

THE FUTURE IS BIO-BASED

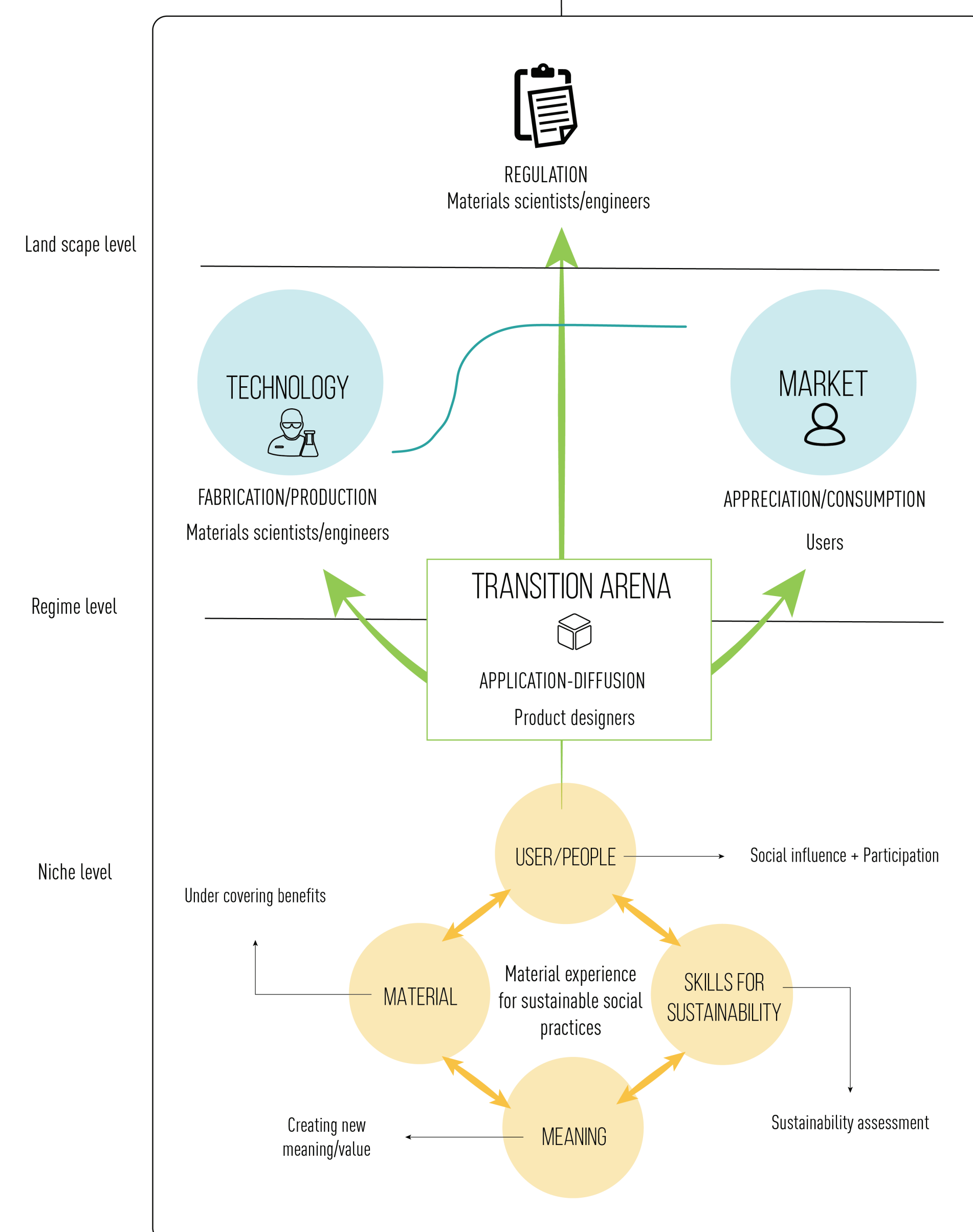
A sustainability transition of biomaterials lead by users

A bio-based future where biomaterials are part of everyday life is the vision. Achieving this scenario requires changes in socio-technical systems by cutting non-renewable materials and redefining cultural and behavioural dynamics in the production-consumption value chain.

This research tackle how the user experience with materials can be used as a driver in the biomaterial transition. Several theories related to materials, diffusion of innovations, and sustainability transition address the challenges and potentials of the biomaterial transition separately. However, there is no integrated approach.

A bottom-up approach is proposed where niches are transition arenas for radical innovations that must be connected and empowered to scale them up as disruptive innovations creating a new regime. The results broaden the perception of biomaterials as disruptive innovations. Thus, deepening in their role in shaping social practices redefine the material culture towards a sustainability transition.

User concept vision:
What users envision is an evolution of sustainability as added value to a norm.

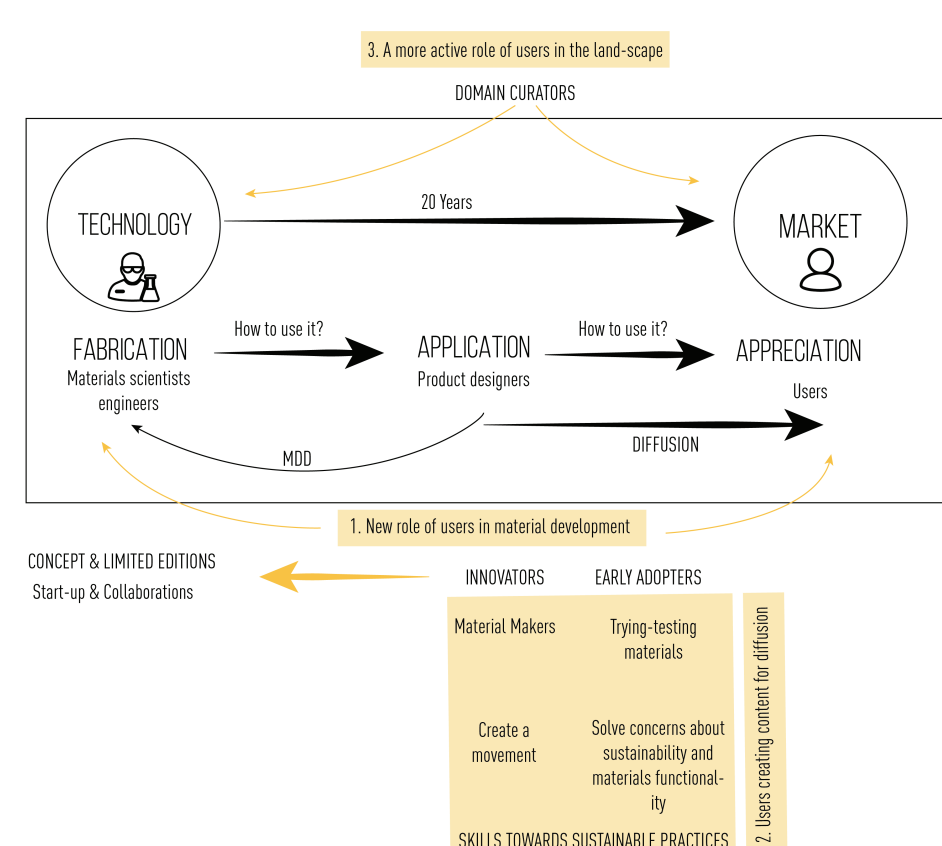


Material experience for sustainable social practices is a user-centred approach that frames patterns of change in the relation users, skills towards sustainability, material and meaning. This material experience for sustainable practices develops in relation of a social journey of adoption and diffusion of biomaterials as radical innovations. This connection allows to scale-up initiatives able to break lock-in patterns of the actual regime in material development, product design and policy.

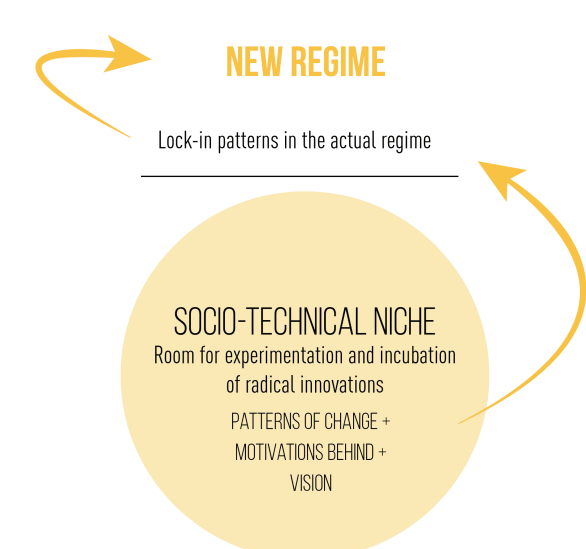
Transition arenas with a focus on users can develop open biomaterial processes and train sustainable skills. This user-centred approach occurs in diffusion/adoption cycles based on social influence where people generate content to teach and spread the new material meaning and developed skills.

User & Biomaterial transitions

In the context of a linear material development from technology to market. Three dynamics between users and biomaterial were found as pattern of change: New role of users in material development, Users creating content for diffusion, and A more active role of users in the land-landscape. Patterns of change have the potential to destabilise the established regime, but they need to be supported.



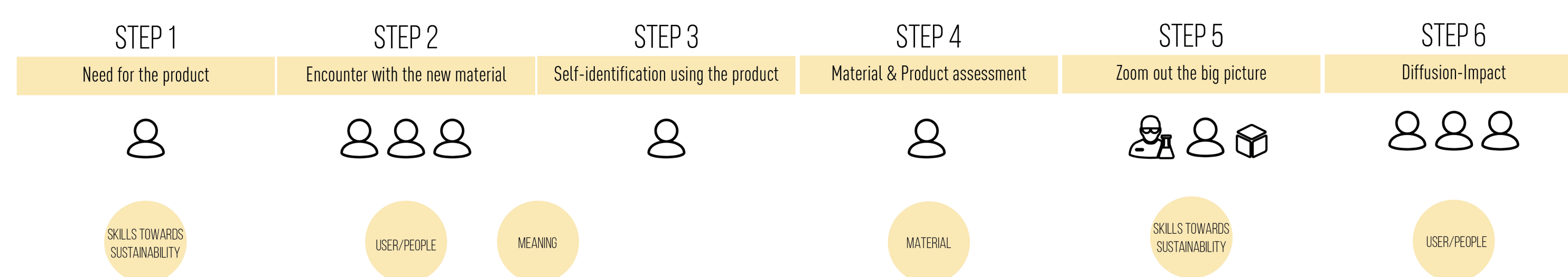
Empowering biomaterial niches



Supporting the biomaterial transition is a process that capitalise the patterns of change growing as disruptive niches in the actual regime to break the lock-in patterns that keep the regime unable to transit to a more sustainable future.

A user journey with biomaterials

A user journey with biomaterials was outlined based on the 15 stories written for the users in the group session. In total 6 steps were found to uncover motivations behind the disruptive innovations in the niche level. This journey is applied in adoption and diffusion cycles towards the biomaterial transition.



The transition to a bio-based future is shaped in a conversation place for co-creating and co-producing biomaterials based on material experience for sustainable social practices

The user experience with materials can accelerate the biomaterial transition creating a frame of user-centred approach. By settling transition arenas where people (more than users) can find and co-create material meanings and new social practices in their experience with bio-based products.



Alejandra Celis Vargas

The future is bio-based: Towards a sustainability transition of biomaterials lead by users

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Strategic Product Design

Committee

Prof. dr. Hultink, H. J.
 Dr. ir. Van den Hende, E. A.

