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Chapter 1

Introduction: Sustainable lifestyles, livelihoods and the circular economy

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Circular economy – a new approach for sustainable development?

Overlapping concepts and domains

In this book we address three separate yet overlapping thematic concepts and domains of knowledge, practice and discourse: sustainable lifestyles, livelihoods and the circular economy. Each of these concepts offer contributions to the overall transition to sustainable production and consumption systems and better lives for all. Common to these different concepts is the desire to provide for human needs and improve the quality of life while reducing social and environmental harm, creating pathways to sustainability (Leach et al., 2007).

The concept of *circular economy* (CE) focuses on a set of principles that offer an operational vision of concrete paths to sustainable production and consumption systems and thus to a sustainable economy. The CE approach highlights the importance of changing the current linear model into a system that is regenerative and restorative by design (Ellen MacArthur Foundation, 2015). This can be achieved by redirecting energy and material flows from a linear to a circular direction, transforming waste into productive inputs, reducing pollution, greenhouse gases and their impacts on health and environment. This involves systems thinking approaches that include changes in value systems, ambitious policies to internalise externalized costs and new approaches to production, distribution, consumption and investment within each sector of the economy (Stahel, 2016).

Lifestyles is a term used to describe the behavioural codes and cognitive frames enabling decision-making for actions and choices consistent with one's social identity and role within a particular community. This includes roles as consumers of products and services, producers (i.e., workers, managers, shareholders, service providers) and investors. Lifestyles are increasingly complex given that people tend to belong and identify with not one but a cluster of communities. Lifestyles are considered more or less sustainable to the degree that the actions and choices associated with different roles and identities are guided by sustainability values (Leiserowitz, et al, 2006).

Livelihoods, in turn, shape lifestyles in relation to the role people play in acquiring the means of living, whether as construction workers, farmers, professors, managers or artists. The concept of sustainable livelihoods relates to a wide set of issues that encompass the relationships between poverty and environment (Chambers and Conway, 1992). This includes

concerns with work and employment, poverty reduction, broader issues of adequacy, security, well-being and capability, and the resilience of livelihoods and the natural resource base on which they depend (Scoones, 1998; Scoones 2015).

The following sections discuss each of these three concepts in more detail, and explore how they relate to each other.

Circular economy definitions - unity in diversity

The circular economy is today a term that means different things to different people. There are a wide range of circular economy thought-schools including those who associate the term with cradle-to-cradle design, industrial ecology, performance economy, regenerative design and even biomimicry. The roots of the concept of “circular economy” go back to classical political economists (e.g., Ricardo, Smith, Quesnay) who saw the system of production and consumption as a circular process which “stands in striking contrast to the view presented by modern theory, of a one-way avenue that leads from ‘factors of production’ to ‘consumption goods’” (Sraffa, 1960, p.93). Others cite Kenneth Boulding’s 1966 paper “The economics of the coming spaceship earth”, or more recently the work of David Pearce and Kerry Turner (1990) as antecedents of the term. Moving beyond strict adherence to neoclassical economic precepts, CE has been described as a framework for re-designing the economy by the Ellen MacArthur Foundation that has been championing the concept globally since 2010 (Ellen MacArthur Foundation, 2015).

According to this contemporary school of thought, the circular economy concept is grounded in the study of non-linear, particularly living systems (Webster, 2017) and refers to an industrial economy that is restorative by design and relies on renewable energy; minimises, tracks, and hopefully eliminates the use of toxic chemicals, and eradicates waste through careful design. Imitating living systems, the CE approach works to optimize systems rather than components (i.e., “design-to-fit”). This is done through attention to material and energy flows, which according to McDonough and Braungart (2002) can be classified into two kinds: biological nutrients, useful to the biosphere, and technical nutrients, useful to the technosphere, i.e. the systems of industrial production. These definitions of a circular economy are based on a synthesis of ideas and concepts such as ‘cradle to cradle’ (McDonough and Braungart, 2002), biomimicry (Benyus, 1997) and the performance/sharing economy (Stahel, 2016), and include insights from industrial ecology. A recent definition by Geissdoerfer et al. (2017), who view the circular economy as a potential new sustainability paradigm, summarises the main elements of the circular economy as:

“a regenerative system in which resource input and waste, emission, and energy leakage are minimised by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.”

Overall, there is little consensus and convergence on the definition of the circular economy, and current definitions have a number of limitations (Homrich et al., 2018). Despite the breadth of the concept and related practices of the circular economy, it is becoming increasingly popular among policymakers. Circularity has been adopted as national policy by China in 2009 (see Chapter 8 of this book) and Finland in 2016. The Netherlands adopted a government-wide

programme aimed at developing a circular economy in the Netherlands by 2050. According to the Netherlands Environmental Assessment Agency, the approach of making optimal use of raw materials and resources contrasts with the currently dominant linear economy that operates on a “take-make-dispose” logic, assuming access to unlimited resources and thereby producing products to be discarded after use. A circular economy, on the other hand, “centres around the reuse of products and raw materials, and the prevention of waste and harmful emissions to soils, water and air, wherever possible” thus closing the loop (PBL, 2017).

In 2015 the European Commission adopted the circular economy concept as part of the EU’s 2020 strategy initiative “to modernise and transform the European economy, shifting it towards a more sustainable direction.” (EC, 2015). According to the EU

The transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy. Such transition is the opportunity to transform our economy and generate new and sustainable competitive advantages for Europe.

In support of the transition to circular economy, the EU package includes legislative proposals on waste, with long-term targets to reduce landfilling, and increase recycling and reuse. In closing the loop of product lifecycles, the package includes “an Action Plan to support the circular economy in each step of the value chain – from production to consumption, repair and manufacturing, waste management and secondary raw materials that are fed back into the economy” (EC, 2015).

While there is much excitement about the promise of CE, in assessing the potential for and transition pathways from a linear to a CE, it is important to acknowledge the different capacities, opportunities and pressures at different levels and stages of the process. As the Potting et al. (2017) point out

the actual circular economy transition should lead to closing cycles at the level of individual products, i.e. in the related product chains. The transition process may differ across products and between circularity strategies, where lower circularity strategies are still closer to a linear economy and higher circularity strategies are closer to the circular economy.

Technological innovation, they note, is mainly relevant for lower circularity strategies, whereas

socio-institutional changes become more important for higher circularity strategies increasingly involve transforming the whole product chain (i.e. systemic changes). Socio-institutional changes refer to differences in how consumers relate to products, how all actors in a product chain cooperate to achieve circularity, and all institutional arrangements needed to facilitate this.

Further, researchers have argued that proponents of the circular economy could learn from the social and solidarity economy, as well as from institutional economics, by embedding the CE in relations of power, more explicit value systems, and solidarity principles (Moreau et al. 2017). Towards this end, more consideration could be given to the institutional conditions necessary for setting rules that differentiate profitable from non-profitable activities in a

circular economy, and guaranteeing high labour standards. Additionally, questions remain as to whether the circular economic model should contribute to “alternatives to growth”, i.e. a sharing-rather-than-profit model involving changes to both production and consumption patterns; or simply to an alternative model of growth which would only involve changing forms of production and business models.

Circular economy in the context of Green Transformations

Despite the limitations, different goals and ongoing conceptual development within the circular economy, there seems to be consensus that the circular economy has, potentially, much to offer in augmenting existing efforts at environmental sustainability and solving global environmental challenges.

Conceptually, in this book, we approach the circular economy through the lens of green transformations, a particular type of thinking about and conceptualising transformations, which is primarily concerned with environmental sustainability, but also highlights issues of contested politics and the social dimensions of negotiating pathways. The perspective of green transformations is about “involving more diverse, emergent and unruly political alignments, more about social innovations, challenging incumbent structures, subject to incommensurable knowledges and pursuing contending (even unknown) end” (Scoones et al, 2015:54). A green transformations perspective emphasizes that there is no consensus on the ‘drivers’ of environmental stress, whether that be overconsumption or rapid urbanisation processes, and even less consensus on the required solutions and processes of change. Simply put, “a clear vision of what green transformations are required, for what and for whom remains elusive” (Scoones et al, 2015:5).

Furthermore, the green transformations lens highlights the existence of a number of narratives, each reflecting different and sometimes competing framings of environmental problem and solution, and therefore different versions of sustainability. These different narratives also appear in the transformations from a linear system of production and consumption to a circular economy. Research about the circular economy shows that there exist different pathways towards more circularity (Homrich et al., 2017). As we discussed earlier, the concept itself is contested, with several definitions bandied about. Some scholarship on the circular economy aims to achieve consensus about the concept, main principles and approaches (Prieto-Sandoval, Jaca and Ormazabal, 2018). However, we argue that it is not clear if these existing pathways will converge into one main circular economy approach or if they might instead further diverge into multiple pathways characterised by different practices and processes. As Scoones et al. (2015) have pointed out, green transformations will be achieved through a combination of pathways and there is no one-size-fits-all approach, so a diversity of political strategies will be required. In the spirit of the green transformation literature, this book seeks to document the diversity of meanings and practices associated with the Circular Economy, focusing specifically on the developing world.

Having presented an overview of the history and contemporary understanding of the circular economy, and highlighted some of the contestation around what the term means and how it is

enacted in practice, the next section discusses the circular economy in relation to narratives around economic development and economic growth.

Economic development narratives and the circular economy

The circular economy focuses on the creation and retention of value associated with natural resources and manufactured products by enhancing circular flows aimed at regenerating and restoring this value. This is usually interpreted as economic value, so that, increasing circularity of flows would enable greater economic value to be created, whilst minimising environmental impacts associated with the extraction of natural resources and emission of wastes. As argued by the Ellen MacArthur Foundation (2015), “In a circular economy, improving the value captured from existing products and materials, not just increasing their flow, would increasingly drive economic growth”. This is to be achieved by:

- Preserving and enhancing natural capital by controlling finite stocks and balancing renewable resource flows;
- Optimising resource yields by circulating products, components, and materials at the highest utility;
- Fostering system effectiveness by revealing and designing out negative externalities.

Similarly, the EU Action Plan for the Circular Economy emphasises that the maintenance of value of products, materials and resources in the economy for as long as possible is “an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy” (EC, 2015). Thus, the CE is usually understood in terms of enhancing resource productivity, i.e. the economic value created per unit of resource use, and decoupling economic growth from resource use and environmental impacts.

This means that the CE is usually embedded in a green growth narrative, emphasising new business development and market opportunities, more efficient ways of producing and consuming, and creation of local jobs. Using a simple economic model, the Ellen MacArthur Foundation (2015) projected that “GDP could increase as much as 11 percent by 2030 and 27 percent by 2050 in a circular scenario, compared with 4 percent and 15 percent in the current development scenario”. This is argued to be driven by “increased consumption due to correcting market and regulatory lock-ins that prevent many inherently profitable circular opportunities from materializing” (Ellen MacArthur Foundation, 2015). This is to be achieved, they further argue, whilst reducing CO₂ emissions by 48 percent by 2030 and 83 percent by 2050, compared with 2012 levels.

However, this view creates challenges for mainstream economic theory, in which economic value is interpreted in terms of exchange value, rather than use value. GDP measures value-added in the economy in exchange value terms, i.e. no intrinsic value is assigned to natural resources. Current approaches to measuring natural capital are based on assigning economic (exchange) value, e.g. through contingent valuation, in which people are asked what they would be willing to pay to preserve a particular feature (Farley, 2012). This leads to questions as to whether a green growth perspective, based on mainstream economic theory, will be sufficient to achieve the levels of resource use reduction and carbon emissions reductions needed to mitigate climate change and other environmental impacts.

Firstly, there is a danger that, if value is purely measured in economic exchange terms, then the contribution of resource and energy use to that value creation is neglected, leading to an

overestimation of the potential for beneficial resource productivity improvements. If circular economy changes are still embedded in an economy based on ever increasing levels of consumption, then some or all of the resource productivity improvements associated with CE could be taken back in higher consumption. Secondly, there is a danger that, if the wider value of social benefits associated to circular economy improvements is not adequately measured, then potentially socially beneficial changes will not be implemented. We now briefly explore these dangers.

Research by ecological economists argues that primary energy and resource inputs, together with improvements in the efficiency of their conversion to provide useful work, have been crucial drivers of past surges of economic growth (Ayres and Warr, 2005, 2009; Krausmann et al., 2009; Foxon, 2017). This suggests that at least part of the value embodied in useful goods and services should be attributed to these energy and resource inputs. However, in mainstream economics, no intrinsic value is assigned to these inputs. This means that any energy source or natural resource that can be profitably extracted and sold, will be. Hence, there is no notion of natural limits to these sources. This contrasts with work on planetary boundaries that argues that the overall scale of impact of human economic activities on the planet already exceeds key natural limits, including biodiversity loss, nutrient cycling and climate change (Steffen et al., 2015; Raworth, 2017; O'Neill et al., 2018).

As resources are not currently valued, this leads to highly wasteful use of these resources under the current linear economy model, for example short product lives, low utilisation of products and low capture of value at end-of-life. Hence, if barriers to the adoption of CE models can be overcome, then economic value can be created with much lower levels of resource use, so reducing environmental impacts. However, if this reduces the cost of the final good or service, then there is a danger that these beneficial outcomes of CE could be reduced by increases in overall consumption caused by adoption of these CE models. This is related to the so-called 'rebound effect' associated with energy efficiency improvements, in which these improvements lead to a reduction in the cost of the final energy service, and so an increase in consumption of that service, reducing or eliminating the expected energy saving (Sorrell, 2015; Korhonen et al., 2018). This suggests that natural resources need to be given an intrinsic value associated with the scarcity of these sources and the ability of the biosphere to assimilate wastes produced, for example by assigning a value on carbon emissions through imposition of a carbon tax or trading scheme (Baranzini et al., 2017).

Another concern is related to a neglect of the social and institutional dimensions of the CE (Moreau et al., 2017). The implementation of a circular economy requires institutional changes to overcome barriers to implementation, including internalisation of negative externalities such as carbon emissions, regulations to overcome imperfect information on CE alternatives, and education and incentives to overcome cultural lock-in to linear economy business models and user practices. Attention to social dimensions is also important to avoid potential unintended consequences and to ensure that the social benefits of CE solutions are spread widely. For example, the so-called 'sharing economy' has been identified as a key component of CE. This involves the adoption of practices aimed at maximising the utilisation of existing products, often enabled by the application of information and communication technologies. Well-known examples of this include Airbnb, the service that enables travellers to rent rooms or houses that would otherwise be unoccupied, and Uber, the ride-hailing service that connects users wanting a ride with car owners willing to drive them. Whilst proving highly popular to users,

these services have been criticised for creating new incentives to travel, crowding out existing providers that may provide a higher value service, and monetising previously freely-shared services, as well as offering low job security and in-work benefits to providers (Frenken and Schor, 2017). This suggests that the wider social benefits and potential unintended consequences of CE solutions need to be considered in designing institutional changes and incentives to promote their adoption.

Whilst still recognising the high potential of CE solutions to deliver economic value to users and businesses through significantly reducing resource use and environmental impacts, the recognition of these dangers leads to a note of caution and recommendation not to see the CE as a panacea for solving all environmental problems. CE solutions need to be embedded in an institutional context that recognises planetary boundaries for the overall scale of human consumption and production activities, and seeks to design systems that promote wider social wellbeing. In other words, in order to achieve a CE pathway, social, political, institutional negotiations within planetary boundaries must take place. This means going beyond a technical-economic framing of CE towards one that is centrally about the politics of sustainability and development (Scoones, 2016). The following section delves into the politics of sustainability and development as relevant to the circular economy, focusing explicitly on North-South power relations.

Circular Economy in the context of international development and North-South power relations

Green industrial development and global value chains

The circular economy concept not only offers potentials for environmental sustainability in the global North, but could also offer inspiration for new development models that support economic and social objectives in the Global South. According to a report by Chatham House, the CE could help to resolve some of the dilemmas posed by business-as-usual development models

by increasing economic productivity, generating employment and reducing exposure to volatility in raw materials prices. At the same time, CE strategies could avert some of the major pressures facing developing countries – including health and environmental effects from unmanaged waste – with clear benefits in terms of lives saved as a result of reduced air, water and soil pollution. (Preston and Lehne, 2017, p.6).

Countries in the Global South are beginning to realise the opportunities the circular economy might offer for development, especially for greening industrial development and addressing challenges of increasing waste generation. The CE concept might be best articulated as a green industrialization strategy that can avoid negative externalities to environment and helps safeguard development gains (Preston and Lehne, 2017). In this context it links to and supports existing green economy approaches and industrial development objectives, but goes beyond limited resource efficiency objectives and opens up new perspectives on the future of green industrial strategies. For example, Colombia is promoting CE as industrial development strategy and encouraging businesses towards this change (see Chapter 7 of this book), and multilateral development organisations such as UNIDO are promoting CE approaches such as industrial symbiosis in a number of countries including Uruguay and Vietnam. In African countries industrial repair and remanufacturing industries such as the Suame/Kumasi

automotive cluster (Schmitz, 2015) have been operating successfully for decades. More recently, in November 2017 the World Economic Forum and the Global Environment Facility established the Africa Circular Economy Alliance (ACEA) in collaboration with the governments of South Africa, Nigeria and Rwanda (Molewa, 2017) (see Chapter 9).

However, to date, only few studies have explored the potentials and demand for CE approaches among stakeholders in poorer countries (see, for example, Gower and Schroeder, 2016), or have sought to understand where the CE concept and narrative might complement or conflict with existing priorities and pathways.

Narratives and power relations

To understand how conceptions and narratives of the CE might differ in the developing vs. developed world, we must first examine these categories themselves. The practice of identifying certain countries as developed and others as developing is both ubiquitous and heavily debated. For example, these broad categories have been critiqued by scholarly interventions that question or reject the very notion of development and the binaries it suggests (Escobar 1995, Sparke 2007). Similarly, development agencies such as the World Bank have moved away from the use of the binary given the heterogeneity between different countries classified in the same group. Nevertheless, these simplified categories (developing vs. developed or North vs. South) help us examine geographic and ideological diversity within the CE. In this volume, we rely on this binary to highlight the ways in which CE principles are being revived or innovated in the developing world, and through this provide insights as to how the concept might be reimagined from the positionality of the South.

Thinking about what the CE might look like from the perspective of the South is important because mainstream notions of development and sustainability have been repeatedly challenged by voices in the margin. Questions that could be raised in this regard include looking at the politics of identity and power involved in deciding what counts as circular, or what is a sustainable lifestyle or livelihood (see Chapter 2). While the CE represents a challenge to the conventional linear economic paradigm, there is the question as to what additional perspectives, particularly from the south, may challenge and hopefully improve the concept and practice of CE as it currently stands. Conceptual expansion driven by ideas from the south has already been witnessed, for instance, in discussions around the concept of Sustainable Development. As Najam (2005) notes, in the domain of sustainable development, countries of the global south moved from initial skepticism and reluctant engagement to active agenda-setting a pattern that is now being seen in the CE as well, as discussed below.

What is often overlooked are the dynamics and politics of relationships between governments, businesses and people in the North vs. South, all of which are implicated in every aspect of a CE. Value chains and waste cycles have been global for some time now. Waste in particular has been a transnational issue marked by contestation and negotiation between the North and the South. From the crises around toxic dumping in the global south that prompted the creation of the Basel Convention to China's new agenda of restricting the import of "foreign garbage" from the west (see Chapter 3), unequal North-South power relations characterize the functioning of the existing (circular) economy. While historically, countries in the global north seemed to hold all the power in the domain of transnational waste dumping and trade, the situation is rapidly evolving with several countries in the global south instituting domestic policies to protect local environments. In 2018, China banned waste imports as the country is

waging “war on pollution” (Reuters, 2018). Before that, in July 2016, the east African countries like Rwanda, Kenya, Tanzania and Uganda decided to increase tariffs on imported second-hand textiles as cheap clothes from abroad were threatening local industries (CNBC, 2018).

Responding to pressure from countries in the South, economies in the North are having to rethink domestic policies and create novel collaborations. For example, the EU was working together with four African countries to develop e-waste recycling facilities (EC, 2015), since most of e-waste from EU countries ends up in Africa and Asia (see, for example, Imran et al., 2017). As the situation of transnational waste dumping and trade demonstrates, a CE cannot be achieved in a vacuum, but only through collaboration between countries. Transferring waste (or responsibility) to other countries is not possible in the long run as this would simply mean moving pollutants to ‘other corners’ of our world, an unjust solution in the short-term, and an unsustainable one in the longer term.

Beyond the issue of waste, we also see unequal power relations playing out in global value chains that are largely controlled by powerful business actors located in the Global North. Higher-value, employment-generating opportunities like product design, marketing and retail are sited in the North, while activity with lower economic value revolving around sorting, reusing and recycling waste is relegated to lower-income countries. For an inclusive transformation to a CE on planetary scale, we cannot overlook these systemic issues of unequal power relations entrenched in global value chains (Schröder et al. 2018). All these issues call for more critical and systemic approaches to theorising and imagining a CE.

Sustainable livelihoods and lifestyles in the circular economy

While the concept of CE provides a clear picture of how waste and emissions can be reduced through a redirection of energy and material flows, it may not be as clear on how this approach generates sustainable livelihoods for whom in the context of unequal patterns of use and ownership, located in a contested political economy (Scoones, 2015). Thus one of the key questions raised in this edited volume is to whether and how CE practices generate sustainable livelihoods. We provide brief explanations on each of these terms before discussing them in relation to the CE.

Sustainable livelihoods: concept and practice

The idea of “sustainable livelihoods”, an attempt to go beyond conventional definitions and approaches to eradicating poverty, was introduced in 1987 by the Brundtland Commission on Environment and Development, followed by the 1992 UN Conference on Environment and Development (Krantz, 2001). One of the more frequently cited definitions of sustainable livelihoods comes from Chambers and Conway (1992), who explain

a livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to their livelihoods at the local and global levels and in the short and long term.

While CE efforts highlight the possibility of new industrial service jobs in recovery, reuse, repair, remanufacturing and recycling, there remains the question of the reduction of jobs

following declines in new product sales and loss of manufacturing jobs resulting from increased sharing, self-service technologies and extended product life and use. While WRAP offers an optimistic view with new CE job opportunities across all skill levels reducing the “occupational mismatch” in high unemployment regions, such as the north of England (Morgan and Mitchell, 2015), to what degree can circularity ensure not just more jobs but more sustainable livelihoods is still an open question. Further, the question remains as to who will benefit from these job opportunities.

In the specific context of sustainable rural livelihoods, the CE concept appears to support and overlap with many traditional forms of farming, organic agriculture and restorative practices which benefit smallholder livelihoods. Examples which highlight his link and the synergies between circular agricultural practices and sustainable livelihoods are traditional rural communities in India (Chapter 10) and organic farming practices in Thailand (Chapter 11).

Sustainable lifestyles: concept and practice

In addition to the concept of sustainable livelihoods, we must also consider the issue of what types of sustainable lifestyle the CE can provision. The origin of the term “lifestyles” is often attributed to sociologists Thorstein Veblen, Max Weber and psychologist Alfred Adler. Both Veblen and Weber noted the role of lifestyles as a public expression of status, with Veblen (1899) especially associated with the concept of “conspicuous consumption”. On the other hand, Giddens (1991) views lifestyle as a complex of social practices but also as a strategic vehicle, which individuals use to negotiate a complex diversity of options in navigating modern social life, in contrast to the rigid behavioural rules and markers assigned by traditional society to designate and enforce class identity, role and expectations.

Sustainable lifestyles are therefore not simply about affluent consumers consuming less. Overall, they are life strategies that strive to cause the least harm to people and environment. In this sense, ones’ livelihood is an essential component of a lifestyle, a critical determinant as to the opportunities and capacities enabling a lifestyle to take shape and function. In turn, a lifestyle can become the means to cultivate, maintain and expand livelihood opportunities and capacities; such a becoming a union member or collective. The same applies to participation in circular vs. linear economy practices and processes, whether as employee, consumer, manager or investor. The idea implied here is that participation in a CE would require shifts in lifestyle patterns that go beyond a single domain to encompass larger life choices.

Constricted by poverty and limited access to resources and opportunity, lifestyles of the poor have also shown resilience, resourcefulness and innovativeness in ways the affluent could do well to learn. However, the overall trend globally has been towards less and less sustainable lifestyles. As increasing numbers in developing countries move into the new consumer classes, so are the consumption habits of the affluent increasingly adopted – larger houses, meat and dairy consumption, car ownership, air travel. While rising standards of living is a goal, the negative impact on health and environment is not. Thus considering the question of lifestyles explicitly within a CE framework is critical at this juncture of intensifying consumption.

Inside and outside the circle: Is sustainability a luxury?

Some will point out that these circular/sustainability practices imply more affluent consumers who have access to sufficient resources and assets allowing them the freedom to engage in “alternative means of satisfying needs” in contrast to the poor who are engaged in the daily

struggle to simply survive. As Auma Obama declared, “sustainable living is a luxury... the question is: Who can afford that?” (Deutsche Welle, 2012), noting that “green economy is a western term meaning that the economy has to become more environmentally friendly. However, often that doesn't come up in African countries”.

While lifestyle strategies are about individual choice, we need to take into account how the range of options, opportunities and abilities constrict or enable the choice of sustainable practices and lifestyles. Campaigns to “change lifestyles” might be more effectively framed in terms of expanding the freedom to choose a sustainable pathway, by attention to the enhancing the abilities and opportunities enabling sustainable practices and lifestyles. While this includes “having the relevant information and awareness”, it also means establishing the policies and infrastructure changes needed to overcome the various barriers that impede motivation as well as effective behaviour.

Who should these strategies and programmes promoting circular/sustainable practices and lifestyles aim to reach? Are they only appropriate for the affluent? How should the question be reframed in a way that will make it more relevant and appropriate for the poor? If the focus is primarily on reducing carbon emissions, then the target audience would more likely be the more affluent and over-consuming populations. However, if the focus is on meeting needs and improving well-being while minimizing harm to others and the environment, then the sustainable livelihood approach is especially relevant, highlighting those capabilities and opportunities needed to enable a truly sustainable lifestyle. A CE that leaves out the poor is not completing the circle. The world cannot afford making sustainability a luxury.

Circular economy: marginalisation or inclusive development?

If the CE holds the promise of creating new jobs and livelihoods, while also reducing environmental degradation, then the question remains as to who exactly will benefit from these opportunities. Historically, in the context of sustainable development, failure to explicitly consider the needs and lived experiences of marginalization populations (women, indigenous people, etc.) has resulted in poor development outcomes. Thus in the CE, policymakers, practitioners and thought-leaders might be well-advised to think about existing patterns of inequality and how these might be ameliorated or exacerbated in the CE.

One specific population that deserves mention in relation to the CE are waste pickers and other members of the informal waste sector. In many cities across the global south, thousands of individual waste pickers, sometimes organised as cooperatives, sustain themselves by extracting recyclable waste from street dumps and landfills, diverting these to recycling value chains (Wilson et al., 2006). The work of waste pickers, scrap dealers and informal sector recyclers represents an existing form of the circularity, which has increasingly come under threat. In several cities in Asia and Latin America, attempts at modernizing waste collection and disposal systems has resulted in the displacement of waste pickers, many of whom are women, indigenous or otherwise marginalized peoples. Organizations like WIEGO are now advocating for the formal inclusion of waste pickers and informal sector recyclers in the newly emerging CE, arguing that work opportunities in this sector should be made available to existing waste picking populations.

However, as scholars have argued, the politics of inclusion is complicated by itself (Anantharaman, 2014). For example, as Reddy (2015) shows, improvement schemes designed

by development agencies effectively marginalized informal sector e-waste recyclers in Bangalore as abject residents who were restricted to collecting and manually processing waste from the most marginal frontiers of the city's e-waste circuits. What this suggests is the following: even when waste pickers and other informal sector recyclers are included in circular economy schemes, they are included solely in execution roles or framed as beneficiaries of schemes. The experiential knowledge and innovative entrepreneurialism of these groups are frequently ignored. This raises the question of who is seen as a legitimate knowledge creator and expert in the CE, and one of the contributions of this edited volume lies in identifying case studies of existing circular practices in the global south that could serve as models elsewhere.

Issues of gender equity also deserve special attention in the context of the CE. As several scholars have argued, development projects that have failed to problematize the issue of gender, exclude and marginalize women, depriving them of livelihoods and status (Kabeer 1994, Marchand and Papart 1995). Additionally, there has been a tendency by scholars in the west to homogenize the experiences of women in developing nations, and this failure to understand the diversity of experiences and situations that women find themselves in results in prescriptions that are not suitable for the context. Paying specific attention to the ways in which CE initiatives can contribute to improving the lives of women living in poverty, or at the very least not exacerbate gender inequity, should be a necessary part of the CE agenda. The SDGs and the CE could potentially open new ways for women to achieve economic sovereignty and livelihood security via new home-based production opportunities or work in waste collection and upcycling. In the chapters on women waste pickers in Brazil (Chapter 4), women's empowerment through recent CE initiatives in Indonesia (Chapter 5) and women farmers in central India (Chapter 10), we see some examples of how this could be realized.

Introduction to the book chapters

The contributions of this book aim to broaden and advance the conversations on the circular economy by explicitly examining the diversity of practices that occur under this umbrella concept, and through this highlight some of the conceptual and practical tensions that exist in the CE.

In Part II of the book, the authors explore the different narratives and politics around municipal solid waste, especially plastics, lifestyles and livelihoods, highlighting issues of inequality and tensions between formal and informal systems.

In Chapter 2, Ashish Chaturvedi, Jai Kumar Gaurav and Pragya Gupta explore the various narratives of the CE in the context of Indian cities. The focus of the existing literature on CE has largely been techno-managerial with a large emphasis on the role of big business in solving the problem. However, as the chapter shows, a large part of resource and waste flows in India happen outside the formal economy. The question is how the techno-managerial solutions will impact on the vulnerable and marginal communities in urban areas and how the multiple contestations in the material and discursive arenas will play out as the circular economy advances. The authors highlight the limited focus on the politics of these flows in the existing CE literature apply an actor-based conceptual framework that combines circular economy models and situates them in the variable power geometries of actors involved in these material flows in urban areas in India.

The politics of marine plastics pollution are explored in Chapter 3. Patrick Schröder and Victoria Chillcott highlight the politics behind the global trade in plastics waste, the most prominent example being China's ban on importing "foreign garbage" from the West. The chapter also tries to unpack issues around consumer politics, recently announced corporate "zero plastics" initiatives and ongoing lobbying against hard policies and bans of certain plastic products. The political economy of closing land-based leakage points of global and local plastic value chains and questions about sources of plastic waste will be crucial to solve marine plastics pollution.

In Chapter 4, Patricia Noble unpacks the contributions of informal waste pickers to closing the waste management cycle in the mega cities of Delhi in India, and São Paulo Municipal Area (SPMA) in Brazil. The chapter identifies the conditions in both cases that enable informal waste pickers to contribute to improved recycling rates and how waste picker cooperatives contribute to improving livelihoods of the urban poor. The findings are further analysed through a Green Transformation lens, to understand the specific conditions that catalyse informal waste pickers to recycle and close waste management cycles, which will be crucial to support the wider transformation to a circular economy.

Chapter 5 on women and CE initiatives in Indonesia by Priliantina Bebasari shows the important role that women have today in the fight against plastic waste and in achieving a circular economy. The chapter identifies circular economy initiatives in Indonesia which have provided poor local women with new knowledge and skills in the upcycling of non-hazardous solid waste, and to obtain new sources of income to support their families. Not only that, some women even had the chance to taste a more political life as they were involved in some advocacy work and later invited by the local governments to contribute in formulating local policy on waste management. More systematic support from the national government is required so that such women empowerment efforts do not happen just randomly and short-term, lacking clear direction and long-lasting impacts. In the chapter it also becomes clear that the CE is a new concept, though the upcycling activities have been implemented long before the CE concept 'arrived' in Indonesia.

The Argentinean Zero Waste Framework is analysed in Chapter 6 by Jacqueline Gaybor and Henry Chavez. The chapter discusses and analyses the progress and limitations of a particular case in Buenos Aires, Argentina, that is in the process of implementing a zero waste framework. Although waste prevention and re-use are considered guiding principles of the framework, neither have been prioritized in practice. Instead, the local waste management has been characterized by end-of-pipe solutions which include recycling and landfilling. This paper discusses the management of waste from disposable menstrual technologies and seeks to highlight the importance of prevention and re-use.

Part III of the book highlights the emerging relationship of the circular economy to national industrial policy frameworks and business approaches.

Chapter 7 by Claudia Garcia and Steve Cayzer provides an assessment of Colombia's circular economy transition readiness at a national level. The circular economy offers an alternative development narrative for Columbia which promotes prosperity while regenerating natural capital via innovation and new business models as opposite to current natural resources

extraction strategies. This narrative contains valuable insights for Colombian development, while the Colombian context provides a useful perspective on mainstream euro-centric circular economy narratives. This chapter explores the enablers that would facilitate the transition towards a CE in Colombia given its specific circumstances. An enabling framework is proposed to assess the current state of CE in Colombia and to identify the main interventions that are required to support a transition towards more circularity of production and consumption systems. The assessment shows that Colombia does not yet have the right enabling conditions for a circular economy, but several opportunities are identified including greater political coherence; a suitable fiscal framework for sustainable practices; a robust IT infrastructure; and use of ICT by enterprises to develop CE business models. The findings of this chapter are specific to Colombia but have relevance for CE transitions in other low and middle-income economies.

In Chapter 8, An Chen, Yuyan Song and Kartika Anggraeni take a look at China's CE and industrial parks developments where industrial symbiosis has become an important strategy. The specific case study of the Tianjin TEDA Eco Center highlights the role of capacity building and the contribution international development cooperation can make to promoting circular economy practices in green industrial development. Furthermore, the case study also shows the importance of stakeholder engagement, trust building and facilitation of partnerships between companies and local governments to make industrial symbiosis work in China's eco-industrial parks. The chapter also highlights remaining challenges that need to be overcome including appropriate resource pricing and fee systems for waste to fully reflect environmental impacts and to factor in resource scarcity concerns.

In Chapter 9 Peter Desmond and Milcah Asamba explore the current state of the circular economy in Africa where the circular economy as a concept is still vague with case studies remaining largely hidden. The legal and regulatory frameworks needed to foster circularity are still in their infancy in most African countries and mechanisms to realise the transition towards green economies are often not in place. Looking at circular economy policies and practices in Kenya and South Africa in the sectors of renewable energy equipment and electronic devices, the chapter explores how the transition towards a circular economy in Africa can contribute towards the achievement of the UN Sustainable Development Goals through the creation of national and regional roadmaps. Opportunities are explored to apply sustainable principles and strategies in a variety of contexts to benefit economies, livelihoods and the environment.

Part IV explores the evolving relationship between rural livelihoods, traditional circular economy practices in agriculture and changing lifestyles of farming communities.

In Chapter 10 Deepak Sharma and Jayesh Joshi provide insights into traditional circular economy approached among endogenous rural communities in South Rajasthan. The chapter shows how circular economy principles are interlinked with nutrition-sensitive agriculture, how it can be utilized to address malnutrition among endogenous communities of India and how to address Sustainable Development Goal 2 "Zero Hunger". It highlights the work and research of the civil society organization VAAGDHARA, applying principles of the circular economy for the revival of the traditional nutrition sensitive farming system with endogenous communities in India. Participatory tools were developed by different agencies and participatory learning and action (PLA) tools were customized and applied across 30 villages of the Banswara districts. Based on this research the authors developed a framework to apply

approaches of traditional circular economy principles in agriculture and support sustainable lifestyles.

The concept of the Thai Sufficiency Economy and how its links with lifestyles and the circular economy is explored in Chapter 11 by Atsushi Watabe. In the chapter, organic farming practices are explored as opportunity to encourage people to adopt a Sufficiency Economy and the contribution to the shift of the agricultural sector to the circular economy. The case study of a peri-urban village in Northeast Thailand reveals that people have differing attitudes and contrasting narratives to organic farming, derived from varying livelihood conditions and concerns and lifestyle aspirations of farmers to maintain their living going into the future.

Part V is the concluding section of the book and will provide a brief outlook for the circular economy in developing countries. In Chapter 12, the book's editors Patrick Schröder, Manisha Anantharaman, Kartika Anggraeni and Tim Foxon, provide an outlook on the circular economy potentials for the SDGs and international development cooperation, while also highlighting potential risks and pitfalls that the circular economy could pose to developing countries.

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