



“Socio-environmental assessments and monitoring may facilitate the identification of sustainable business models, by internalizing the ecological and social costs, which are usually left out from economic calculations.”

-Holger KUHLE, Jorge GÓMEZ-PAREDES

Image Source: Intricate imbrication of manufacturing plants and dwellings are typical of situations of rapid development, pressuring existing planning and governance frameworks, often with high social and environmental costs that have added in the past decade. Here an aerial view of the surroundings of Surabaya, in the East of Java island in Indonesia, in 2010. Image by Nicolas J.A. Buchoud, all rights reserved ©.



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Circular value chains must enable social and ecological due diligence

The world continues to be dominated by a linear economy that is based on a constant extraction of natural resources, and on intricate global production networks that are disproportionately geared to meet the demands of the Global North. For this insatiable economic system to operate, evermore land, water, minerals, fossil fuels, and sequestration pools to absorb its associated emissions, are required. Hence, the prospect of maintaining, let alone increasing, human prosperity based on an indefinite growth of a linear economic system is not realistic; It is incoherent and beyond

planetary boundaries. Such a system cannot be sustained in the long term and this impossibility is becoming increasingly clearer. The signs are everywhere - non-renewable resources are becoming scarcer and more expensive, the marginal costs of new production are rising in contrast to the cost of maintenance and repair, and the energy return on investment for non-renewable energy resources is decreasing, among many other trends.

A circular economy (CE) transition may offer a way out of this unsustainable situation. This would involve implementing a system that interconnects suppliers in multiple production and consumption chains, through “reverse supply chains”. These would maintain energy and materials extracted from the environment within the economy for as long as possible, thus addressing the pressing task of conserving natural resources. CE enables producers, investors, and consumers to propose answers to the main question raised by the Club of Rome in the 1970s: How can the finiteness of extractable resources, the basic material needs of a growing human population, and seemingly infinite consumer demands be reconciled? In fact, CE challenges this question by shaking up the prevailing economic paradigm. CE can be a major game changer for sustainability. Enabling the circulation of materials and energy requires the integration of production routes and the traceability of products as well as of end-of-life products as they move through the economy. All of these demand detailed monitoring along entire value chains.

Nonetheless, a CE may not be sustainable per se. While a global CE would, in principle, reduce virgin material extraction and waste, we must reflect on the impact of circularity on other resources (e.g., freshwater) and on environmental sinks (e.g., the atmosphere and oceans). What would be the net effect on greenhouse gas emissions? Would emissions effectively be reduced in a CE, even when products that once traveled across the globe travel again, at the end of their lifetime, in order to close the loop? Emissions must be considered in recycling, recovering, and other CE-related processes. Additionally, will CE reduce consumerism? To what extent could CE grow within “planetary boundaries”?¹ Finding answers to all these questions will depend on what is monitored.

Accordingly, the sustainable implementation of circularity principles will require effective monitoring of environmental and social (e.g. in relation to the quality and distribution of jobs) impacts across global supply (including reverse supply) chains. The issue of due diligence in global supply chains has increasingly taken front stage in some countries. Nevertheless, it still mainly relates to issues of human rights violations and other social standards. The ecological dimension has less of a focus, except when it spills over to aspects of human rights. Yet, the mounting scientific evidence of biodiversity loss, the acidification of oceans, and many other ecological pressures highlight the urgent need to address the ecological dimension with equal importance and urgency.

Transforming the linear economy into a CE requires a systemic approach that convenes industries and stakeholders with a view to exploring intersections between production processes and across value chains, in a way that allows for material and energy flows to be traceable. Ergo, the prospect of a CE could incentivize the monitoring of environmental impacts across global value chains in a more systematic way. All in all, the CE can be a major leverage point for addressing the challenge of mainstreaming social and environmental due diligence, as a key aspect for ensuring the fulfillment of a sustainable economic system. But, are we moving in that direction?

After the global financial crisis in 2008, the share of supply chain trade fell slightly and has stagnated since. The current situation, in the wake of the COVID-19 pandemic, has also brought about shifts and declines in the interconnectedness of global supply chains. However, it is too soon to speak of new trends in the integration of global value chains with any statistical rigor. It is thus worthwhile to look retrospectively at recent trends. The share of trade within supply chains in total world trade was just under 40% in 1980, but more than 50% in 2007. Then, following the advances in information and communication technologies, falling transportation costs, and the dismantling of trade barriers, there has been even more integration. From “2005 to 2017, the amount of cross-border bandwidth in use grew 148 times larger”.² This is a torrent of information traveling along digital pathways, some of which reflects companies interacting with

foreign operations, suppliers, and customers. Furthermore, Artificial Intelligence and the Internet of Things open new technological possibilities for a fine-grained integration of production lines that enable the trade of end-of-life products and raw materials. These are areas that need to be tackled to consider broader policy initiatives and to explore new types of business models. Above all, they are useful to identify opportunities to monitor social and ecological impacts. Until then, value chains remain linear and unsustainable.

In short, a sustainable circular economic system will unfold when both socio-environmental and economic benefits materialize. Socio-environmental assessments and monitoring may facilitate the identification of sustainable business models, by internalizing the ecological and social costs which are usually left out from economic calculations. This implies that a CE could further develop its potential as a driver of sustainability, by using its influence to include an effective monitoring of socio-environmental impacts.

References:

1. Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., ... & Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), 1259855
2. Lund, S., Manyika, J., Woetzel, J., Bughin, J., & Krishnan, M., (2019). *Globalization in transition: The future of trade and value chains*. McKinsey Global Institute.