Materials-as-a-Service

World Resources Forum 2023, Geneva
Session: Global and regional circular economy perspectives
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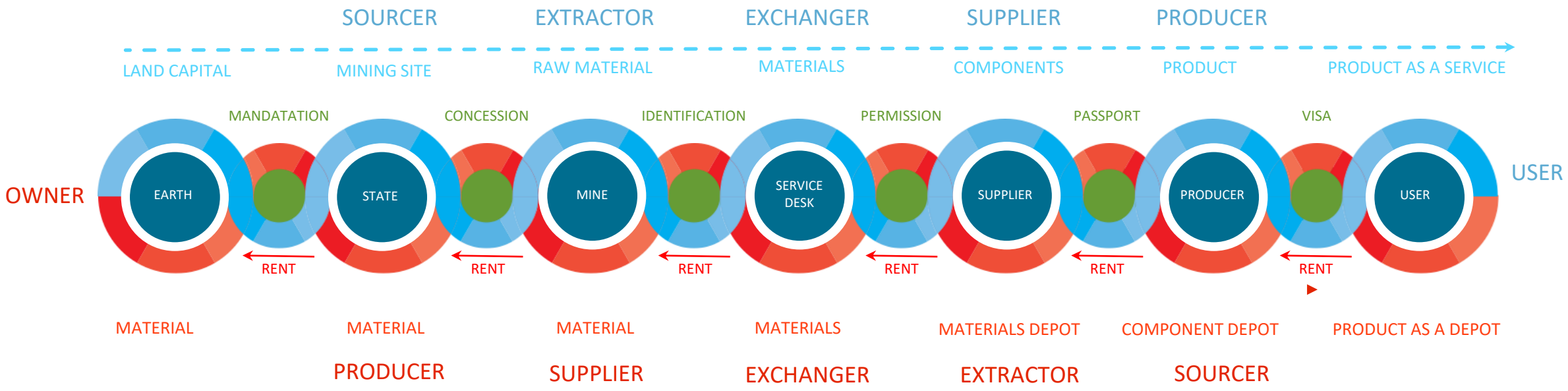
turntoo

CHATHAM HOUSE

Het Groene Brein

AFRICAN CIRCULAR ECONOMY NETWORK

Materials-as-a-Service – Our Vision



Rau, Oberhuber, Material Matters 2016

Materials-as-a-Service – potential benefits

Society at large

Contribution to transparent and accountable mineral resource governance – Maas models would allow governments and society more broadly to retain control over the natural resources

Incentives for stock management and circularity – enforcing circularity along the value chain, reducing waste, improving resource efficiency, promoting new product innovation

Mineral Extracting Countries

Addressing the 'resource curse' - MaaS offers an alternative to the traditional model of 'linear' extractive-led growth

Royalty payments can be used to fund socio-economic development programmes - in line with just transition mechanisms

Mineral Importing Countries

Addressing chokepoints and price volatility of materials needed for the energy transition – amounts of available primary materials smaller than the demand requirements

Win win partnerships with African countries – implementing high ESG standards and local value creation

Mining Companies

Potential to extend value extraction beyond mining activities ("empty mines") MaaS model would allow to build and manage material stocks

Current Scientific Discussion

Material-as-a-Service:

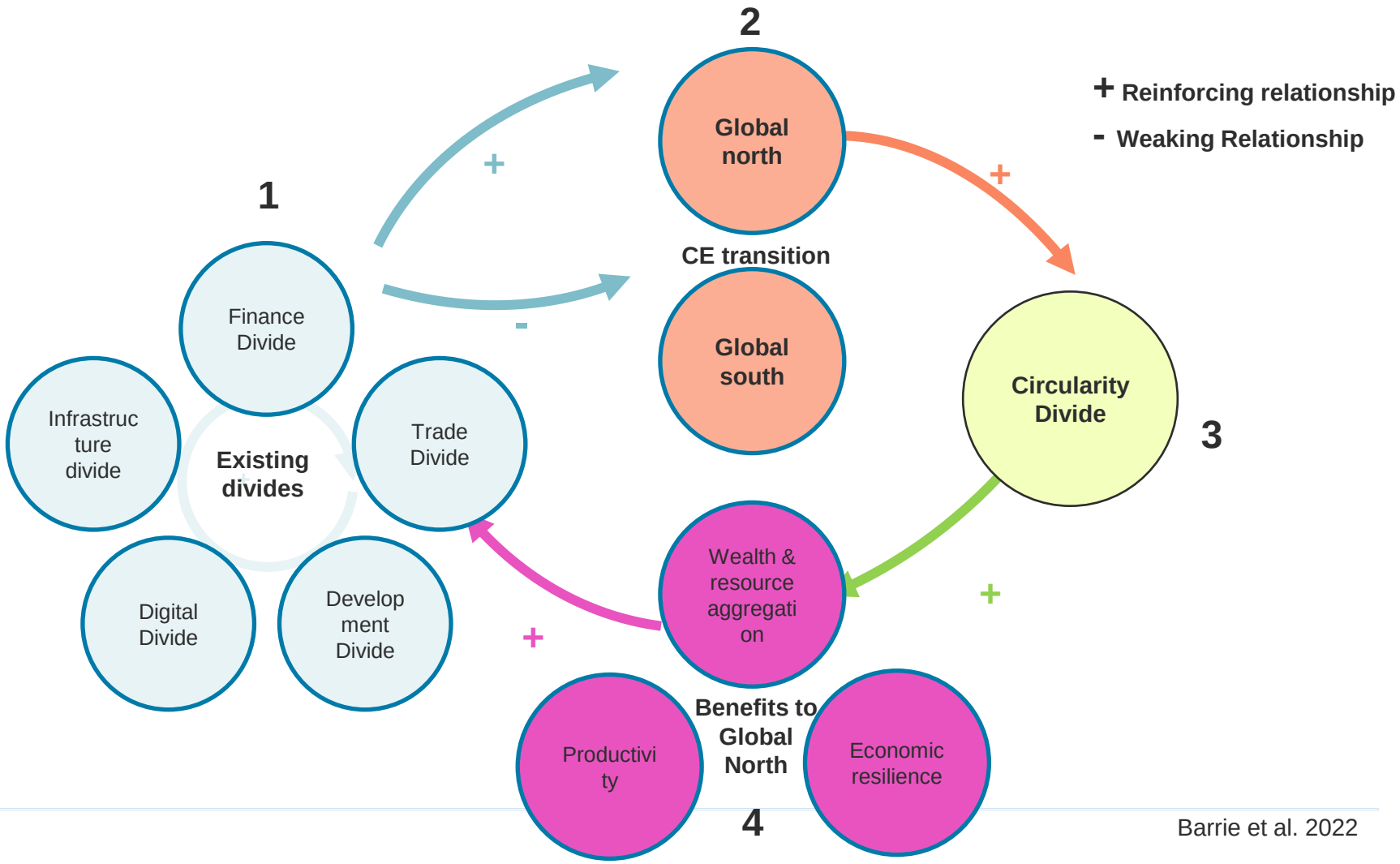
- Dung, T.N. et al. (2022) Profitability through Material as a Service: A case study of a marine plastic supplier. MA Dissertation. Western Norway
- Engelman, A. et al. (2021) Developing the material-service system concept: a case study of steel industrial drums. Cambridge University Press
- Aurisiccio, M. et al. (2019) Material-Service Systems for Sustainable Resource Management, *Ecodesign and Sustainability*. Springer
- Hagan, Andrew et al. (2019). The license to mine: Making resource wealth work for those who need it most. *Resources Policy*.
- University of Applied Sciences
- Rau, Oberhuber, Material Matters (2016), Amsterdam

Just Transition & circularity:

- Schröder P. (2020) Promoting a just transition to an Inclusive Circular Economy. Chatham House Research Paper.
- Barrie et al. (2022) The circular divide: What is it? And how do we avoid it? *Resources, Conservation and Recycling*.

The circularity divide – a reinforcing mechanism

If the circularity divide is to be addressed, it is necessary to move beyond the narrow political framing of the transition being one of opportunity for building domestic resilience and economic competitiveness, to one which recognizes the need to address global inequities as well as the inherent interconnectedness of the global economy.



Barrie et al. 2022

Just transition to an inclusive Circular Economy

- Considerations of **justice and social equity** are as important for the circular economy transition as they are in the contexts of low-carbon transitions and digitalization of the economy.
- Many **social and political issues have so far been neglected** in planning for the circular economy transition.
- A just transition framework for the circular economy can identify opportunities that reduce waste and stimulate product innovation, while at the same time contributing positively to sustainable human development.
- **Recognize rights to resources** and resolve competing development interests through participatory processes
- **Rectify existing inequities at an international level** between countries, and mitigate emerging conflicts between countries through collaboration and support mechanisms


Research Paper

Patrick Schröder
Energy, Environment and Resources Programme | April 2020

Promoting a Just Transition to an Inclusive Circular Economy

Challenges and key research questions

1. What are the governance mechanisms and traceability protocols necessary to ensure the responsible and sustainable use of resources through Materials-as-a-Service arrangements?
2. How can corporate resource procurement systems be re-designed to support MaaS and promote the transition to more circular business models?
3. How will the rents generated by MaaS be managed in a transparent and accountable manner, with the objective of maximizing the benefits to the local communities and the host country?
4. How can Materials-as-Service be facilitated by digital product passports?
5. What government policies and incentives will be necessary to enable MaaS models?
6. What are key materials value chains to start MaaS models? E.g. Aluminium-as-a-service?