

Hand in glove? Processes of formalization and the circular economy post COVID19

Paul Dewick (1,2), Jose Pineda (2)* and Ronnie Ramlogan (2)

(1) Keele Business School, Keele University, UK

(2) Manchester Institute of Innovation Research, The University of Manchester, UK

*Corresponding author: Jose Pineda, (jose.pinedamendoza@postgrad.manchester.ac.uk), Booth St W, Manchester M15 6PB.

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Abstract

The effects of COVID19 have been severe in developing countries. It has been a particularly difficult time for informal small-scale farmers who live in rural areas and lack formal safety nets. These farmers are the cornerstone of national food security strategies. In this perspective paper, we discuss how circular economy principles could help these farmers reduce their states of vulnerability whilst engaging with nonlinear pathways of formalization. We argue that circular principles can go hand-in-glove with processes of formalization as long as interventions are made to help informal small-scale farmers overcome structural problems. We make a series of recommendations for policy makers and other stakeholders.

1. Introduction

The severity of the COVID-19 pandemic has brought into the foreground urgent structural problems in developing countries. Deficiencies in the provision of health services, a lack of infrastructure and technology, and insufficient access to financial assets is compounded by a large proportion of the population working in the informal economy. Workers in the informal economy have found themselves particularly at risk from the virus, both directly as they lack health insurance, basic sanitary conditions and protective equipment in their work, and indirectly as they have no legal protection and struggle to access government bailouts.

Whilst significant resources have been poured into addressing the immediate consequences of the coronavirus, there are calls for interventions to consider explicitly the long-term sustainability implications of changes to consumption and production systems (Sarkis et. al, 2020). Recovery from the COVID19 crisis could offer a rare opportunity to simultaneously progress formalization and fundamentally restructure economic activities toward more sustainable systems of consumption and production.

One alternative way of organizing consumption and production that has received much attention among industry, policy makers and academics is the circular economy (Dewick et al., 2020). Whilst the circular economy concept is contested, it is generally understood to mean the transformation of linear forms of production into supply chains that design out waste and pollution, keep products and materials in use, and regenerate natural systems (Morlet et. al, 2016). The circular economy can help developing countries forge ahead with new, alternative systems of consumption and production that deviate from the 'take-make-dispose' characteristic of modern economies (Schroeder et al., 2018; Schroeder et al, 2019). One barrier hindering this transformation is the high degree of informality.

We focus on agri-food systems of consumption and production in developing countries where rates of informality are high. Transformations in provisioning systems, such as agri-food systems, are particularly relevant for a range of sustainable development goals. A large proportion of agri-food products come from thousands of informal, small-scale farmers (Lowder et al. 2016). These actors are conditioned to selling their products locally, at low profit margins and without following labor, health or tax regulations. They have limited access to formal credit and do not continuously upgrade the technology used in systems of production. Although they engage in farming practices that are recognizably circular (e.g. reusing and recycling many of the materials, and regenerating their land), they have not been able to capitalize on these ways of doing things to support new pathways of sustainable development. Indeed, sometimes the process of formalization has led to the adoption of conventional linear agricultural practices to increase outputs. In this paper, we consider whether interventions to promote the circular economy could go hand-in-glove with expediting formalization processes, helping economic actors change their practices while reducing their economic and social vulnerability post COVID19.

Our analysis proceeds as follows. The next section contextualizes the challenge presented by COVID19 for agri-food systems of consumption and production. Section 3 considers the implementation of circular practices in developing countries. Section 4 focuses on how circular principles and practices might present informal small holder farmers with a model through which they can find improved social and economic conditions. Section 5 recommends a series of institutional capabilities that need to be built in developing countries to progress transformation toward a formal, circular economy. Section 6 provides brief conclusions.

2. COVID19 challenges for agri-food systems of consumption and production

Crises', 'jolts', 'shocks' are often cited as precipitating fundamental change (Archibugi et al., 2012). The immediate impact of the 2020 pandemic, and groundbreaking responses from government, industry and society around the world qualify COVID19 as a 'crisis' (Blériot, 2020) that is unparalleled in modern times. For agri-food systems of consumption and production in particular, the coronavirus pandemic has led to concerns about fluctuations in international commodity prices, changes in patterns of consumption and disruptions to global distribution networks (Torero, 2020). A worst-case scenario may see global poverty increase by at least 420 million people, with developing countries being most severely affected (Sumner et al. 2020).

In the face of extraordinary events like pandemics, but also natural disasters (e.g. floods, famine) and man-made crises (e.g. food safety scandals), agri-food systems need to be resilient enough to avoid the collapse of essential goods and services provision and to respond rapidly to new patterns of consumption (Ivanov & Dolgui. 2020). Farming communities will be significantly affected. Under conditions of crisis they may lose access to markets, seeds and other farming inputs, all of which could undermine food security (Siche, 2020).

A further consequence of the pandemic in developing countries is its potential for severing the linkages by which traditional supply chains connect the rural and urban sectors. Without other means of income generation, small-scale farmers will be forced into modes of self-sufficient production to survive. An opportunity exists for new agri-food production systems to reset

those informal rural-urban connections, reshaping and rearranging them under new formal principles.

The legacy of COVID19 is likely to be the further adoption of new forms of production to mitigate future risks by using resources more sustainably and supporting economic and social outcomes for small-scale farmers (Worstell, 2020).

3. Circular agri-food systems of consumption and production in developing countries

The academic literature is making strides toward a more comprehensive view of the factors that hinder or facilitate the circular economy (Vermunt et al., 2019). Even so, most of the literature on the circular economy explores projects in developed countries, and attention is just starting to be paid to the challenges of implementing circular systems in developing countries (Ferronato et al., 2019; Preston & Lehne, 2019). Little has been said about how large numbers of informal actors in developing countries might contend with, and be supported in, adopting circular practices that support new pathways of sustainable development.

Reduce, reuse, recycle, regenerate are principles of the circular economy (Morley et al., 2016). Implementing a circular economy system in agri-food systems of consumption and production involves, for example, reducing excessive use of inputs (either toxic inputs, or non-toxic inputs that are used in excess) without affecting negatively levels of overall production, and looking for opportunities to reduce food waste in both production and consumption; reusing materials and resources whenever possible; and, recycling waste as inputs into new products. Strategies for implementing these principles occur at all stages of the agri-food consumption and production system. In addition, 'regenerative' farming techniques are a central aspect of circularity in agri-food systems (Morseletto, 2020). For example, ecological intensification options that take into account pest suppression, soil fertility, climate variability, water conservation have proven to be beneficial for South African small-scale farmers (Rusere et al. 2019). Another example is the adoption of small-scale biogas technologies in rural areas, which replace non-renewable sources of energy and make use of farming wastes (Mwirigi et al., 2014).

Putting circular principles into practice cannot ignore the social and institutional context. One of the major challenges of developing countries is poverty reduction and formalizing the economy (Lundvall & Lema, 2016). The scale of the challenge is striking: there are over 570 million small-scale farmers and family farms in the world; in low- and middle-income countries about 80% of the farms are smaller than 2 hectares (Lowder et al. 2016). Most of these operate in the informal economy (Rapsomanikis, 2015) under various conditions of subsistence and vulnerability. Some are especially vulnerable. For example, customary practices can present women in the rural economy with even greater barriers to land access and to inherit, affecting their inclusion in the labor force (Emram & Shilpi, 2015; Daley & Englert, 2010).

Circular principles present an opportunity to facilitate the movement of small-scale farmers from the precariousness of the informal economy. In India, for example, it is estimated that the adoption of circular economy principles could increase GDP by up to 30% by 2050, with annual benefits of USD 61 billion to the food and agriculture sector (Morlet et al., 2016). If investments are actively directed towards supporting smallholders, this represents a huge opportunity for a sector that supports the livelihood of 58% of Indian rural households. At the same time, it

could mitigate greenhouse gas emissions by 44%, reduce soil degradation and water waste in the agri-food sector, and enable greater stability in the long-term supply of food (Ibid).

4. Progressing agendas of formalization in developing countries through circularity

The process of formalization requires informal actors to engage with formal markets and adopt formal rules of competition. This is not a simple task and they face various obstacles to becoming part of formal market structures. Bureaucratic hurdles, high registration costs, and lack of access to collateral for formal credits (De Soto, 2000) are compounded by rigidities in tax regimes and labor market regulations (Loayza, 1996) and unfavorable trading arrangements with retailers (Nandi et al., 2017). While research has focused on identifying the 'right' mix of sticks and carrots to reduce costs and nudge informal actors into becoming formal (De Andrade et al., 2013), the process by which this happens has been largely ignored.

Informal actors tend to be close to precarious states of poverty and lack not only adequate working conditions but also social safety nets. They are not always protected by the rule of law or long-term contracts. They tend to rely on personal relations and live under daily wage conditions. An important group of informal actors are involved with small-scale farming. Even though these actors have developed mechanisms to survive and compete, they are left vulnerable when socioeconomic conditions structurally change. For them, formalization can be a way out from states of high vulnerability - states that are exacerbated in times of crisis, such as those they are going through with the COVID19 pandemic. The circular economy offers a model through which they can find greater social and economic stability.

For example, the implementation of circular economy principles can reduce the risk of domestic price volatilities (Morlet et al., 2016). Regenerative farming practices, such as using organic fertilizers, either from their own operations or a near-located source, means lower exposure to market fluctuations in the price of inorganic inputs.

Second, the adoption of circular principles requires better forms of organization among small-scale farmers and their extended networks. The wider network includes those actors that provide extension farming services, local authorities, suppliers, logistics, and retailers. The benefits include more stable relations, opportunities for closer, long term formal contracts, access to lower cost credit, less dependence on intermediaries, and closer contact with consumers.

Third, circular practices could help small-scale farmers increase their production and productivity (Preston & Lehne, 2017), particularly if accompanied by the adoption of new digital technologies (Deichmann et al., 2016).

5. Recommendations to support a transition toward a formal and circular economy

To support the adoption and diffusion of circular principles, developing countries must create and develop new institutional capabilities (Preston et al., 2019). It has long been observed that farmers need to strengthen their self-governing capabilities to manage shared resources (Ostrom & Gardner, 1993). This is especially important in the face of structural change. What is needed is an explicit recognition of the benefits of the circular economy in terms of helping

informal actors find greater stability and reducing their vulnerability, while improving the resilience of food systems.

A systemic approach that builds capabilities to sense and seize opportunities in times of uncertainty (Teece et. al., 1997) can help prevent or mitigate the risks during periods of high vulnerability. This is a significant challenge because the atomistic nature of the informal economy, fierce competition, small profit margins, and lack of resources, makes it difficult for informal actors to coordinate new pathways of development (La Porta & Shleifer, 2014). To adopt a circular model, they need to collaborate and coordinate with formal actors within the agri-food system in a unified and legitimate way. In this section we outline a series of recommendations for policy makers and other stakeholders in supporting a transition to a formal and circular economy.

5.1 Building new collective capabilities through member-based organizations

Member (or membership) based organizations (MBOs) offer the potential of uniting small-scale farmers in developing countries (Chen et al., 2006). MBOs can exist at a local level to enable the clustering of small-scale farmers. Organizational scaffolding can facilitate regional MBO hubs, integrating and coordinating several MBOs.

MBOs also help create legitimate consensus that cooperation is essential among scattered actors. Crises such as the COVID 19 pandemic present unforeseen challenges. Groups of small-scale farmers who are organized collectively to face uncertainty in systematic ways will have a better chance of surviving. The case of Fairtrade provides a precedent where certified MBOs established more inclusive modes of governance so that all farmers could be involved in the decision-making process (Renard, 2005). This more democratic involvement would allow small-scale farmers to collectively agree new meanings for the circular economy principles, closer to their contexts and realities. In this way, the adoption of circular economy principles and practices can avoid undermining local culture and traditions.

The establishment of circular principles might require further organizational changes to manage the flow of materials across the agri-food system. Mutersbaugh (2002) looked previously at farming certification. He describes how early on in the implementation process, the MBOs had to incorporate new professional roles such as training officers and auditors to ensure that all farmers applied the new standards. As a result, certified farmers had access to new markets, became part of new supply chains with more stable importer-producer relations, and received premium and floor prices which reduced their vulnerability in times of crisis.

5.2. Connecting with new supply chains

Given the interrelated nature of a circular system, small-scale farmers would be required not only to change how they produce goods, but also to innovate with respect to how they connect with other actors in formal supply chains. This could prove to be very challenging, as from their standpoint it involves a qualitative life change. Small-scale farmers' actions and decisions are conditioned by a context that not only involves trust in personal -- i.e. face to face, informal -- relations and low technology farming, but also in production cycles that are subject to the forces of nature and which might not always match the exact criteria of strict formal supply chains.

To identify potential opportunities along the supply chain where the system could loop-back resources that are being disposed (waste, food excess, excess of materials, etc.), farmers would need to pool resources through the MBOs and establish new criteria for cooperation (e.g. ledgers, production standards, infrastructure for common use). Individual small-scale farmers could leave the most technical aspects to their MBOs, who could muster the required capabilities and provide these as low-cost services to their members.

Those small-scale farmers able to establish the new criteria of coordination will soon find that there is greater pressure in global supply chains to adopt methods of knowledge management and traceability. Whereas in the past this was more important for big importers (Reynolds, 2009), it will become increasingly relevant for farmers wanting to be more resilient. Small-scale farmers would have to be more accountable, but in turn they would become more flexible to reconfigure themselves much faster when circumstances changed along the supply chain. For example, if the criteria through which exporters compete post COVID19 places greater importance on transparency and reducing climate impacts, then better traceability could better identify with precision the carbon footprint of products from farm to fork, revealing opportunities for carbon reductions. Moreover, if the pandemic impacts local food security, more sophisticated understanding of changes in demand would allow excess food to be diverted to areas suffering from food scarcity, and give small-scale farmers greater maneuverability to plan ahead for their next farming season.

5.3. Accessing new assets to facilitate change

In addition to new organizational ventures and new supply chain arrangements, facilitating access to new infrastructure is also necessary. Informal small-scale farmers would benefit from access to assets such as water processing infrastructure, storage facilities, local logistics, recycling facilities and food processing capabilities. MBOs could pool resources to invest in new infrastructure (or access to infrastructure) facilitating greater resilience. For example, more storage space provides flexibility in the face of over-supply; new food processing capabilities provide opportunities to respond to changes in demand.

Rural areas of developing countries often lack access to adequate infrastructure (e.g. internet, electricity), which hinders the adoption of digital technologies (Foliste et al., 2019). New forms of coordination that allow systematic cooperation can - over time - facilitate the adoption of new infrastructure and technologies in rural areas. This will help many small-scale farmers who already apply some of the circular principles, but not always in consistent or optimal ways. Importantly, interventions to increase the diffusion of new technologies and infrastructure to support the circular economy should highlight the benefit to small scale farmers, rather than spotlighting how the system might improve as a result of them being used.

5.4. Overcoming financial challenges of formalization

It is typically difficult for informal actors to access formal credit due to the low number of bank accounts, the lack of a proper accounting system, and inadequate collateral. Small-scale farmers need to incorporate forward planning in their operations as there is often a lag between investment and cash flow. Even when formal lenders have developed products for the informal economy, their uptake has been hindered by non-monetary barriers such as having to provide

formal documentation before receiving the loan, or receiving better payment conditions from the informal lenders (Guirkinger, 2008).

In other cases of certification, we see how small-scale farmers were able to overcome these challenges because they had access to floor prices, price premiums, and more stable partnerships with buyers. For example, in the case of Fairtrade, buyers were obliged to co-finance at least 60% of small-scale farmers' production (Reynolds, 2009). Before such a system to support investment in circular practices is institutionalized, government loans or development agency support is likely to be needed to bridge the financing gap.

6. Conclusion

In this perspective paper, we argue that circular economy principles can go hand-in-glove with processes of formalization, helping small-scale farmers to reduce their states of vulnerability in the face of crises such as the COVID19 pandemic. Whilst the current crisis will require new measures in developing countries to secure food security, we argue that the adoption of circular principles could guide small-scale farmers towards becoming part of formal agri-food systems that reduce their social and economic vulnerability and improve environmental outcomes.

Interventions to facilitate the adoption of circular principles can help overcome some of the structural problems faced by informal actors. The atomistic and sometimes precarious nature of existence for informal farmers makes it difficult for them to scale up and engage with larger markets; low profit margins hinder investment in more productive capital or in new technologies that could be applied directly to increase the effectiveness of their systems of production. We draw a series of recommendations for policy makers and other stakeholders interested in charting a transition through these difficulties by promoting circular principles:

- (1) gradually establish new forms of member-based organizations at multiple levels that engender circular principles among their community of small-scale farmers;
- (2) support informal farmers to engage actively in democratic forms of governance within their MBOs, to pool resources and coordinate better the interlinkages required to maintain circular principles;
- (3) facilitating access to infrastructure and technologies that can support circular practices; and
- (4) developing a system to support investment in circular practices.

The system cannot be changed overnight. The creation and maintenance of new institutions to support a circular, formal agri-food system must proceed in stages. The legacy of COVID19, with all its tragic and costly immediate consequences, might be the acceleration of hand-in-glove processes that can improve economic, social and environmental outcomes within agri-food systems in developing countries.

Looking beyond the agri-food sector, we need to understand better the kinds of organizational innovation that can support the adoption of circular practices in developing countries. Some of the recommendations here are relevant to sectors where informal actors organize themselves in member-based organizations - sectors such as public transport, waste picking and mining. How policy makers and other stakeholders overcome the challenges of

connecting circular economy principles with processes of formalization will have important consequences for the transition toward equitable, inclusive and environmentally sound economies and societies.

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Authors

Paul Dewick is Professor of Sustainability and Innovation at Keele Business School, Keele University, and an Honorary Research Fellow at the Manchester Institute of Innovation Research in Alliance Manchester Business School, The University of Manchester. His research explores the role of innovation in systems of sustainable consumption and production. He is a member of the Steering Committee of Future Earth's Knowledge Action Network on Systems of Sustainable Consumption and Production, and co-leads the Working Group on Circular Economy. <https://orcid.org/0000-0002-1176-2292>