



# CSFE education, upskilling, and training

**Through timber construction, there is a future in which forests can support cities and, in return, cities can support forests.** As the global population increases, particularly in cities, the construction sector is expected to exponentially grow in order to accommodate the demand for housing and other infrastructure. Current construction techniques are a significant contributor to the global climate crisis and urgently need to be transformed. By substituting the carbon-intensive materials commonly used in construction with forest economy biomaterials, such as wood and bamboo which sequester carbon, we can create buildings with reduced carbon emissions. However, this timber construction industry is still in its nascency and there is a need to address its market gaps and leverage opportunities to accelerate its development and increase its uptake.

**These interventions for the mass timber construction industry can be segmented into seven main categories of solutions that affect the value chain and enablers of the ecosystem.** Through various internal and external discussions, Climate Smart Forest Economy Program (CSFEP) has categorized potential solutions as relating to i) Finance and insurance; ii) Product and process certifications; iii) Communication and awareness building; iv) Timber knowledge ecosystem; v) Forest management and timber policies; vi) Value chain linkages; and vii) Timber-based real estate. The proposed solutions can be executed as for-profit, philanthropic, or blended ventures, with the services developed as individual offerings or paired with complementary services in a single offering. Additionally, while some solutions may be set up as a free-standing entity, other solutions may be similar to services provided by existing actors in or adjacent to the CSFE sector. In the case of the latter, it may make sense to approach these existing providers as potential partners to find a suitable and effective home for needed services.

## TIMBER KNOWLEDGE ECOSYSTEM

**One of the challenges faced in the mass timber construction and larger climate smart forest economy (CSFE), is a skills shortage which hinders the development of these industries.** While sustainable practices focus on maintaining the quality of natural resources, climate-smart practices aim to maximize the socioeconomic and ecological benefits of these resources as well. Across the value chain, CSFE actors frequently lack the skills and knowledge to ensure climate-smart practices. These activities include forest and plantation management, processing techniques, and designing and building with timber. Additionally, current educational systems do not offer the courses and training necessary to prepare people for jobs in the CSFE. There is a need for governments, ministries of education, and academic institutions to provide this education and mechanisms for CSFE enterprises to access it, particularly in nascent markets in the Global South.

**Providing dedicated CSFE education, upskilling, and training can increase the capacity and capabilities of CSFE actors and maintain access to and awareness of the latest information and innovations across the value chain.** The provider of these services would have three main objectives for the mass timber industry:

- Create knowledge exchange networks in the built environment for mass timber
- Support policy interventions within relevant ministries of the built and natural environment
- Inform building codes as needed based on relevant knowledge
- Support mass timber programs/research areas at higher institutions of learning

**Educational facilities around the world have already begun developing educational programs to address this knowledge gap in the market but these courses are not yet commonplace.** Despite the intersection of the CSFE with well-developed value chains such as forestry, timber processing, and construction, these industries have limited use, training, or exposure to mass timber construction. In South Africa a study found that local contractors have little knowledge and exposure to engineered wood products and view timber construction as elite and aspirational.<sup>1</sup> This challenge is particularly true for the Global South. However, there has been industry progress in developing mechanisms for training and upskilling architects, engineers, and developers through higher education. For example, the University of Pretoria in South Africa has partnered with York Timbers, an integrated forestry company, to grow timber construction research and industry knowledge in the country as they've identified the need for such knowledge. Other tertiary institutions have also developed programs to address the education gap for the mass timber industry such as the TallWood Design institute platform from Oregon State University and University of Oregon which architecture, structural engineering, and wood science to advance mass timber.<sup>2</sup> And the Mississippi State University's proposed innovative 'Forest Strong. Timber Solutions for Disaster Resilient Coastal Development' course. There is an opportunity to support these recognized and well-resourced institutions to build the CSFE skills needed in the industry.<sup>3</sup>

**The following activities will be needed in order to establish an organization that will provide a knowledge exchange network and develop a curriculum for CSFEs:**

- Foster and create opportunities for dialogue between key stakeholders
- Develop a knowledge exchange network and culture among and between relevant actors
- Identify common areas of funded research for actors to pursue
- Develop mechanisms for these research areas to then become the basis for curriculum content

If you would like to know more about the type of education services provided, you can reach out to [TallWood Design Institute](#) and [Master in Mass Timber Design](#).

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<sup>1</sup> Greyling, C., Rethinking the making of our buildings: A timber construction research and skills development facility in the Pretoria CBD, Accessed: 2022

<sup>2</sup> TallWood Design Institute, accessed: 2022

<sup>3</sup> Mississippi State University, Mississippi State one of five universities to receive national award for architectural timber course, 2022