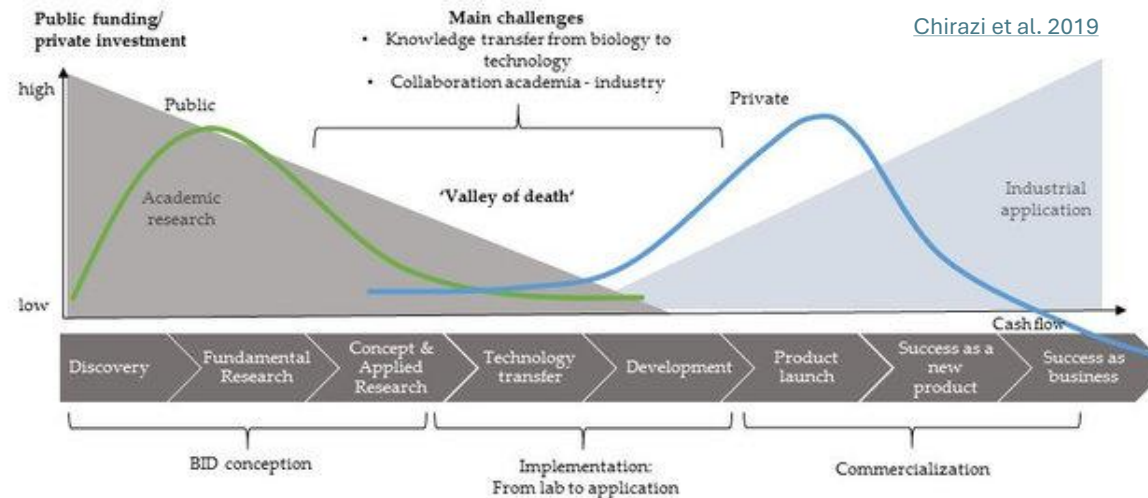
- Investments
- Scalability
- Risk/confidence

4. Acceptance

- by target groups: urban planners, architects, civil engineers, investors, society

6. Regulatory

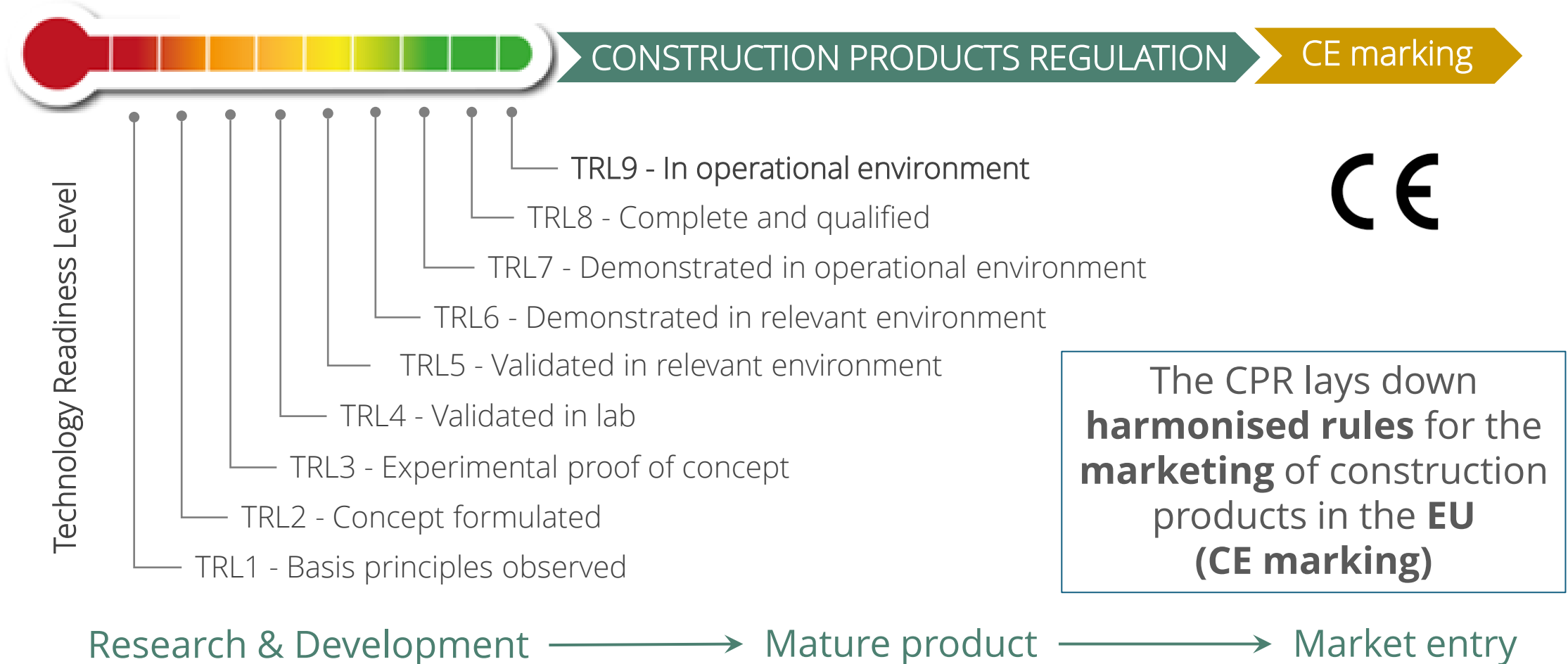
- Standards & regulations for construction





Innovations: From Lab to Market

CONSTRUCTION SECTOR, including wood construction





CEN technical committees for wood construction



Built environment

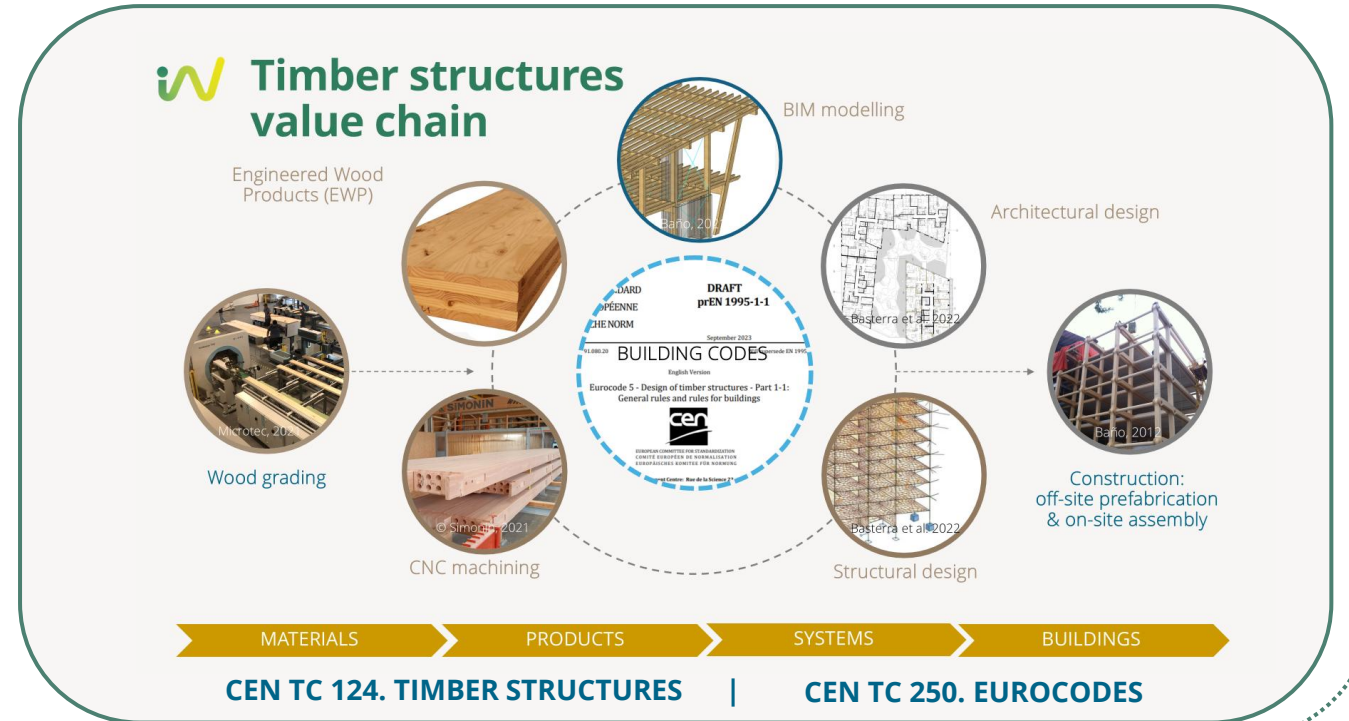
- CEN TC 465. Sustainable cities and communities
- CEN TC 346. Conservation and cultural heritage
- CEN/WS VARCITIES. Visionary nature-based actions for health, wellbeing & resilience in cities

Building sector

- CEN TC 442. Building information modelling (BIM)
- CEN TC 350. Sustainability of construction works
- CEN TC 193. Adhesives | CEN TC 185. Fasteners
- CEN TC 371. Energy performance of buildings | CEN TC 156. Ventilation for buildings
- CEN TC 88. Thermal insulation materials | CEN TC 126. Acoustic properties of buildings

Wood construction

- CEN TC 175. Round and sawn timber
- CEN TC 112. Wood-based panels
- CEN TC 38. Durability of wood and wood-based products





Construction Products Regulation (CPR)

CONSTRUCTION SECTOR, including wood construction



How? Two pathways

MATURE PRODUCTS



INNOVATIVE PRODUCTS



European Technical Assessment (ETA)


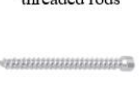























Declaration of Performance > CE marking



Wood innovations with ETA certificate

844 ETAs in 9 product groups

- Connectors
- Structural wood products
- Thermal insulation products
- Fixings
- Wood-based panels
- Building kits
- Curtain walls
- Floorings
- Wall/ceiling finishings and partitions

PA 13. Timber structures: Connectors						
Nailing plates  ETA 22/0002	Screws and threaded rods  ETA 11/0425	Dowel-type fasteners with resin coating  ETA 21/0778	Screws for use in nailing plates  ETA 04/0013	Glued-in rods for timber connections  ETA_19/0752	Plywood dovetail for CLT  ETA18/0254	Other  ETA 23/0330
PA 13. Timber structures: Structural wood products						
CLT- Solid wood slab elements  ETA 06/0138	Dowel jointed solid wood slab elements  ETA 18/0960	Prefabricated wood slab/wall element  ETA 15/0760	Composite wood-based beams  ETA 23/0669	Load-bearing skin panels  ETA 18/1014	Beam or wall made of timber logs  ETA 11/0219	Hardwood GLT  ETA 18/1018
PA 4. Thermal insulation products				PA 33. Fixings		
Insulation products made of vegetable fibres  ETA 17/0622	ETICS for the use on timber frame buildings  ETA 16/0997	Acoustic insulation made of biobased fibres  ETA 07/0214	ETICS for wall made of timber  ETA 23/0811	Minerally-bonded boards made of wood chips  ETA 19/0427	Anchor devices  ETA 21/0260	Fasteners for fixing of ETICS on timber constructions  ETA 20/0670
PA 14. Wood based panels		PA 34. Building kits		PA 9. Curtain walls		PA 19. Flooring
Prefabricated load-bearing skin panels and SIP panels  ETA 23/0526	 ETA 22/0041	Timber building kits  ETA 23/0669	Load bearing steel-wood roofs  ETA 15/0473	Wood composite panels for façades  ETA 23/0631	Terrace decking kit  ETA 23/0919	Underlay of granulated PU foam and cork  ETA 23/0077
PA 21. Wall/ceiling finishings and partitions						
Soundproofing boards  ETA 21/0944	Composite panels for indoor wall/ceiling  ETA 23/0631	Boards from recycled beverage cartons  ETA 21/0912				



Wood innovations with ETA certificates

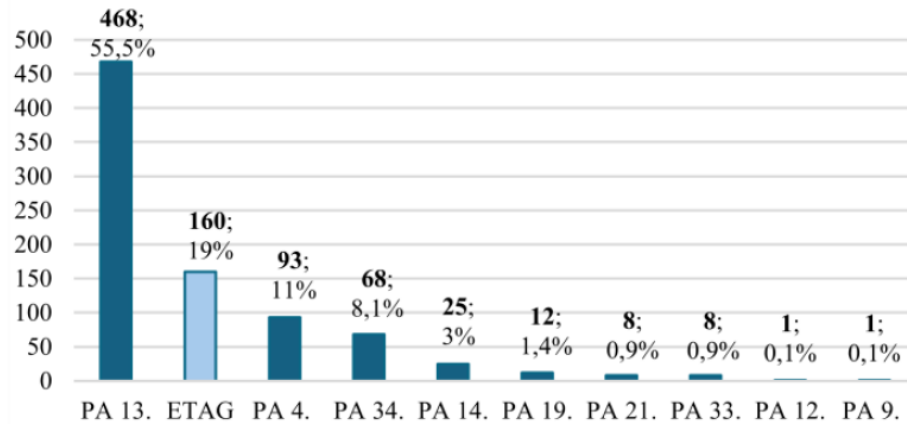


Figure 4. Classification of innovative products in wood construction

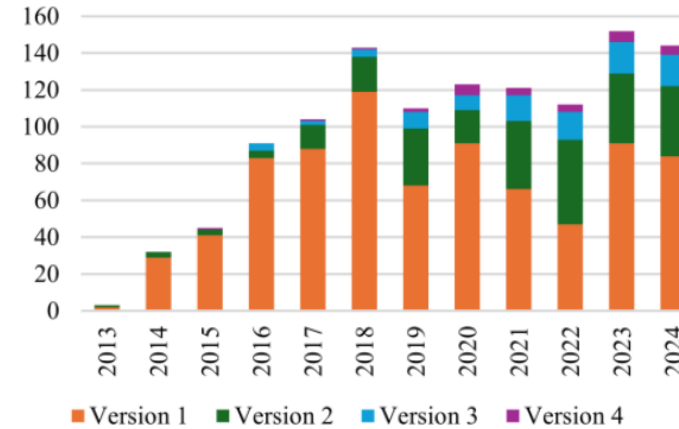


Figure 5. Number of issued ETA versions

844 products/systems identified

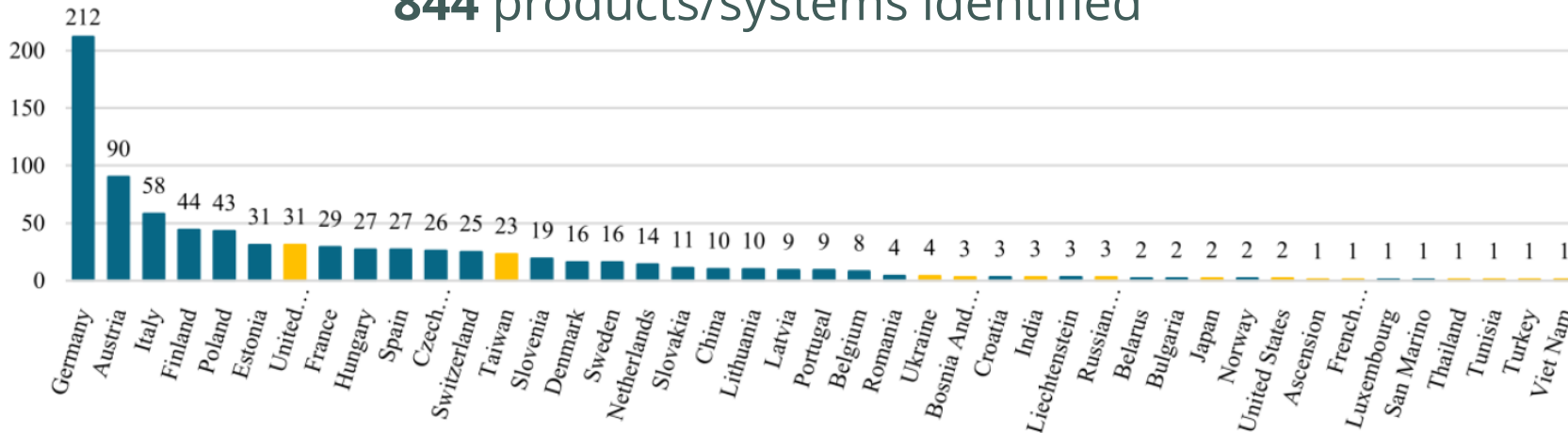


Figure 6. Number of issued ETAs per country.



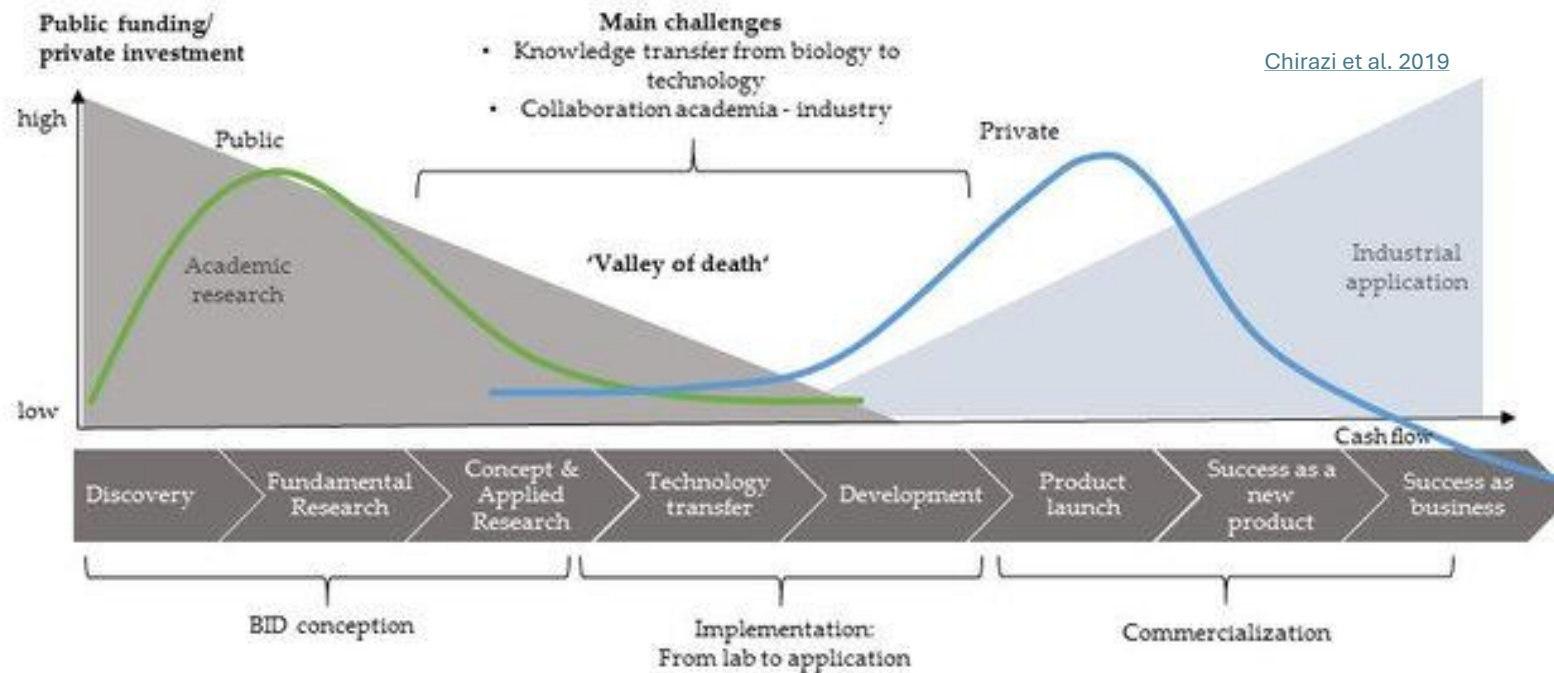
Innovations in wood

Challenges of surviving the 'valley of death'



Vivas et al. 2011

We need creative thinking to bridge the valley!



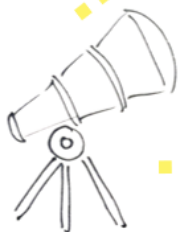
But we are very good in bridge building, so we surely will find the way!



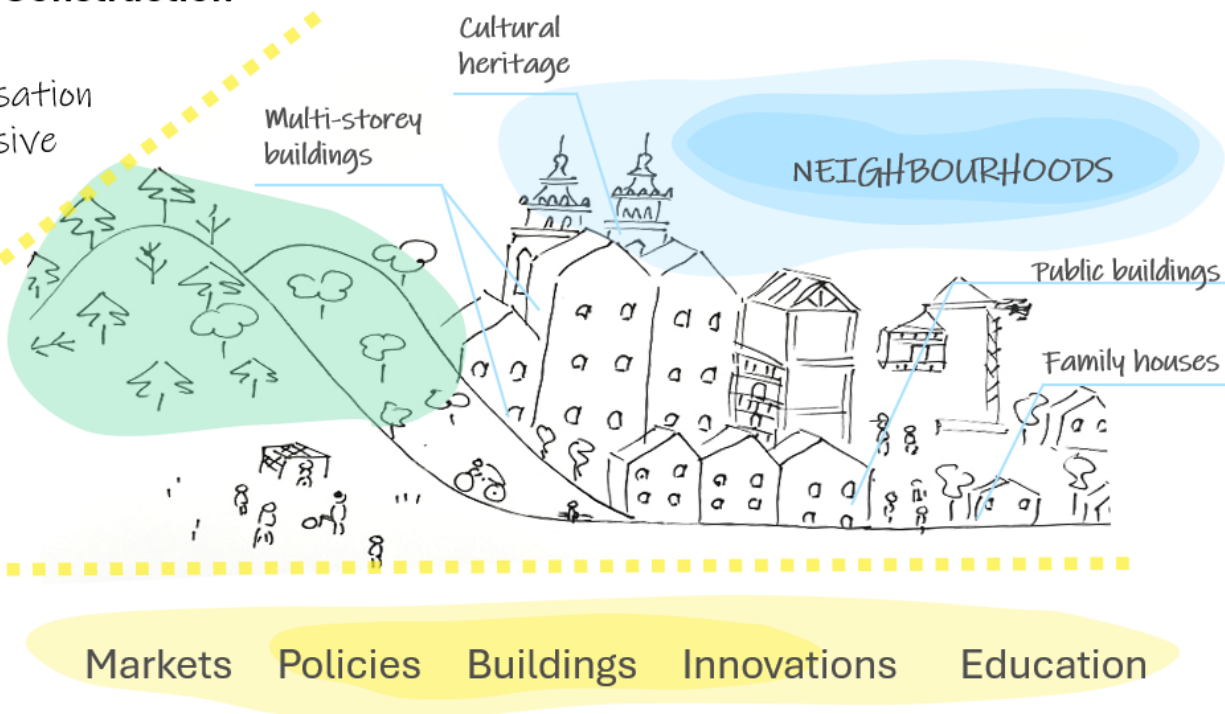
European Wood Construction Observatory EWCO

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for the decarbonisation of beautiful, inclusive and sustainable neighbourhoods



EWCO



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WOOD STOCK





CONNECT | SHARE | INFLUENCE