VTT Technical Research Centre of Finland

Radical sustainability from Global South

Bhatia, Riina

Link to publication

Title: Radical sustainability from Global South

Author: Bhatia, Riina (VTT Technical Research Centre of Finland, University of Helsinki), riina.bhatia@vtt.fi

Outline

Innovations and technologies are set to play a key role in sustainability transformations. That is, a radical transformation to a more socially and ecologically sustainable society. Yet, perspectives on sustainability transformations and how to reach them vary greatly. Mainstream Western approaches prioritise green growth and technological innovations for decarbonisation and biodiversity conservation. However, alternative understandings of innovation and technology are gaining ground, particularly in response to the question of whether economic growth can be decoupled from CO2 emissions and material consumption. This entry explores alternative perspectives on innovations, highlighting concurrent streams of sustainable innovations emerging from post-development and post-growth movements in the Global South, which challenge the dominant Western models of sustainability and sustainable development that is heavily reliant on technological optimism and innovations for profit. In fact, alternative understanding on technologies and innovations are based on principles of conviviality, pluriverse and grassroots to create a more sustainable and inclusive society and approach innovations from more-than-technology perspectives.

Conceptual overview and discussion

The escalating climate and environmental destruction underscore the urgency of addressing the unsustainable practices of overconsuming societies. Consequently, the pursuit of economic growth has been widely criticised, leading to debates about the need for a shift from GDP-driven growth to green growth, or more radically to a well-being driven steady state and even degrowth economies, generally referred as post-growth. The argument for post-growth transitions follows from an understanding of social metabolism, where economic growth as a material process extracts natural resources and energy into products, services, buildings, food, energy, and mobility, which are all needed for (capitalist growth-based) societies to function. In overconsuming societies this social metabolism exceeds planetary boundaries, and such alternatives for it are sought.

Mainstream socio-technical visions for sustainability advocating for green and inclusive growth with investments in sustainable innovations such as renewable energy and low-carbon technologies are problematic for two main reasons. Firstly, although technological innovations are crucial for decarbonising societies and transitioning to less fossil-intensive energy sources, they fail to address increasing demand for natural resources needed for high-tech solutions and resulting rebound effects. Secondly, investments in research and development have historically been justified by economic growth. This is problematic premise for sustainability solutions, as growth makes it even harder to decouple emissions and material consumption.

Alternative understandings of innovation and technology from the Global South provide a critique of Western development and sustainable socio-technical visions (such as sustainable development goals and ecomodernism), highlighting the need for systemic perspectives on capitalism as the root cause of environmental destruction and social inequality. In fact, post-developmental and post-growth innovations from Global South present an alternative to the hegemonic Western-style sustainable socio-technical transformation by providing a perspective on capitalism as the root cause for environmental destruction and social inequality. Alternatives arising from Global South emerge from

development critique where deterministic (sustainable) techno-optimism as solution to sustainability challenges is disregarded. These alternatives are grounded on strong relational (meaning that everything is co-constituted in and through relations) and socionatural ontologies (meaning that society and nature are seen intrinsically inseparable), presenting views to new understandings of sustainable innovations from post-colonial perspectives, and emphasising more-than-technological solutions, e.g., social innovations. They have mostly emerged from indigenous cosmovisions and peasant groups, and represent a radical transformation away from Western, deterministic capitalist development. While these alternative understandings of innovation and technology have some differences, they are characterised principles of reciprocity and interconnectedness, more-than-human relationships, place-basedness, inclusivity, ecological sustainability and commons/community type of organisation and ownership models.

Application: The Matrix of Convivial Technology

The Matrix of Convivial Technology (MCT) by Vetter is a technology assessment tool from a post-growth perspective. It is developed based on the principles of degrowth, that is the planned descaling of social metabolism, and it emerges from post-developmental critiques to technological determinism and Western development paradigm. MCT is a tool for radical transformation, and it highlights that societies and technologies shape each other reciprocally. Ivan Illich's concept of Convivial Tools has inspired this literature.

The MCT helps to overcome dichotomy over techno-optimism and pessimism, and it is based on five dimensions; relatedness, accessibility, adaptability, bio-interaction and appropriateness, which help to assess technologies' sustainability from a holistic perspective. **Relatedness** refers to how technologies relate to the surrounding environment, more-than-human actors and how they shape relationships between people, but also on whose knowledge has been utilised in technology development. **Accessibility** refers to the ability to use or build technologies and access to material and immaterial resources needed for that. Here questions on who owns and produces technologies are important. **Adaptability** refers to the ability to adapt technologies to rising needs, but also to the ability to avoid certain technologies. Autonomy to decide whether to use or not use certain technology and still be part of society fully is seen important. **Bio-interaction** dimension examines ecological impact of producing technologies as well as the ecological impact of its use. Convivial technologies aim to be environmentally less harmful and respect the ecological cycle. **Appropriateness** examines the place-based materials and skills to decide whether some technology makes sense and helps to address local needs.

Pluriversal and grassroots technologies

Pluriversal technologies discussed by Velasco-Herrejón and others emphasise the importance of embracing ontological and epistemological diversity by involving the inhabitants of different socio-cultural territories into the co-design, co-production, and co-ownership of technologies. Pluriversal technologies are based on five different dimensions which help to examine that technologies are both inclusively designed, accessed and used. First, the **philosophical dimension** is underlying to all other components. Pluriversal technologies are based on relational or strong socionatural ontology and epistemological pluralism, which emphasise different ways of knowing and producing knowledge, as well as reciprocity, collaborative forms of work and mutual respect. The **environmental dimension** focuses on human-nature relationships and ownership structures. The **socio-political dimension** encompasses key elements of governance and political thought based on communalism, social justice and equity, while the **economic dimension** encompasses core economic principles, ideas, and

practices based on collective work, community ownership and redistribution. Lastly, the **spiritual dimension** addresses individuals' relationship to time, spirituality, and human fulfilment.

Grassroots innovation in Global South perspective can refer identification of innovative ideas, practices and technologies based on indigenous and local knowledge in marginalised communities. In the Global South, grassroots innovation usually relates to land struggles, reproduction of livelihoods and cultural identity. They rise from post-capitalist and post-developmental perspectives and are based on indigenous cosmovisions. As such, innovations emerging from bottom-up are based on radically different premise than Western growth-based innovations and offer an alternative to growth-driven innovation and technology development.

Critical summary

Alternative understandings of innovation and technology arising from the Global South can be understood as new ideas embracing ontological and epistemological diversity, and highlight co-design, co-production, and co-ownership of technologies. They provide an alternative to mainstream sustainable innovation as they are based on relational ontology and pluralist epistemology, relational human-nature relationships, common ownership, autonomy, adaptability, accessibility, needs based innovation, and socio-political justice and discard techno-optimism to solve sustainability challenges. Alternative models from the Global South, such as convivial technologies and grassroots innovations, challenge the ideology of technological solutions and progress embedded in Western capitalist economies, and take a systemic perspective into developing communal, needs and place-based innovations. They provide an alternative to innovation for profit and offer pathways to transformative change towards sustainability that embrace multiple levels of society, culture, and cosmology into innovation processes.

Further readings

Kerschner, C., Wächter, P., Nierling, L., & Ehlers, M.-H. (2018). Degrowth and Technology: Towards feasible, viable, appropriate and convivial imaginaries. *Journal of Cleaner Production*, 197, 1619–1636.

Maldonado-Villalpando, E., Paneque-Gálvez, J., Demaria, F., & Napoletano, B. M. (2022). Grassroots innovation for the pluriverse: Evidence from Zapatismo and autonomous Zapatista education. *Sustainability Science*, 17(4), 1301–1316.

Pansera, M., & Fressoli, M. (2021). Innovation without growth: Frameworks for understanding technological change in a post-growth era. *Organization*, 28(3), 380–404.

Velasco-Herrejón, P., Bauwens, T., & Calisto Friant, M. (2022). Challenging dominant sustainability worldviews on the energy transition: Lessons from Indigenous communities in Mexico and a plea for pluriversal technologies. *World Development*, 150.

Vetter, A. (2018). The Matrix of Convivial Technology – Assessing Technologies for Degrowth. *Journal of Cleaner Production*, 197, 1778–1786.